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Original Articles.

CONSUMPTION: AN INDOOR DISEASE.[1]

BY SAMUEL W. ABBOTT, M.D., BOSTON.

"How the people live is one of the most important questions that can be considered, and how — of what causes and at what ages — they die is scarcely of less account; for it is the complement of the primary question, teaching men how to live a longer, healthier and happier life."

These words were written nearly a half-century ago, by one of the foremost medical men of his day, Dr. William Farr, and have lost none of their meaning as applied to our own times.

A careful study of the different classes and species of infections reveals their true character as widely diverse, as much so in fact as the different classes of plants which make up the flora of a country, or the different forms of animal life which constitute its fauna. The active agents of infection appear to be only lower forms of life. The infections of animals, the infections of plants, the infections of mankind, have their natural habitats or soils for growth, and are also capable, in many instances, of culture or growth upon other soils.

There is much yet to be learned in regard to the habits or life of the different infections — much that will aid us in the future in successfully combating them.

No form of infection has been studied with greater interest, during the past quarter of a century, than that of tuberculosis. Prominent among the characteristics of this disease, which have been shown by years of observation, by experiment and careful study, are the following:

I. Within the Body.

(*a*) A slow and indefinite period of incubation.
(*b*) In the majority of cases it appears as a disease of the lungs.
(*c*) Selection of the youthful or early adult period of life (fifteen to thirty years).
(*d*) It exists as a disease of certain other mammals as well as of man.
(*e*) Mode of entrance into the body: (1) by the lungs; (2) by the alimentary canal; (3) by inoculation through the skin, in the foregoing order of frequency.

II. Outside the Body.

The infection leaves the body mainly in sputum coughed up from the lungs, but may occur in secretions or excretions from other diseased organs.
The infectious sputum is mainly that of the lungs, and not that which is simply discharged from the mouth as saliva; nor does it usually exist in vomitus.
The tuberculous sputum specially dangerous is dry.
The tuberculous sputum of enclosed air-spaces constitutes a far greater danger than that which remains out-of-doors.

The foregoing conditions may be considered as mainly accounting for the fact that consumption bears the characteristics of an indoor infection. It may be stated, however, almost as an axiom, that this characteristic also applies to nearly all the infectious diseases in a measure, but in a more limited sense to whooping-cough and still more to influenza. Given a definite number of healthy persons, say 1,000, having identical conditions as to age, sex and race, and let them be divided equally, 500 to lead an indoor life, and the other half an outdoor life (for example, like fishermen); let an equal quantity of infectious material, for example, that of diphtheria, scarlet fever, or the dried sputum of consumptives, be distributed equally among the two groups, and it may be laid down almost as an axiom, that the indoor group will become infected in far greater numbers than the outdoor group.

The reasons are plain: The persons composing the indoor group are aggregated more closely together and the air-supply is limited in proportion to the efficiency of the ventilation, and these two conditions, the density of aggregation (as shown by Dr. Farr's early reports) and the limitation of the air-supply, or, in other words, the ventilation, favor the spread of infection.

The preservation of the vitality of infectious material is also secured by the protection afforded by enclosed areas, either in rooms, workshops, railway cars, staterooms, cabins, or other enclosed spaces. Hence the usefulness of measures adopted by boards of health, in the shape of ordinances forbidding the practice of spitting upon the floors of such places.

On the other hand, the outdoor group is subjected to similar influences only in an infinitesimal degree. Ventilation is not needed, since the outdoor air affords the necessary protection by its enormous diluting power. The density of aggregation is greatly diminished and disease germs lose their vitality under the destructive influences of the wind, the sun and the rain. The chief danger here arises from the conveyance of such material indoors upon boots, shoes and dress skirts.[2]

Two persons standing or working at a distance from each other of five or ten feet are far more liable to transmit and to receive infection from each other when indoors than in the outdoor air.

In consequence of the peculiar methods under which tuberculosis is spread from one person to another, from the sick to the well, it is, therefore, desirable that the most careful attention should be bestowed upon the condition of those persons who are compelled either to live or to work indoors, and that a due measure of the work of boards of health with reference to the restriction of the spread of this disease should be expended in this direction. The danger from the consumption of milk and meat of tuberculous animals has been investigated, and thus far, while the danger to be feared from this cause may be said to have passed from the region of possibility to that of probability, that which may be feared from the diffusion of sputum in enclosed areas or spaces may be said to amount to a certainty.

Very much of the investigations now being conducted in other countries in regard to industrial hygiene depends upon this principle of indoor infection. Unfortunately very little has yet been done in this direction in America. (The few papers in the *Transactions* of this Association, especially the prize essay of Mr. Ireland, should be supplemented by some active operations upon our part as an organized association working for the public welfare and having the good of all classes in view.)

The conditions to which I have alluded being known and recognized, we are prepared for the statement of Cornet that open-air infection from tuberculosis may practically be disregarded, since no positive evidence has ever been presented to the effect that human beings ever contract tuberculosis in the open air. The results of observation and experiment both tend to show that the far greater danger lies in the direction of indoor infection.

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[1] Read at meeting of American Public Health Association, Philadelphia, Pa., October 27, 1897.

[2] See Cornet's experiments and those of W. Kruse (Uber die hygienische Bedeutung des Lichtes), in Koch's Zeitschrift f. Hygiene; v, xcviii and xix, p. 313.

Unfortunately, when the term "infectious" or "contagious" is applied to a disease, there is no discrimination in the minds of the laity, and such disease is at once classed with small-pox, measles and scarlet fever; but infection has its limitations and degrees and those of tubercular infection are well defined and are bounded by narrow limits. Dr. Russell in his excellent pamphlet on the "Prevention of Tuberculosis" quotes the following statement of the French League for the Prevention of Pulmonary Phthisis:

"We know further that the consumptive is not in the least dangerous by contact or proximity, that it is neither his body nor his breath which is hurtful, and that we can chat with him for hours, live with him for years, and even sleep in his room and give him the most constant care, without running any serious risk, *provided we take certain precautions*, the chief of which is to collect his expectoration, and not to delay the destruction of his spittle until it becomes dry, and is disseminated as dust into the atmosphere."

And very wisely adds —

"This position is logical and unassailable. If you accept the doctrine as sound, the practice must be conceded as sufficient. Let there be spittoons handy for everybody; don't put your spit in the way of drying and becoming dust; don't anywhere stir up the dust in inclosed places. The remedy is so commonplace that, after reading all that has been written and spoken, and proclaimed and enjoined, when we look at our notes and find nothing but sputum, spittoons and dust, we are apt to show a little temper, like Naaman when he expected the prophet to hold a solemn function over his leprosy, and he merely told him to go and wash himself. No doubt, the very simplicity of the prescription will constitute the greatest difficulty in the way of its acceptance and observance. . . . Only a clear apprehension of, and firm belief in, the doctrine that practically consumption is communicable through dried expectoration, and nothing else, will save the practice from ridicule."

To say, then, that consumption is not infectious is to contradict the highest authorities, who appear to have settled this question both by experiments upon the lower animals and by observation, both with reference to men and the lower animals.

I shall now call your attention to some of the proofs of the proposition which forms the title of this paper, that consumption is an indoor disease:

(1) The evidence shown by occupations.

(2) That which is presented by the conditions of age and sex.

I. AS TO THE EVIDENCE PRESENTED BY OBSERVATIONS UPON THE MORTALITY IN DIFFERENT OCCUPATIONS.

The best information upon this point is that which has been presented by Dr. W. Ogle, chief medical officer in charge of the English Registration Returns.

In a paper upon the mortality in different occupations presented at the International Congress of Hygiene in 1891, Dr. Ogle presented the following statement and figures concerning them so far as consumption is concerned:

"The difference between an outdoor life in fresh country air and an indoor life in a town is readily shown by comparing the mortality of farmers, gardeners and fishermen with that of shopkeepers; or, going a step further in the scale of vitiated air, with that of tailors, printers, book-binders and hatters, all of whom habitually work in overheated and under-ventilated rooms."

In this table the author confines the figures to phthisis and diseases of the organs of respiration, although the danger is not limited entirely to these organs. Fishermen appear at the top of the list with the lowest mortality from phthisis and diseases of the respiratory organs.

TABLE I.

COMPARATIVE MORTALITY FROM PHTHISIS AND LUNG DISEASES OF MEN (FORTY-FIVE TO SIXTY-FIVE YEARS OF AGE) WORKING IN PURE AND IN VITIATED AIR.

Air.	Occupation.	Phthisis.	Diseases of respiratory organs.	Phthisis and diseases of respiratory organs.
Pure air	Fishermen	55	45	100
	Farmers	52	50	102
	Gardeners [ers	61	56	117
	Agricultural labor-	62	79	141
Confined air	Grocers	84	59	143
	Drapers	152	65	217
Highly vitiated air.	Tailors	144	94	238
	Printers.	233	84	317

In the foregoing table, Dr. Ogle has presented a few occupations as illustrations of his proposition, to show the difference between the mortality of persons of different occupations working in pure and in vitiated air, or what amounts to the same, outdoor air and indoor air.

In order to present the results of observation as clearly as possible, the usual figures representing the death-rates of the living population at certain ages and of certain occupations are reduced to a standard of 100 for that occupation which presents the lowest mortality from phthisis and diseases of the respiratory organs, and that is the occupation of the fisherman — a typical out-of-door mode of life. Next in order come farmers, gardeners and agricultural laborers; and then a group of indoor occupations in which the indoor space is not seriously limited; and, finally, a group of occupations in which persons work in small and poorly ventilated spaces. That the careless distribution of sputum upon the floors of workshops has had much influence upon the phthisis mortality of such workmen is shown by careful observation.[3]

Added to the harmful effect of overcrowding in small apartments and workshops, and of inadequate ventilation, is the presence of the dust arising from the methods of conducting certain occupations, and especially of such forms of dust as are sharp and irritating. That such occupations are especially attended by high phthisis mortality is abundantly shown by further tables presented by Dr. Ogle in the paper already alluded to, as well as by other observers.[4]

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[3] See statement by Dr. Marfan in Rev. d'Hygiene, 1890, vol. xii, p. 66.

[4] See also the recent monograph of Dr. Sommerfield, entitled Die Schwindsucht der Arbeiter, Berlin, 1895.

II. THE PROOFS AFFORDED BY THE RECORDS OF MORTALITY BY SEX AND AGE-PERIODS.

Accurate records of occupation mortality extending over long periods of time are not to be had in this country; but there are some quite good statistics of age and sex for different diseases, and there are certain peculiarities of these figures to which I desire to call your attention. The figures which I have selected for examination are those of my own State (Massachusetts) for the nine years, 1887–95. They comprise over 50,000 deaths registered as from pulmonary phthisis in this period, and may be considered as fairly accurate.

TABLE II.

Deaths and Death-rates from Phthisis at Different Ages, Massachusetts, Nine Years, 1887-95.

(Compiled from a total of 50,583 deaths from phthisis in Massachusetts.)

Age Periods.	Deaths from Phthisis.		Death-rates per 10,000 living.		Deaths of females to each 100 males in equal numbers living.
	Males.	Females.	Males.	Females.	
0–2	868	806	26.8*	25.2*	93
2–3	129	127	6.1	6.1	100
3–5	118	150	3.0	3.9	130
5–10	197	266	2.2	3.0	136
10–15	248	737	2.8	8.6	301
15–20	1,804	2,969	19.3	29.8	154
20–30	7,067	8,701	35.4	39.7	112
30–40	5,466	5,611	36.1	35.9	99
40–50	3,363	3,143	30.4	26.8	88
50–60	2,333	1,757	30.9	20.7	67
60–70	1,512	1,295	31.4	23.7	76
Over 70	915	1,001	31.3	26.9	86
	24,020	26,563	24.5	25.6	105

* Corrected figures for ages 0–2 years: Males, 21.0; females, 19.5.

The correction for the first two years of life is made necessary in consequence of the defective character of the census enumeration of children at that age of life.

An examination of this table reveals some remarkable facts upon careful analysis. It will be noticed that the age-periods are presented in a peculiar manner. First, the first years of life (0–2) are presented as one group; secondly, the third year is presented by itself; then come the fourth and fifth years in another two-year group; then the usual five-year groups from five years up to twenty; and then the remainder of life in ten-year groups.

The object in presenting the figures in this manner is to show that at the third year of life the death-rate of boys and girls from phthisis is equal.

In the first ten years of life, the phthisis death-rate of boys is slightly higher than that of girls of the same age, the ratio being 93 deaths of girls to 100 of boys.

In the third year of life, the phthisis death-rate has become equal in the two sexes (100 females to 100 males in equal numbers living). In the next two years, the female death-rate from phthisis has passed that of males, and then is equivalent to 130 deaths of females to 100 of males in equal numbers living. At the period of childhood (5–10 years) the increase of the female over the male death-rate has continued, and equals 136 females to 100 males. In the next period (10–15) it has reached the very great difference of 301 females to 100 males. In the period 15–20 years, the female death-rate bears the relation to the male of 154 to 100; and in the next period (20–30) it is as 112 to 100. This rapid decline in the female death-rate continues from a death-rate of 39.7 per 10,000 living females, in the period 20–30 years, down to that of 20.7 per 10,000 in the period 50–60 years, at which period it bears the relation to the male death-rate of 67 females to 100 males.

The male death-rate, which has reached a climax of 36.1 per 10,000 in the age-period 30–40 years, declined to 30.4 in the next period, and remained nearly constant from that time throughout the remainder of life.

The points in this table to which I desire to call attention are the following:

In the first two years of life, the death-rate of boys from phthisis is slightly greater than that of girls; but in the third year of life the death-rate is equal. In the fourth year of life the difference in the phthisis death-rate of the sexes is reversed, and that of girls is the greater; and for the two years, 3–5, this excess among girls amounts to 30 per cent. In the five-year period (5–10 years) this excess has increased slightly to 36 per cent.; but in the next period (10–15 years) it suddenly makes a bound and rises to triple the male death-rate. So far as can be learned, the greatest relative difference in the phthisis death-rate of the sexes occurs between the twelfth and thirteenth years of life. The phthisis death-rate of each sex then increases rapidly to its maximum in males in the age-period (30–40), and in females in the period (20–30). The highest death-rate of males from this cause probably occurs at a little over thirty years, and that of females at a little less than thirty years.

A careful examination of English figures for phthisis reveals a general coincidence in almost every particular except that the difference in the death-rates of the sexes at early ages is not so great as in the Massachusetts figures, the female rate at ages 10–15 amounting to double that of the male instead of treble. Again, the period at which the female death-rate begins to exceed that of the male is not until the fifth year of life instead of the fourth, as in Massachusetts. What is the true explanation of these differences in the death-rates of the sexes from phthisis? I shall only offer a hypothetical explanation.

The lessened death-rate of females, as compared with males in the later age-periods (forty years and onward), may be explained (provided the doctrine of immunity or that of insusceptibility applies to phthisis) upon the supposition that the majority of susceptible females have been removed from the population by death in the early age-periods, leaving an excess of susceptible males. But this does not explain the excess of the female death-rate from phthisis in the early ages, after the second year of life. I venture, therefore, to offer the following:

Upon the theory that the infection of tuberculosis is mainly an indoor infection. At birth and from that time, throughout the first three years of life, the death-rate of the sexes from phthisis is very nearly equal. During these three years the relative amount of time spent within doors is about the same for both sexes, but in the fourth year of life, as an average, boys begin to spend more time out of doors than girls, and the relative amount of difference in time so spent continues to increase from that time onward. It cannot be urged that the period of puberty in girls has an effect in causing this difference, since the difference begins at a much earlier time of life and reaches its climax before that age in females. The delay in the onset of this increase in females in England and the lessened difference at the age 10–15 years may, perhaps, be accounted for by climatic differences, that is, a generally milder climate in the British islands.

A singular instance of the hold which popular fallacy in regard to infection gains upon the laity is presented in the results of a legislative inquiry which occurred in Massachusetts last winter, but which, fortunately, proved a failure.[5]

The underlying principle which could have any possible weight in this investigation was the possible danger of the spread of tuberculosis infection from a hospital inhabited by consumptives to the surrounding neighborhood, or from its inmates while walking about the grounds or the neighboring streets; or, in other words, the danger of outdoor infection. Since such danger was neither proven, nor was even a strong probability thereof shown to exist, the proposed measure utterly failed.

Once let the idea of infection gain a foothold in the popular mind, and the belief spreads rapidly and often to such an extent as to cause harm instead of good. The method and degree of infection are all of no account so long as these words "infectious or contagious" have become impressed upon the mind of the community.

Modern medicine has received no greater impetus than that which has been derived from the rapid advances afforded by bacteriological research. So great, and so valuable have these results proved, that the death-rate from some of the worst forms of infection has begun to lessen with greater rapidity than before, under the influence of methods which had their origin in the laboratory of the scientist.

Notwithstanding this fact, however, it cannot be denied that the most reliable conclusions in regard to the true characteristics of infectious diseases must be derived not only from the laboratory but from the observations of the physician in his daily rounds of practice, together with a study of mankind in his relation to all outward circumstances which influence his condition in life, such as those of sex, age and occupation. In other words, the results of laboratory investigation, clinical observation, and the broad and general study of the natural history of disease taken together constitute a better means of deciding doubtful questions in regard to infection than either of these methods taken separately.

In conclusion, then, it must be admitted, that tuberculosis is an infectious disease. Its character is too well defined, both by observation and by experiment, to admit a reasonable doubt. The active principle of infection, the bacillus of tuberculosis is recognizable; it is capable of isolation from the body, of cultivation, and of inoculation into the lower animals. But, practically, the exact mode of infection, when applied to the daily intercourse of human beings, is extremely limited, and no evidence has ever been presented which tends to show that such infection ever occurs by exposure in the open air, either by the breath of consumptives or by the distribution of sputum upon the surface of the soil. On the other hand, abundant evidence shows that such infection is of very common occurrence from indoor exposure to the distribution of sputum deposited upon floors and dried under favorable circumstances.

By this I do not mean to infer that the outdoor free distribution of the sputum of consumptives should be encouraged or allowed, but should be prevented, on the general principle that all infectious material constitutes a greater or less danger, and not because any serious danger from such outdoor distribution has actually been shown to exist when compared with indoor distribution of sputum.

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SOME CONSIDERATIONS OF TUBERCULOSIS.[1]

BY J. ARTHUR GAGE, A.M., M.D., LOWELL, MASS.

FREQUENCY.

TWO-SEVENTHS, or nearly 30 per cent., of civilized people are said to have tuberculosis. If this is true, then Lowell has 26,000 people afflicted with tuberculosis. The figures seem appalling. What is the evidence? In 1,000 autopsies by Biggs of New York, 275 or 27.5 per cent. had lesions of tuberculosis. If we consult our city mortality tables we find that for the last thirty years between 15 per cent. and 20 per cent. of all deaths are from the tuberculoses, and if we consider the cases of tuberculosis not only of the lungs, but of bones, skin, glands and other organs that we see maintaining a degree of health consistent with life, these figures do not seem extravagant. But if we look at the mortality charts we notice a curious fact. In 1884, the curve representing the per cent. of deaths from tuberculosis to the total deaths went for the first time below 15 per cent. and has steadily declined since, until it has reached 10 per cent. In the same year the curve representing a corresponding per cent. of deaths of children under five years began steadily to rise from 36 per cent. and has gradually reached a level of 43 per cent. In general this curve is influenced by the deaths from zymotic and diarrheal diseases (the causes of death in most children), but if we take the year 1892, when there were few deaths from all zymotic diseases and when the deaths from diarrheal diseases were the average for ten years, that is when we should expect a low death-rate among children, we find that 42 per cent., nearly the highest for ten years, of deaths were under five years. The deaths from diarrheal diseases was 12 per cent., and from zymotics 21 per cent., making a total of 33 per cent. So that we have 9 per cent. of the total deaths among children under five years to account for. What are the causes given for these deaths?

If we look at the last bulletin, we find that of 83 deaths under five years, 19 are classified as infantile debility and inanition. (Of course the responsibility for this does not rest upon the Board of Health.) In other words, a great many deaths among children really have no pathological cause of death given. Yet we know that during the first two years of life there is a constant increase in tuberculous disease, which then falls only to rise again at puberty.

To recapitulate: When we consider that the death-rate under five years of age is higher than the average for thirty years, and out of proportion to the death-rate from zymotic and diarrheal diseases; that the death-rate from tuberculosis is lower than ever before; and that there are many unclassified deaths at an age when we know tuberculosis to be rife; I believe the inference is warranted that many of these are due to tuberculosis, and that the death-rate from that disease should be higher than it is.

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[5] The circumstances attending this investigation, having been already presented in the Journal, it is unnecessary to repeat them here.

[1] Read before North Middlesex District Medical Society, October 27, 1897.

Since I began private practice I have been impressed with the great frequency with which signs of solidification have appeared in some portion of the lungs in young people under twenty years of age under varying conditions, and these conditions have often seemed inconsistent with the supposition that, at the particular time when the signs were noticed, the patient was infected with tubercle bacilli. A few cases will illustrate:

(1) Boy, fourteen, doubtful family history, convalescing from typhoid, has suddenly appear all the signs of solidification at right apex, with fine and coarse moist râles. With forced feeding the râles disappear, and the boy resumes good health.

(2) Sister of above, eighteen years old, after overwork catches cold, and has same signs at right apex; recovers health, but never gets back to former weight.

(3) Girl, thirteen years old, has a cold, with cough and localized signs at right apex. Symptoms subside under treatment, and girl recovers health and weight.

It is interesting to note that the girl of eighteen does not regain weight, while the girl of thirteen does, and also that no one of the three lived with people in active consumption.

(4) A girl of seventeen "feels tired," and does not want to go to school or work; one brother died at twenty-one of phthisis. The father and mother are healthy, but have a tubercular family history. No signs of active disease exist in the lungs, but there are prolonged expiratory murmur and increased voice at right apex. Later, active symptoms develop. One would naturally think of the connection with the brother's case; but the development was two years later, and it is significant that another brother seven years old had "lung fever" years before either was sick. I frequently see the signs of local disease of lungs in young children under two years, but will return to this subject later.

It is not necessary to multiply cases, but I want to call attention to the frequency of localized inflammations of the lung in children, particularly about puberty. These patients, so far as we can see, are not associated with active consumption in their daily life, nor can they be said to be especially exposed at the time their symptoms appear. It is evident that many of these cases will be seen with lung trouble later in life, and the attack then will be the lighting up of the old lesion; such is likely to happen about the age of twenty-one or twenty-two; and the query comes, If these cases carried the bacillus in their bodies from thirteen years to twenty-one, when did they get it? May they not have had it in the earliest period of life, under two years, when we know so many children have tuberculosis? If they did acquire the disease in a latent form at so early a stage, how did they get it, and what are the sources of contagion?

METHODS OF INFECTION.

Over two years ago, in a discussion before the Massachusetts Association of Boards of Health in Boston, I reported some cases of inflammation of the lung, probably tubercular, occurring in children, in the early months of life when the child seemed to be free from danger of infection, that suggested to my mind the possibility of the inheritance of the bacillus. This suggestion was vigorously opposed, and this opposition has served as a stimulus to seek further evidence. Let us look at a few cases:

Case I. A boy is born to parents neither of whom have had active tuberculosis. One family (mother's) is tubercular, and the mother herself had suspicious signs at right apex of some solidification, but she does not cough or expectorate. The baby is fed on sterile milk from birth. The house is new; no consumptive lives in house. At four months of age he has an inflammation of posterior lobe of one lung that lasts several weeks and leaves him very weak; no sputum examination could be made. For two years he is pale and under weight; has "wheezy" breathing and some cough, and moist râles can be heard at times over the old spot of inflammation. Slowly he builds up on cod-liver oil and fresh air.

Case II. A boy is born to parents both of whom are in vigorous health, full weight, and free from any history of tuberculous disease. The mother's lungs are without even suspicious signs. Father's family is tubercular. The baby is nursed by mother. No consumptives have lived in house, so far as known, in recent years. At six months of age the boy begins to lose flesh and strength, and become pale: there are no other symptoms. His digestion is good, and he is given juice of beef and tonics, with no improvement. At nine months of age a consultation is held; and after thorough physical examination it is agreed that there are signs of solidification of one base. Under forced feeding with Pasteurized milk, beef-juice and cod-liver oil (nursing is stopped) he gains. The stomach digests all he gets, but he still is very pale.

These taken as two sample cases, with many other cases of tuberculosis of lungs, meninges and bones in the first year of life, bring us to the question, Can it be that these cases inherit the bacillus? What is the clinical evidence? If we glance at the literature of the subject, we shall find that since the time of Hippocrates physicians have believed that people inherited a "consumptive tendency"; and I doubt not but that all of you to-day question a patient with pulmonary symptoms about his family history, not merely of those he lives with, but as to his grandparents, uncles and aunts, and collateral branches. Now, under this name "tendency" we have merely covered up our ignorance. For whether we interpreted it to mean lowered vitality or decreased nutrition or a mysterious property called "susceptibility," we were merely trying to explain the fact that "consumption seems to run in families." Do not understand me as saying that a child of a consumptive may not be less resistant to acquired tubercle-bacilli than children of healthy parents; but it may be tairly questioned why they should be more susceptible than children of parents with other debilitating diseases. How, then, shall we explain this "susceptibility"? Can we say with Cohnheim, that "the phthisical habit is not an indication of a tendency to, but actually of the existence of tuberculosis"?

The question divides itself into three:

(1) Can the bacillus be transmitted to the ovum by the mother or the sperm of father?

(2) To fetus by mother?

(3) How often does this occur?

In answer to the first two questions, we know that micro-organisms can be transmitted from mother to child in utero. How this is done through the placenta is foreign to our present discussion. In the case of syphilis (presumably a germ disease) we know that it can be transmitted through the ovum and sperm direct, thus coming from both parents. But it has been shown (quoted from Dr. W. H. Welch, of Johns Hopkins) that the bacilli of chicken cholera, anthrax and pyogenic micrococci pass through the placentæ of animals. In man we know that the fetus in utero has been infected with small-pox, measles, scarlet fever, relapsing fever, typhoid, anthrax and other diseases.

In regard to tuberculosis, Welch has the following to say:[2] "Developed tuberculosis in the new-born infant is extremely rare, although it has been observed, but this rarity does not prove that tubercle bacilli may not often be transmitted from mother to fetus. It takes time and susceptibility for tubercle bacilli to produce recognizable lesions. Tubercle bacilli without developed tuberculosis have been repeatedly found in the fetus of tuberculous mothers. Birch-Hirschfield detected in a seven-months' fetus, removed by Cæsarean section from a mother with acute miliary tuberculosis, tubercle bacilli, both by microscopical examination and by inoculation of guinea-pigs. There were no tuberculous lesions in the fetus. The failure to find tubercle bacilli in a large number of similar cases can hardly be regarded as proof of their absence, when one considers the difficulty of demonstrating tubercle bacilli in small numbers irregularly distributed through a large mass, without any lesion to indicate where they are most likely to be found. Gartner finds that the transmission of tubercle bacilli from mother to fetus is common in the experimental tuberculosis of mice, rabbits and canary birds.

"There is reason to believe that the embryo offers great resistance to the growth of tubercle bacilli. Maffucci has found that tubercle bacilli inoculated into hen's eggs before incubation remained quiescent during the period of embryonic development, but caused the death of most of the chicks from tuberculosis in three weeks to four and a half months after birth. We have evidence that in human beings living and virulent tubercle bacilli may remain latent in the body a long time. As already mentioned, the chances of penetration of bacilli into the fetus appear to be more favorable during the later period of pregnancy than earlier. The frequency of tuberculosis increases very rapidly with each succeeding week after birth, until during the second half of the first year and during the second year of life fatal tuberculosis is very common, and then becomes less frequent until after puberty. Infantile tuberculosis is far more commonly situated in internal organs, such as the lymphatic glands, meninges, bones and joints, without tuberculous lesion on any exposed surface of the body, than is tuberculosis of adults."

Thus it is pretty conclusively shown that the mother can transmit the bacillus to offspring. What about the father? Osler says, "There is no evidence to show that a tuberculous father can transmit the disease." Let us consider this question further. In syphilis we know that the semen can transmit a constitutional disease to the offspring. Again, we know that the human semen contains under certain conditions the tubercle bacilli. Now, let us turn for a moment to animals for additional light.

In a most valuable and interesting paper by Dr. G. H. Bailey, State Veterinarian of Maine (which I wish I had time to quote fully) the following facts are brought out: 14 bull calves a few days old were sold from an infected herd to go to different parts of the State. Twelve of the 14 were later found diseased, and their calves out of sound cows were also found diseased. He believes they were born with the disease, and transmitted it directly to their offspring, as there had never previously been any tuberculosis on the farms to which they carried the disease.

A second case was that of a breeder who bought an infected bull and served 10 cows, all the calves of these 10 cows had to be killed for tuberculosis.

In a third case where an infected bull served seven cows, all their calves were tuberculous, and one tuberculous calf came from a mother free from the disease. Hence, the disease *could* be traced directly from the bull.

He quotes as follows:

Dr. Theobald Smith of Massachusetts State Board of Health says: "(1) The tubercle bacillus may pass in the semen of the male and infect the ovum directly. (2) The ovum may be infected by disease of surrounding structures (peritoneum, ovaries, Fallopian tubes) in the female. (3) The fetus may be infected by the passage of tubercle bacilli from the maternal placenta into the fetal circulation. The infection through the placenta is probably the most frequent cause of congenital tuberculosis. It may take place when, in consequence of generalized tuberculosis of the mother, tubercle bacilli are in the circulation and become lodged in the placenta, whence through some ruptured vessel, they may pass into the blood of the fetus."

From *Oest Monatschrift* he quotes as follows: "The presence of microbes in the spermatic fluid, however, is of far greater importance, as it throws a new light upon the transfer of the microbe from father to child, not only in tuberculosis but in syphilis."

From Dr. Michenor, Chief Inspector of the Bureau of Animal Industry, Washington: "This infected bull is an unsafe sire, and is almost certain to transmit the disease."

The Maine State Board of Health says: "Tuberculosis in cattle is a hereditary disease."

The Brussels Congress, 1888, says: "The disease (tuberculosis) is transmitted by heredity."

The New York State Commission on Tuberculosis in cattle says: "Tuberculosis is under certain conditions congenital."

Many other quotations might be given; but enough has been heard to show that our friends the veterinarians believe that the disease is *frequently* transmitted from father to offspring.

Believing, as I do, in the universality of law, I think that if a bull can transmit tuberculosis to his offspring, a man can do the same thing.

We now come to the question, How often does this happen in man? And I wish to say here, that I believe the answer to this question must rest upon most careful work and observation in the future, but that its importance cannot be overestimated. We can only at present consider some of the evidence that favors it. On the part of the child the fact that so many children have tuberculosis during the first two years of life would point to inheritance, where other sources of contagion have been eliminated; but if it can be shown that often tuberculosis in children is latent and is really the focus of later outbreaks, then I should consider this to point rather towards inheritance, because I should expect acquired tuberculosis to develop a lesion rather than to remain latent.

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[2] Dennis's Surgery, vol. i, p. 307.

This tendency of acquired tuberculosis to develop a lesion was well illustrated in case of a young man of good family history and superb physique who, after engagement to a woman with apex disease, showed during an attack of persistent dry cough a spot about the size of a dollar in supra spinous fossa that gave all the classical signs of tuberculosis.

In a paper by Dr. Donaldson, President of the American Climatological Association, read in 1887, he says: "The greatest objection to the theory of inherited bacilli is that it is necessary to assume a latency of the disease during early life."

But we all know that the disease has the property of quiescence during all periods of life and for varying lengths of time, and I cannot see that latency means anything more than the property of not producing evident lesions, or giving rise to active symptoms. When we see a child with tuberculosis at one year maintaining good health for years, or a boy at fourteen years with undoubted tuberculosis growing up without active disease, I call that latency. The experiment of injecting tubercle bacilli into chicken's eggs and not getting the disease (manifested by tangible lesions) until three to fourteen weeks of age is strong proof of latency; while in cattle, the evidence is all in favor of the latency of tuberculosis.

Dr. F. W. White's experiments with tuberculin bear upon this point. About 20 per cent. of cases injected with tuberculin, where no physical evidence of tuberculosis could be found, reacted. This was noted as a failure of tuberculin. When we consider the frequency of tuberculosis and the fact that no such discrepancy is found in cattle, it seems to me fully as sound to assume that that per cent. of patients had latent tuberculosis that presented no symptoms discoverable on physical examination.

Furthermore, the lesions of tuberculosis found at autopsy, that were quiescent, all point the same way. Consequently, if the difficulty of explaining latency in tuberculosis is the great objection to the theory of frequent inheritance of tuberculosis, then that objection seems to me to be a slight one.

If we look at the question from the standpoint of the parents, it seems probable that a mother with tuberculosis of the ovary, or a father with bacilli in sperm, would be in a favorable condition to transmit the disease; or a woman with multiple lesions of tuberculosis over the body, and the bacilli carried in the blood current, if she should become pregnant, would be very likely to transmit the bacillis, particularly if there were any break in the placental membrane.

In conclusion, it seems to me safe to say that the transmission of bacilli from parent to offspring is (upon the evidence) much more frequent than has been believed. Can we say that predisposition means bacilli in the body? I cannot better reply than by quoting Ruhle before German Congress, 1887:

"If the inheritance of human consumption be true, and we believe it; if the bacilli represent the infectious material of tuberculosis, and we entertain no doubt of this, then both facts must harmonize with each other. . . . Whether it is the tubercle parasite itself which is transmitted, or a certain constitution of nutritive substratum on which the universally present germ may lodge, we can only know by further investigation."

INFECTION BY MILK.

Another mode of infection that has been underestimated is through milk, both bovine and human. The following cases furnish evidence on that point.

Case I. This case has been reported in print, but I will repeat briefly. Baby under one year. Family history free from tuberculosis. Parents and older sister in perfect health. House new. Baby nursed to nine months, and then was fed on one cow's milk. Child died of tubercular meningitis. Cow was examined and appeared healthy. Cow's milk injected into guinea-pigs: killed in six to eight weeks with typical tuberculosis. No disease of udder could be found.

Case II. Girl, eighteen years old, good family history; came for general tuberculosis of glands of neck. She had had the disease about a year. She had drank milk regularly. During the year one of the family cows was killed for tuberculosis.

Case III. A man of thirty-two; good family history; always healthy; wife and children healthy; living in a new house. In September had an attack of renal colic. After recovery he went to work on a farm for three weeks, and during that time drank a large quantity of milk daily, then returned to his work as motorman. At this time he noticed a small nodule, like a pea, under the right jaw, which gradually grew larger; and in the spring I removed the right submaxillary gland and some lymphatics that were tuberculous. In the intervening December a cow was killed for tuberculosis on the farm where he drank the milk.

Case IV. A young man of twenty-one, family history good (sister looks tuberculous), was seen with upper half of left lung showing signs of old tuberculous disease and the lower half showing signs of recent invasion. Temperature 103°; pulse 120, with night-sweats; hemorrhage and loss of flesh; abundant tubercle bacilli in sputum. I ordered seven hours a day of sunlight and rest in easy chair on piazza, Pasteurized milk, and little morphia-sulphate for cough. In one week the temperature became normal in the morning and 100° at night, and he gained one and a half pounds; cough improved, and night-sweats nearly disappeared. He had had cough for a long time, but became worse this summer in spite of a vacation, when he gained in weight. His sister had a young baby during the summer, and the family milk-supply was changed for one cow's milk, which made the baby "so sick that they had to stop feeding it on the milk." He usually drank a glass before going to bed. Soon after the baby's sickness the cow was killed for tuberculosis.

I might give more such cases, and the literature of the subject is full of them. Probably 20 per cent. of the cows in Eastern Massachusetts are tuberculous, and about one-half of these have the bacilli in their milk, whether there is disease of the udders or not. Their milk furnishes an excellent nutritive medium to convey a virulent germ to the consumer, and the mixing of the milk but infects the whole quantity, while it dilutes the strength. This makes the danger from milk a real one of much greater magnitude than is generally recognized; and that the danger is not merely for infants and invalids, but that healthy individuals can be infected is shown by the cases quoted.

In the case of children and typhoid patients, I believe the danger is very great, because they drink large quantities of milk with no guarantee of its purity, and are in a condition of feeble resistance. There is, of course, but one remedy at present, and that is, to keep all milk at a temperature of 165° F. for thirty minutes before using.

I will not drink raw milk myself, and I have the family supply Pasteurized daily. The danger from butter is a real one.

The danger from nursing a tuberculous mother is so well recognized and the remedy is so obvious that I will not consider this source further.

INFECTION BY AIR.

The third source of infection, namely, from the air, is so well recognized that I shall only speak of a few of its limitations. It seems to me that this mode of infection bears more than its share of responsibility at present. In spite of Cornet's statistics from hospitals and cloisters and the conclusions of the New York bacteriologists I cannot feel that efforts to free the air from bacilli are going to make such an amazing difference in the amount of tuberculosis. I am well aware that the bacillus has been found in outside air, and the air and dust of rooms; that it has been traced into the nostrils of human beings. But the sunlight and oxygen and dilution must minimize the danger outside, and until there is conclusive evidence that the large percentage of cases is due to breathing the infected air indoors to the exclusion of other sources of infection, I cannot feel that the drastic measures recommended for prevention are needed. This is particularly true for the large number of cases of tuberculosis that are not in an active stage.

One more mode of infection is worthy of consideration, because it seems to me its importance has been underestimated. This is direct contagion. Our surgical experience has certainly taught us the important part that direct contact plays in infection by other germs, and I cannot see why tubercle bacilli should not follow the same rule.

The methods by which tubercle bacilli can be transferred from one person to another are many and obvious and need not be gone into here. But I would like to call attention to the fact that bacilli are often carried from one person to another in a moist state; that the interval of time between the germ leaving one person and reaching another is shorter by this method, and that presumably this is a virulent form of infection.

DIAGNOSIS.

I wish to speak of the symptoms and signs of latent or quiescent pulmonary tuberculosis, because I believe that it is often overlooked. A patient comes complaining of varying symptoms, which in the composite give a picture generally of a loss of physical vigor. Symptoms referable to the lungs are usually absent, nor can any history of any previous lung disease be elicited. Cough is seldom complained of (in fact) often denied; but on cross-examination you can often get the statement that they habitually "clear the throat" on rising in the morning. One of the most marked cases I ever saw, one I have watched for twelve years, a man who denied all symptoms of disease of the lungs, finally acknowledged that sometimes he cleared his throat in the morning. He managed to get just enough sputum to moisten the bottom of the bottle and it was found to be teaming with tubercle bacilli, which later completely disappeared. Hemoptysis is often absent in these cases. Low weight (that is, below average) is often present, though sometimes the patients are normal in this respect. Indigestion, a "tired feeling," and palpitation with some shortness of breath on exertion are occasional symptoms.

When we come to the physical signs we often find an incomplete picture.

On inspection we sometimes find slight depression above the clavicle, as compared with opposite side, — in one case of a strong man in good health and full weight, without pulmonary symptoms, a marble could rest in the depression above clavicle on the affected side, which in my experience is much oftener the right than the left. This is not constant and, of course, depends on the extent of the disease. There may also be slight limitation of motion on the affected side.

On palpation and percussion the tactile fremitus is not often obviously increased, but there is commonly a slight comparative dulness, often best noticed in the supra-spinous or supra-clavicular fossæ.

On auscultation, when the respiration is natural, the inspiratory sound is often diminished as well as the expiratory, which is, however, usually prolonged. When the respiration is increased in vigor, the inspiration may appear like the other side, though sometimes harsher, but the prolongation and higher pitch of the expiratory sound becomes much more differentiated from the other apex. A good place to hear this is often in the triangle between the scapula, the spine and the curve of the neck. The voice sounds are louder and nearer the ear, particularly with whispers. Râles are usually absent, unless the patient has recently "caught cold."

I consider, then, that the combination of slight dulness, prolonged expiratory murmur, and increased vocal resonance at either apex, particularly the right, renders a case suspicious, and if these signs be combined with low weight, constantly rapid pulse, or a family history of tuberculosis, I treat the case as tubercular, even though bacilli and elastic fibres are not found. The sputum has often been negative in these cases, as it often is even in known tubercular cases, though possibly better methods may be able in future to find the bacilli in these cases, or blood examination throw more light upon the diagnosis.

I know that these three cardinal signs are not generally accepted as sufficient to make a diagnosis upon, and are referred to a normal variation of the right over the left apex.

My reasons for a positive belief in their significance are as follows:

(1) The great frequency of pulmonary tuberculosis.

(2) I have demonstrated in surgical cases among men with good history and fine physique the absolute similarity in these signs of both apices.

(3) I have demonstrated by the x-ray the presence of solidification in these cases.

(4) I almost always find these signs in cases that have tuberculous lesions elsewhere in the body.

(5) I have watched some of these cases go on to full development of the disease in a well-recognized form.

(6) These signs sometimes appear on the left side

when they could not be due to a right-sided variation.

In children the diagnosis of pulmonary tuberculosis is, I believe, difficult, but I am always suspicious of any unilateral trouble that is not distinctly lobar pneumonia.

Dr. Morrill, in "Keating," says "that broncho pneumonia is often the starting-point (?) of tuberculosis in children."

The evident conclusion from what has been said is in favor of a greater frequency of tuberculosis than is commonly believed, and this coincides with the statistics at the beginning of this paper. It is worth while to note that the prognosis of many cases as regards the ability to maintain life is good, and those individuals who have a natural expectancy of long life will *cæteris paribus* combat the disease most successfully.

I wish, in closing, to say a few words about treatment. My experience with tuberculin and anti-tubercle serum has led me to the conclusion that neither has a specific action on the disease, and, although Von Ruck and Trudeau report better results from tuberculin than from other methods, I cannot help feeling that it is Asheville and Saranac rather than tuberculin that is responsible. If tuberculin or a serum is superior, it must demonstrate its superiority in every city and town. It seems to me fallacious to assume that a disease with the chronicity of tuberculosis is going to react like an acute self-limited disease such as diphtheria. I believe that our resources are still to be found in sunlight and fresh air, rest and hypernutrition. My rule is, recumbency in the open air every fair day (following definition of weather bureau) for seven hours. This may be maintained, even in winter months, if the body temperature be kept up. If under such conditions a patient can gain, the question of a change of climate is open, otherwise I believe any change will be futile.

The question of nutrition is too large to consider here, but it means oftentimes all the resources at the physician's command.

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THE HOMICIDE OF MRS. HATTIE E. McCLOUD.[1]

REPORTED BY F. J. CANEDY, M.D., SHELBURNE FALLS, MASS.

The ninth day of January, 1897, was like one of the rare and balmy days of October; and as the sun rose from behind the eastern range of hills at Shelburne Falls and flooded the valley of the Deerfield with light and warmth, the somewhat sharp frost of the previous night was soon dissipated; and so clear was the sky and soft the air that there was nothing to remind us that we were at midwinter, unless it was the leafless branches of the trees and the brown of the landscape.

Most of the twenty-five hundred inhabitants of the pleasant village of Shelburne Falls, so picturesquely located among the hills on both sides of the Deerfield river, had been for some hours at work in factory or store, or about their business of the streets, when a messenger came hurrying down from the hillside above the town for the medical examiner, with the information that Mrs. Hattie E. McCloud, an educated and refined lady, daughter of County Commisssioner Geo. D. Crittenden, was lying dead in the woods a half-mile out of the village.

It was at about half-past nine in the forenoon that I entered the wooded slope where the body lay surrounded by some twelve or fifteen men, among whom was the father of the dead woman. Her father, coming forward to meet me, stated that his daughter had left home on the previous afternoon at about four o'clock to do some errands in the village, and when she did not return in the early evening, as expected, it was supposed by her family that for some cause she had decided to stay over night with her married sister living in town, and that for this reason no great anxiety was felt for her absence and no search made. He also said that she was subject to fainting turns, and had probably slid down into this place in one of these spells and died from exposure to the cold, and that he didn't think there had been foul play in the case.

Mrs. McCloud was lying on her back seventy feet below the road on sloping ground with her feet down the hill, the point where she lay being connected by a path with the road leading from the village to her home. She was dressed in the usual winter clothes worn by a lady in her position, the outside garment being a loose cape with a fur collar fastened at the neck by a button. There was little disarrangement of her clothing; and her legs were extended, somewhat separated, and covered with her skirts to the knees. Observing the livid color of her face, with froth about the lips, I unbuttoned and turned down the collar of the cape, which revealed discoloration marks with skin abrasions over the larynx and upper portion of the trachea. On raising the skirts I found she had on open knit drawers, which were blood-stained about the genitals. Calling the attention of Mr. Crittenden to the marks upon her throat, I told him there was reason to suspect that her death had been by violence, and that the body and all circumstances connected with her death would have to be subjected to a careful investigation. After noting as carefully as possibie the position and condition of the body as found, and ground and objects about, I had it placed on a horse blanket brought from my carriage, and carried by the hands of six men an eighth of a mile up the hill to her home. Before leaving the locality I requested the people to leave the ground, and stationed a man near by in the road to see that no one went upon the spot. I then followed the body to the house, had it laid upon a lounge in a cold room, with none of the clothing disturbed, and returned to the village to telephone District-Attorney Hammond, at Northampton, for an order for an autopsy and an officer. At 11.30 State Detective Benson Munyan arrived, bringing the order for the autopsy, which, assisted by Dr. F. H. Zabriskie, of Greenfield, I proceeded to make at half-past one o'clock in the afternoon.

The description of the autopsy is best given in my report to District-Attorney Hammond, which I will read from this point:

"To the District Attorney of the Franklin District: You are hereby notified that on the ninth day of January, in the year one thousand eight hundred and ninety-seven, at nine o'clock A. M., I received notice that there had been found lying within the said district the dead body of a woman, who was supposed to have come to her death by violence; and upon receiving said notice, I forthwith took charge of said dead body, which I found lying on its back in the woods seventy feet from the road leading from the village of Shelburne Falls over Crittenden Hill, and about one-fourth of a mile from any dwelling.

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[1] Read before the Massachusetts Medico-Legal Society, October 6, 1897.

"I identified the body as that of Mrs. Hattie E. McCloud. External appearances were as follows: Hair, tangled and filled with broken leaves, was drawn out loose above her head. Hat off, lying on the ground in good order about five or six feet above her head, toward the road. Outside garment a cape, buttoned around the neck. Hands dressed in black yarn gloves, clenched tightly by her sides. Feet dressed in cloth shoes, with rubber overshoes, and legs covered by her skirts to the knees. The face and lips were livid, with froth about the mouth. Eyes closed, mouth closed. On raising her skirts considerable whole and broken leaf matter was found adhering to the open knit drawers. The hands, face, feet and other external parts of the body were frozen. Red marks on front of throat, with abrasions of the skin over the larynx, upper part of the windpipe and under side of the chin.

"I ordered the body removed to the house of her father, George D. Crittenden, where an autopsy was made by myself, assisted by Dr. F. H. Zabriskie, at about two o'clock A. M., January 9, 1897, and witnessed by Benson Munyan, Edwin Baker, Wilfred Ball and William Johnson (undertaker). Wilfred Ball acted as clerk, and took notes at my dictation. Inspection of the body showed a livid face, ecchymosis of the lips and eyelids, dried frothy matter about the lips, abrasions and red marks about the front of the neck over the larynx and windpipe, with prints of a thumb and three fingers clearly outlined. The hair was tangled and filled with dry forest leaves. Clothing not torn or disarranged. Her open knit drawers were stained with blood at the opening, and sticking to the drawers about the thighs and legs, also in the hair of the genitals, were found dry forest leaves, most of them more or less broken up. The lips of the vulva were swollen and gaping, and dark blood was oozing from an abrasion at the entrance of the vaginal canal.

"On dissection of the neck the superficial veins were found much distended with dark fluid blood. The muscular tissue about the larynx and upper portion of the windpipe was stained with blood from capillary bleeding; the proper relations of the cartilages of the left side of the larynx disturbed, and the second and third rings of the windpipe broken in front. The lungs were filled with dark venous blood. The cavities of the right side of the heart were also filled with dark fluid blood, but the left auricle and ventricle were empty, and the organ and its vessels apparently healthy. The uterus and ovaries were normal. She was not menstruating. The blood-vessels of the brain were distended with dark venous blood; otherwise the brain was healthy.

"Matter stained with blood was removed by a teaspoon from different parts of the vaginal tract, and taken to Greenfield by Dr. Zabriskie for microscopical examination. The examination was made by Dr. Zabriskie, assisted by Mr. Frank B. Wells, an expert microscopist, with the following result: Semen with spermatozoa was found in the specimen taken from the upper part of the vagina, also much vaginal cell matter, a part of a leaf, and several bits of hair — the latter being found in the specimens taken from the lower portion of the vagina.

"Mrs. McCloud was thirty-seven years of age; had been a widow six years; was well nourished and strong; of medium height, and weighed 145 pounds.

"My examination shows clearly that Mrs. McCloud died from strangulation by means of a hand upon her throat, and that sexual connection with her had taken place at or near the time of death."

This was dated at Shelburne Falls, January 12, 1897.

John O'Neil, Jr., a man twenty-eight years old, almost always out of work, and of gross habits of intemperance, very soon attracted notice and excited suspicion by his behavior — more especially by the free use of money in the saloons, which he was known not to have possessed before the evening of the homicide. He was arrested on the charge of murder January 12th, and the government at once set to work to make out their case against him on what proved to be wholly circumstantial evidence, which was only successful through the most able and carefully prepared work of the district attorney and those whom he called to his assistance.

Evidently the first hope of the defence was to show that the woman's death was not by violence, but that the cause and manner thereof were different from that claimed by the prosecution, or at least to throw doubts upon this claim; and to this purpose both the medical examiner and his assistant, Dr. Zabriskie, were subjected to a long and severe process of cross-examination. The government, by request of counsel for the defence, secured for them the services of Dr. Woodbridge, Professor of Anatomy and Physiology in Williams College, and a very able and successful practitioner of medicine at Williamstown; and it was under his advice and instructions that the cross-examinations were conducted at the trial.

Every step of our work was closely followed, and the order in which it was done, and every means possible put forth to weaken the force of the conclusions we had reached, both from gross appearances as well as from the microscopical examination.

On the third day the defence came into court, admitting the government's claim that a homicide and rape had been committed, and Professor Woodbridge went home. The trial lasted eight days; and though the prisoner was never located within an eighth of a mile of the spot where the body was found, and not any direct and positive evidence offered, yet the jury brought in a verdict of murder in the first degree within an hour after being charged by the judge.

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CONTRECOUP; ITS RELATION TO INJURIES OF THE HEAD.[1]

BY B. H. HARTWELL, M.D., AYER, MASS.

MUCH has been said by the older writers about injury to the skull by contrecoup, but it is probable that the skull is seldom fractured by force applied from the opposite side of the head, except those cases of fracture of the base from blows upon the vertex, and a large proportion of these are from radiation and not contrecoup. Aran found only four of the latter out of sixty, in which the base of the skull had been fractured, the others having radiated from the site of the blow. Charles Phelps states that 60 per cent. of severe injuries of the head involve fracture at the base, and a large majority of these are continuous with fissures extending from the vertex. The character and extent of these injuries is so influenced by the nature of the blow, its rapidity, the instrument used, the position of the body and head, the variation in the density and thickness of the bone in different individuals that no rule can be formulated as to the amount of injury done by a given blow. Injuries to the brain from contrecoup are much more frequent, and it is desired to direct attention to lesions that are opposite to or more or less remote from the force applied, and which may appear minor in degree when only said force or the character of the injury is considered.

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[1] Read before the Massachusetts Medico-Legal Society, October 6, 1897.

It is not infrequent that cases come under the notice of the Medical Examiner in which the local lesion is small in comparison to the brain injury and in the absence of cerebral symptoms have been treated by the medical attendant as simple contusion, or have received no treatment at all. These cases are of a good deal of interest to all medical observers, and in their medico-legal bearing are of great importance to us. They furnish additional proof that the answer to the question, "What cases shall be viewed by the Medical Examiner?" should be, "All cases where violence enters as a factor in the cause of death." By violence here is meant force from without, whether or not it appears plain at the time that it was at the hands of some person or persons. It is not difficult to understand how a blow upon a thickened portion of the skull in being disseminated over the head should fracture the bone on the opposite side, where the resistance is less, as in the case of our martyred President Lincoln, where the bullet entered the occipital bone and fractured the orbital of the opposite side, or in cases of fracture of the base of the skull from a blow upon the top of the head. But that a blow upon one part of the head should injure the brain at or near the opposite side without injury to the skull, either at the site of the blow or the brain lesion, is not so readily understood. Duret interprets these lesions by a certain elasticity of the cranial vault, and the pressure in the brain of the cerebro-spinal fluid, and has shown that the wave in this fluid created by a blow produces what is often its maximum effect on the opposite side of the head, tearing vessels of the pia and cortex.

We have abundant proof that the skull has a certain amount of elasticity. We know that the cerebrospinal fluid extends from the lymph sheaths of the small cerebral arterioles into the spaces between the convolutions, thence into the large sacs, the largest four being near the fissures of Sylvius, at the base of the brain, the inferior portion of the spinal cord and below the cerebellum, this latter connecting through the foramen of Magendie with the fourth ventricle, thence by the iter e tertio ad quartum ventriculum with the third and lateral ventricles. These anatomical points are necessary that we may understand the phenomena of concussion and explain disseminated cerebral contusion.

The following cases, briefly stated, will serve to illustrate:

C., colored, age thirty, large frame, well developed and muscular, was at work in a brick building when a brick fell and struck the top of his head to the left of the median line. He paid no attention to it at the time except to notice some dizziness and soreness at point of injury. There was contusion of the scalp, but no bleeding or separation of the parts. He continued to do some light work, but complained of headache and a feeling of easy fatigue. Four months afterwards he was found dead in bed, not having been seen for two days. He lived alone and had no medical attendant. There were no marks of violence upon the body. A slight scar was found at the point of the blow, but no injury of either external or internal tables of the skull. In the middle lobe of the brain, right side, about one-half inch from the base of the skull, was a spot of softening the size of an almond. It was of a soft creamy consistency and around it the brain substance was yellow in color. The rest of the brain was in a healthy condition and the other organs of the body showed no evidence of disease.

C. P., age sixty, was thrown violently upon the sidewalk by a large dog running in the opposite direction. He struck the outer portion of the left orbital ridge on the ice, cutting through the skin and causing a good deal of swelling and discoloration. He did not consult a physician. When seen four months afterwards, he gave a history of continuous pain from the time of the accident back of the right ear, though he had been attending to his usual duties. Temperature 101°, pulse 70, labored. He was put to bed and the unfavorable nature of the case explained. The rise of temperature continued for two weeks. Meanwhile almost complete paralysis of the left side developed, with delirium and stupor. Gradual improvement took place, and at the end of six months recovery was complete.

W. B., age fifty-three, was sitting in a chair in the rear car of a freight train, when the car was suddenly stopped by the setting of the brakes. He was tipped back, striking his head against a portion of the car. He got up, complained of pain in his head, became unconscious and died in eight hours. There was no bruise or mark upon the head, nor was the skull injured. Autopsy showed that the pons varolii had been torn, and in the softened places were small clots of black blood.

S., age twenty-eight, was struck on the left side of the head two inches from the median line. He lived forty hours. There was a stellate fracture extending to the base of the skull, but no depression of the bone. In the middle lobe of the brain, right side, under the pia mater, was a brown spot, size of a peanut, composed of broken-down brain tissue and blood from injured vessels. There was no fracture of the bone on right side, nor injury of the brain except at this spot.

Contrecoup is a factor in the causation of death in certain cases and is to be taken into consideration in all injuries of the head; and outside of medico-legal questions, if an operation is to be performed, the side to be opened is to be determined by cerebral localization rather than by external evidence of injury. The first two cases show that results may not come upon receipt of the blow, and, although they were purely accidental, might easily have been homicidal. The third case, from the absence of all external evidences of injury, the character of the blow, the manner of death, the short time that elapsed after the fall, the increasing coma and absence of reflexes might readily have been mistaken for apoplexy. In the fourth case, though the disorganization of a small portion of the brain had nothing to do with the death, it is still interesting from the fact that had the fracture not radiated to the base of the skull, death might not have resulted for some time, and the blow as a cause have been overlooked.

Clinical Department.

FOUR INSTANCES OF APPENDICITIS IN PATIENTS OF ADVANCED AGE.

BY J. C. IRISH, M.D., LOWELL, MASS.

SINCE the beginning of the present year, among my cases of appendicitis have occurred the four following, which are worthy of mention principally on account of the age of the patients:

CASE I. Miss A., of Billerica, aged sixty-five, patient of Dr. Tyler, Billerica. The attack had continued about three weeks before the operation, which was performed February 23d. There was a large pocket of pus, containing in all about two quarts. The appendix not found. The cavity was washed and drainage inserted, and the patient made a complete recovery with no return of the difficulty.

CASE II. Mr. B., of Westford, age seventy-six, I saw with Dr. Bass, of Lowell, May 12th. This patient had an old, inguinal hernia, which a truss had only imperfectly retained. Although the intestinal portion of the hernia seemed to return to the abdominal cavity without difficulty, there remained a mass that was irreducible. The patient gave all the symptoms of acute intestinal obstruction, so the conclusion was reached that the man was suffering from intestinal strangulation in connection with this hernia. Dr. Bass made an incision over the hernia; but no incarcerated intestine being encountered, the incision was extended upward through the abdominal walls, for several inches, and a gangrenous appendix was found and removed.

The abdominal cavity contained quite a large quantity of sero-pus; in short, there was gangrene of the appendix, with general peritoneal infection. The patient died a few hours after the operation.

CASE III. Mrs. K., of Lowell, aged seventy-five, under the care of Dr. Pinkham, of Lowell. The patient gave a history of preceding slight attacks of appendicitis, from which she recovered. The present attack commenced August 14th. August 18th I operated, and found a small pus-pocket around a perforated appendix, containing two fecal concretions; appendix was removed and cavity drained. The patient died two days after the operation, death apparently due simply to her generally enfeebled condition, as nothing, so far as the operation was concerned, went wrong.

CASE IV. August 26th, Mr. C., of Lowell, age seventy-six, under the care of Dr. Chadbourne, of Lowell. On August 24th he developed the ordinary symptoms of an attack of appendicitis. I saw the patient August 26th. At this time, temperature was 102°, pulse 120. There had been extreme pain over the site of the appendix, and marked tenderness at McBurney's point on pressure. A well-defined bunch could be traced in the region of the appendix. No operation was done; and the patient, at the end of about four weeks, had made a complete recovery. In this case, although the diagnosis was not verified by operation, still, from the above symptoms, I am absolutely certain that we were dealing with an ordinary, typical case of inflammation of the appendix without perforation.

These four cases, in an approximate total of forty seen by me within this year, may be a rather unique experience; still, they establish the fact, if not established already, that appendicitis may occur in very old people. To a certain extent, they tend to show that the disease is not so very infrequent among patients of advanced age.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WILLIAM D. HALL, M.D., BOSTON.

THE TREATMENT OF HIGH MYOPIA BY OPERATION.

DURING a discussion led by Mr. Lawford at the July, 1896, meeting of The British Medical Association concerning the treatment of high myopia by operation, allusion was made to the great frequency of the occurrence of myopia in Germany and Austria to explain why the operation has been done so much more frequently there than in other countries. The age, state of health, the character of the myopia and complications that exist should be considered as well as the degree of the error. The social condition and the nature of the employment must also be thought of. The operation does not benefit myopes having less than 11 D., while Schweigger's case of 33 D. is the highest thus far reported as having undergone operation. After removal of the lens there is noticed a diminution of the myopia in most cases of from 16 to 13 dioptres, and this greater the higher the myopia. A myope of 7 D. may be found to have become hypermetropic 6.6 D.; and in Schweigger's patient there remained only 13 D. after the removal. A fluid vitreous or a choroidal atrophy is not found to contraindicate, although it would be better not to interfere if a staphyloma should invade the macula. This procedure is especially applicable to children and young adults; but von Hippel and Sattler have been satisfied with their results in patients as old as sixty-four, and others have operated successfully on patients between the ages of thirty-five and fifty — a tolerance probably explained by an observation of Sattler that the lens of myopes does not sclerose as in emmetropia and hypermetropia. Although Vacher[1] has reported a series of good results by extraction, others are generally in accord in recommending a free breaking up of the lens substance with consecutive evacuation of the fragments or repeated discissions with evacuation, if indication for it arises, through a small corneal incision by means of a curette or the syringe of Bowman. An iridectomy should be avoided, even if possible, as a round and contractile pupil is even more to be desired in this instance than after the cataract operation. Usually the vision is doubled or quadrupled; and, even if it is not increased, the visual capacity is more satisfactory, and patients can now tolerate weak *plus* or *minus* glasses continuously for distance who formerly could only wear their strong concaves for short intervals. The advantage in near work through ability to converge and the acquirement of binocular vision is obvious as well as the lessening of the fatigue through absence of the accommodation. Although detachment of the retina has happened at varying intervals after the operation, there is no reason to suppose that the operation increases the liability of it to occur. Careful observers have certainly noticed a cessation of the elongation of the optic axis.

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[1] Rev. Générale d'Ophtal., June, 1896.

Mooren[2] believes that myopia is brought about by spasm of the accommodation, as a myope cannot bring about a sharp accommodative act without at the same time exerting to the utmost the internal recti for the accomplishment of the requisite convergence. This finally leads to exhaustion of the muscle and to new accommodative effort. The gradual disturbance of circulation through the spasm causes a gradual softening of the posterior part of the globe. The yielding of the sclera has its limit; and frequently an increase of tension is noticed at which time wearing full correction is harmful, on account of the strong accommodative effort necessary. In consequence of the formation in the vitreous of threads not affecting the transparency of the media, which, by their traction cause separation, he is in favor of the treatment of Deutschmann by injection. Out of 149 operations he records one failure. Under cocaine the capsule is split freely with a Græfe knife, which is then carried through two-thirds of the depth of the lens, and after the aqueous has escaped the cornea is triturated through the closed lid with the finger, after which iodoform and plaster. Swollen cortical can be removed through a small incision, and a secondary operation can take place when all signs of irritation have disappeared. He prefers to operate on both eyes at the same time, if possible.

Fukala[3] favors removal of the lens in myopia of 16 D. and over. It was Boerhaave who first, in 1746, recognized the cause of myopia to be due to a lengthening of the axis of the eyeball. Fukala considers the operation applicable to those cases of myopia in which there is a vision of at least 0.1 for distance and T. 1 and 2 for near. Although hemorrhage and detachment are to be feared, he prefers to do both eyes at one sitting. His method consists in a free discission through a dilated pupil under cocaine, and is guided subsequently by indications as they arise. He thinks the operation to be practically without danger, with the additional advantage that the myopia is checked and distant vision is improved.

Fukala[4] finds the improvement after the operation to be from two- to eight-fold. He considers acuteness of vision to be due to the size of the retinal images, to their light intensity and to the perception capacity of the retina. He finds that the retinal image of the myopic eye from which the lens has been removed is larger than in a myopic eye which has been corrected by a concave glass. The loss of light through refraction and reflection is less in the aphakial eye, especially when it becomes emmetropic, than in a corrected eye in which five refracting surfaces are to be considered and which is a still more complicated optical apparatus. As a result of the operation there is not only increased ability but also increased desire to use the eyes for distant objects, and thus a greater sensitiveness to retinal impressions is obtained.

Leber,[5] in regard to the improvement of vision after the myopia operation, believes it must be determined how far it concerns an improvement in the power of definition of the eye, due either to better functioning of the retina or greater sharpness of the retinal images, or how much of it is due to an increased size of the images. He is of the opinion that any considerable improvement of vision in myopia after removal of a lens uncomplicated with opacity, which does not depend upon the magnification of the retinal images through a correction, can scarcely be referred to the improvement in the optical conditions, but must be explained through an influence of the retina.

Fevrier,[6] regarding the origin of myopia, believes that from birth to adult age the eye tends to assume a condition of higher refraction, and that this tendency, except in malignant conditions, ceases at the time when the different parts of the face and cranium are retarded in their development. During this period the orbital cavity is continually modified in shape, and the relations between the globe and its aponeurotic and muscular attachments with the different constituent parts of this cavity undergo concomitant modifications which have as a result change in the positions of the meridians of the globe. Binocular vision claims such a position of the two meridians that retinal images shall occupy similar positions and also that they be superimposed, together with perfect coincidence of the two fossæ and of the two vertical meridians. Deviation of the meridians is corrected by the superior oblique muscles. Irrespective of the refraction, while converging and looking down, these muscles are strongly brought into play; and if this action exceeds certain limits, myopia results. Progressive myopia is the result of lesions of the deeper membranes, the origin being various, but in many cases due to pressure and traction exerted upon the globe, of which the first indication is posterior staphyloma.

TUBERCULOSIS.

Coppez[7] describes tubercular iritis in a previously healthy young dairy-maid, bacilli from the udder of a diseased cow having been introduced at the base of the distal phalanx of the ring finger. The course was characterized by inflammatory nodules limited to the skin and subcutaneous tissue, which broke down and finally healed by an adherent scar. There were sixty or seventy of them in all which were mostly curetted and cauterized. A careful examination did not reveal any signs of visceral tuberculosis. An iritis with ultimate destruction of the eye appeared early in the disease and enucleation was done about six months after the first appearance. Nothing abnormal was noticed in the posterior part of the globe, the choroid being scarcely hyperemic. The iris was the primary seat of the lesion and was invaded in its totality, while only a few and unimportant nodules were noticed in the ciliary processes. Pus from one of the abscesses produced in rabbits a smart iritis and panophthalmitis and after glandular involvement the animals died in the course of a few months cachectic.

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[2] Die medicinische und operative Behandlung kurzsichtiger Störungen, Wiesbaden, 1897.

[3] Heilung hochstgradiger Kurzsichtigkeit, Leipsic, 1896.

[4] Zur Verbesserung der Sehscharfe nach Myopie-operationen, Græfe Arch., xliii, 1.

[5] Bemerkungen über die Sehscharfe hochgradige myopischer Augen vor und nach operativer Beseitigung der Linse, Græfe Arch., xliii, 1.

[6] Recherches sur la pathogénie de la Myopie, Ann. d'Oc., September, 1896.

[7] Tuberculose cutanée et ocular sans manifestions viscerales, Rev. Gen., October, 1896.

In sections the typical bacilli were found occupying their usual relations in the giant cells. The author considers this unmistakable relation between cause and effect to be worthy of record on account of the great difference in opinion of those who have studied the origin of ocular tuberculosis; Lagrange,[8] for instance, believing that it is almost always primary, while De Wecker,[9] on the contrary, believes it to be usually secondary. The protection offered by the cornea and sclera, which are covered by an almost insurmountable barrier of epithelium, the chemical action of the tears and products of other organisms and the rarity of conjunctival tuberculosis with involvement of the iris, he points out as suggesting an introduction elsewhere, with transportation of the bacilli by the blood or lymph channels to the uveal tract.

Liebrecht[10] recognizes a miliary form as being a local manifestation of a general condition, and also a variety primary to and localized in the choroid, which can exist as a diffuse tuberculosis or as an isolated tubercle. Anatomically he finds the miliary tubercles to consist of groupings of round cells with occasional epithelioid cells, but without giant cells and necrotic areas located upon the pigment layer of the retina. The solitary tubercle appears as a choroidal tumor which partly projects into the vitreous and partly, if it has perforated the sclerotic, extends into the orbital tissue. The rest of the choroid may be normal and the line of demarkation sharply marked. It is formed of a mass of nodules composed of epithelioid cells and caseated areas in the vicinity of which are giant cells. In the diffuse form the choroid and ciliary body are transformed into a uniform mass of epithelioid cells with areas of caseation and numerous giant cells, while the retina remains unaffected. He considers the miliary form as secondary and due to bacilli being transported by the circulation, but admits the difficulty of deciding positively as to whether the local variety is primary or a secondary manifestation of a focus located elsewhere, but is rather in favor of considering it as secondary. Deutschmann thinks, as he has, by injecting pus of tubercles under the dura of rabbits, obtained a development of tubercles in the choroid and on the sheath of the nerve, that miliary tuberculosis of the choroid may also be a symptom of tubercular infection of the brain.

SUBACUTE CONJUNCTIVITIS.

Morax[11] proposes the above name for a frequently observed variety of catarrhal conjunctivitis, and one which he feels certain is caused by a particular micro-organism, insomuch as it can be differentiated from other varieties by the clinical appearances and by a bacteriological examination. It affects all ages, but especially the adult and old age; the onset is sudden and its course is marked with a slight muco-purulent discharge and sensation of smarting, but without actual pain. It is apt to be bilateral and does not go on to corneal complication. It is a benign affection and yields easily to weak solutions of zinc sulphate, but does not tend to spontaneous cure if left to itself. It may be mistaken for light and prolonged conditions of the acute contagious conjunctivitis due to the bacillus of Weeks, which, however, is more often observed among children. The micro-organism is a diplo-bacillus appearing as two short rods separated by a clear space. Quite long chains are sometimes seen. It differs from the pneumo-bacillus of Friedländer in having no capsule and being more distinctly rod-like. They are found free, or there are cell inclusions and large numbers. They are stained with methylene blue and dilute fuchsin and are decolorized by the method of Gram. It does not grow well upon gelatin, peptonized agar or bouillon, but better in the presence of human or animal serum. On serum-agar after twenty-four hours appear a few small transparent colonies, later becoming opaque. On coagulated serum gradually liquifying. Bouillon serum is made opaque, with a sediment. The temperature should be at least 30° and in the presence of air, and can survive six months at 35.° After a few days the secretion shows involution forms which stain badly. Spore formation has not been noticed. It has little resistance for physical agents and a temperature of 58° kills in a few minutes. Like the bacillus of Weeks, it is not pathogenic for animals, but a pure culture carried through the fifth generation after an incubation provokes the typical inflammation in man.

(To be continued.)

Reports of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

STATED Meeting December 7, 1897, B. SACHS, M.D., President.

TOXIC TREMOR AND HYSTERIA IN A MALE.

DR. J. ARTHUR BOOTH presented a man whom he had seen one week ago at the French Hospital. The patient, sixty-one years of age, had been engaged up to 1885 as a mirror polisher, using mercury, and since then in the same occupation, but using silver instead. His family history was negative as regards nervous disease. At the age of twenty-two he contracted syphilis, and was treated for this for some time. He then enjoyed good health up to thirteen years ago. At this time he fell on the street with both lower and upper extremities in a state of clonic spasm. He was taken to the Boston City Hospital, and subsequently was under the care of Professor Charcot for several months. He returned to this country in 1887, and resumed his work of mirror polishing, using silver. He has had three or four attacks of tremor. The present illness began November 17th, after having worked very hard for some time previously. The tremors presented by the patient, the speaker said, certainly resembled those observed in cases of mercurial poisoning. A very slight tap on the body would set up a pitiable degree of reflex tremor. There was no nystagmus, but there was slight ataxia. It was found that the tremor was greatly increased when attention was drawn to him, and for this reason it seemed not improbable that there was a hysterical element in the case. There was no bladder or rectal symptoms.

DR. W. M. LESZYNSKY said the case looked to him to be a functional one, added to the evident toxic tremor. The fact that he had had such attacks, and had recovered from them, would seem to confirm this view.

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[8] Arch. d'Opht., 1895.

[9] Clin. Opht., 1896.

[10] Tuberculose de la choroide, Soc. Biolog. de Hambourg, October, 1896.

[11] La conjonctivite subaigue, Ann. d'Oc., January, 1897.

Dr. F. Peterson and **Dr. B. Sachs** concurred in the opinion that marked hysteria was imposed upon a mercurial tremor.

NEURITIS FOLLOWING AN INFECTED VACCINATION.

Dr. W. B. Noyes presented a baby. It had been vaccinated last spring, and the wound had become infected. When the bandages had been removed, it had been found that the child could not move the arm. Examination showed that the deltoids, biceps and the muscles supplied by the ulnar nerve were involved. They did not react to faradism, but gave the reaction of degeneration. The case seemed to him at the time to be a neuritis resulting from an infected wound, but two other opinions had been offered, namely, that it was the result of tight bandaging, and that the child had had an attack of anterior poliomyelitis. The condition had developed within two weeks after the vaccination, and the motion of the arm had been largely recovered. There was no history of constitutional disturbance. His own opinion was that the case was one of ascending neutritis involving the circumflex, ulnar and musculo-cutaneous nerves.

Dr. Peterson thought that poliomyelitis could hardly be considered. The diagnosis offered by Dr. Noyes might be correct, or else the condition was due to pressure. He inclined rather to the latter view.

PULMONARY TUBERCULOSIS AND TABES COMBINED.

Dr. Fraenkel presented a man, thirty-nine years of age, unmarried, whose family history was negative. About ten years ago he contracted syphilis, but enjoyed fairly good health up to two years ago. Then he had repeated hemorrhages from the lungs, and developed rapidly the signs and symptoms of pulmonary tuberculosis. On admission to the Montefiore Home in May, 1896, there were pronounced signs of pulmonary tuberculosis, and of a large cavity at one apex, and death seemed near. The left pupil was but slightly responsive to light. The temperature never rose above 96.5° F. and the pulse above 80. He steadily improved up to May, 1897, at which time his sputum still contained tubercle bacilli, but his condition was in every way better. The signs of the cavity had disappeared. His pupils were unequal, and the left was myopic. The scapular, abdominal, gluteal and plantar reflexes were exaggerated on both sides. The left patellar knee-jerk was markedly diminished. There was no evidence of ataxia or inco-ordination. On November 18, 1897, physical examination showed the thoracic organs in about the same condition. The patient then complained for the first time of occasional shooting pains in the left lower extremity. The sexual appetite was markedly diminished. The left knee-jerk was greatly reduced. The three points of interest were: (1) The marked unilateral character of the symptoms; (2) the combination of tuberculosis and tabes — a very rare condition; and (3) the mildness of both diseases.

Dr. Leszynsky said that he had seen a number of cases with various forms of disease, both of the lungs and abdomen, with but slight change of pulse and temperature, even in neurotic individuals. He had in mind a patient who showed very markedly unilateral pupillary symptoms such as had been referred to.

Dr. Noyes said that the case appeared to be one of fibroid phthisis. Non-progressive tabes is due rather to a collection of connective tissue than to any actual degeneration of the posterior columns. These two conditions were occasionally associated, and the case presented was probably an example of this.

TIC CONVULSIF.

Dr. William Hirsch presented a young man having tic convulsif. He first saw him about a year ago, and the symptoms had not changed materially since then. The object in bringing the patient was to demonstrate a certain relation between his symptoms and the psychical condition present. On tapping the cheek, the patient made a number of grimaces. The fact that the symptoms had not undergone change was in marked contrast with what was observed in hysteria. This patient had had articular rheumatism, followed by endocarditis and the development of mitral insufficiency. Shortly afterward he had developed this neurosis.

WRY-NECK AND ASYMMETRY OF FACE.

Dr. Graeme M. Hammond presented for **Dr. Meirowitz** a boy of sixteen who had come under observation for the relief of what appeared to be a wry-neck. As far back as could be remembered, the neck had been deflected to the left, but he had never experienced any pain in the neck or elsewhere. There had been no twitching or jerking. Examination showed that the head deviated to the left; the left half of the face exhibited a perceptible slope from above downward to the left eyebrow, ala nasi, angle of mouth and angle of jaw were all higher than the corresponding points on the right side. The muscles of the neck were distinctly hypertrophied. The skull over the parietal region showed a perceptible flattening, not observed on the other side. The movements of the head were free in all directions. The hair curved to the left side. There was no disturbance of the cranial nerves, and no hemiatrophy, and the intelligence was normal. There was no family history of similar defects.

Dr. Fraenkel remarked that cases of congenital wry-neck had been explained as resulting from a lessened developmental resistance on one side.

Dr. Peterson remarked that it was unusual to find so good an example of the unequal development of the ear.

Dr. Onuf said that in most cases of congenital wry-neck there was asymmetry of the face. He was not sure that the pressure was alone responsible for the unequal development; it would hardly explain the asymmetrical development of the ear. The atrophy seemed to him possibly the result of twisting of the carotid artery on one side, with a consequent interference with the nutrition on that side.

ENORMOUS HYDROCEPHALUS.

Dr. F. Peterson presented the brain from such a case, one of the largest for many years at the Randall's Island institution. The patient was a woman of twenty who, in the early stages, had had a left hemiplegia and imbecility. As the disease progressed, she became diplegic and completely idiotic. The following are the measurements of the head: Circumference, 69.5 cm.; approximate volume, 17.14 c. c.; naso-occipital arc, 47 cm.; naso-bregmatic arc, 16.5 cm.; bergmatic-lambdoid arc, 19 cm.; binauricular arc, 50 cm.; antero-posterior diameter, 19.5 cm.; greatest transverse diameter, 18.5 cm.; length-breadth index, 94.8 per cent.; binauricular diameter, 12 cm.; auriculo-bregmatic radii, 20 cm.; facial length, 11.2 cm.; empirical

greatest height, 17.7 cm.; height Beta-x, 19.2 cm. At the autopsy the sutures were found fully united and the fontanelles perfectly closed. The skull bones averaged eight millimetres in thickness. The dura was not adherent at any part. There was a very little fluid in the dura. All of the fluid was in the ventricles of the brain, more on the right side than the left, for the brain of the right hemisphere had become in part membranous. Five pints of clear serum were removed from the ventricles. The third and fourth ventricles partook, to some extent, in the dilatation. It was unfortunate that through a mishap the brain was so injured that the patency of the foramen of Magendie could not be determined. Dr. Peterson said that, in his experience, it was difficult to examine this foramen, and apparently impossible to demonstrate the presence in any human being of the foramina of Hierzejewsky. It was very important in all cases of chronic hydrocephalus to examine, if possible, the foramen of Magendie, and not only that, but to determine the patency of the aqueduct of Sylvius and of the foramen of Monroe. He had, with Dr. Blake, at the Anatomical Laboratory of the College of Physicians and Surgeons, examined the brain of a ten-year-old hydrocephalic of Randall's Island, and in this instance, at least, had determined definitely the permeability of the foramina mentioned, and the aqueduct.

ABSCESS OF THE BRAIN.

Dr. Peterson presented a specimen showing an abscess of the brain that had been operated upon. The case had been seen on September 3, 1897, in the service of Dr. Brown, of the Mountainside Hospital, at Montclair, N. J. The patient was a male, forty-one years of age, who, in an attempt at suicide, had struck his head upon a rusty spike and had sustained a compound depressed fracture in the right occipital region, very near the middle line. He was trephined, and the depressed bone removed. The dura was found uninjured, and was left untouched. The wound became slightly infected; but aside from slight fever no symptoms of importance appeared until two days before he had seen the man, that is, for about two weeks after operation. He then gradually developed in twenty-four hours a left hemiplegia, with left hemianesthesia.

Examination showed complete paralysis of the left arm and leg, with considerable anesthesia over the paralyzed limbs; slight analgesia in places, and hyperalgesia in others. The plantar and cremasteric reflexes were normal. The knee-jerks were subtypical, slightly greater on the left side. The mind was clear. There was no aphasia, no involvement of the face or tongue. There was no evidence, in pupils or pulse, of intracranial pressure, and no symptom of cortical irritation. The temporal half of the field of vision of the left eye was lost. The right seemed normal. He heard a watch at only half the distance with the left ear as compared with the right. Taste was normal on both sides of the tongue. The fundus seemed slightly cloudy. A diagnosis was made of abscess deep in the brain, in the region of the posterior limb of the internal capsule. The surgeon was advised to trephine in the parietal region, considerably back of the motor area, and insert an exploring needle down into the supposed site of the abscess, should the patient grow worse. Two days later this was done. The abscess was found at the site suggested, and was drained. The temperature became normal, the anesthesia disappeared and the patient moved his left hand; but a few days later he suddenly became worse, and died. The brain was sent to Dr Peterson for examination. He found the dura very sclerotic over the site of the original injury close to the superior longitudinal sinus. The convolutions of the right hemisphere were considerably flattened. There was no meningitis. Deep in the anterior of the right hemisphere was an abscess, about the size of a hen's egg.

HEMIATROPHY OF THE BRAIN.

Dr. Peterson then presented a specimen showing apparent hemiatrophy of the brain. The brain was that of a Randall's Island patient, a man of thirty years, who had been in the idiot asylum for several years. A history of the origin of his trouble could not be obtained. He was a large, heavy man, with a hemiplegia (the arm being much worse than the leg) and with frequent and severe general epileptic convulsions. While able to be about, he was dull and stupid, and in intelligence would be placed in the grade of moderate idiocy. He died in an epileptic fit. There was nothing abnormal in the other organs of his body, but the brain presented the condition of marked right hemiatrophy. There was very slight evidence of microgyria, the convolutions differing as regards normality from those of the opposite side in being somewhat smaller. The membranes over the right hemisphere were, perhaps, somewhat thicker than over the left. An examination of the vessels at the base of the brain showed that the blood-supply was apparently equal for the two sides. It was undoubtedly a lack of development through some obscure and early pathological process.

A CASE OF AMYOTROPHIC LATERAL SCLEROSIS, SUPPLEMENTARY REPORT.

Dr. William Hirsch said that on October 1, 1895, he had presented to the Society a case of this kind. The patient was forty-three years of age, and had had poliomyelitis at the age of twenty. The clinical symptoms were such that at that time he had traced them from the old scar in the left anterior horn in the cervical region. The process must have approached the left pyramidal tract, and then, after affecting the right horn, spread over the right pyramidal tract, causing a spastic condition of the right leg. That was his opinion at that time, and a few such cases had already been presented.

In the discussion, it was claimed that the case was one of ordinary progressive muscular atrophy. But further clinical observation of the case showed that this was not the case. The man died on June 3, 1897, and Dr. Hirsch was now able to present microscopical specimens of the spinal cord in different regions, proving the correctness of his diagnosis. He said that in these specimens one could see the connective tissues spreading from the anterior horn to the left pyramidal tract, and the latter converted into connective tissue. The cells in the anterior horns had been destroyed, the connective tissue had formed all through the lateral tract. In the cervical region one bundle of connective tissue had spread backward into the posterior column, as he had previously diagnosticated. Deep degeneration of the pyramidal tracts could be followed down to the lumbar region.

Dr. Hammond asked how he would differentiate these specimens from progressive muscular atrophy.

Dr. Hirsch replied that the specimens showed that the case was not one of ordinary degeneration of the lateral tracts, but that the connective tissue grew horizontally from the anterior horn to the side. Furthermore, the ordinary progressive muscular atrophy is a symmetrical disease.

Dr. G. M. Hammond said that in three unquestioned cases of progressive muscular atrophy that had been under his observation there had been a typical degeneration of the pyramidal tracts. On looking up the subject, he had found that Gowers made the statement that he had not seen a case of progressive muscular atrophy in which the pyramidal tracts had not been extensively affected. It was true that in the specimen presented one horn was affected more than the other, nevertheless both horns were involved.

Dr. C. L. Dana thought these sections looked very much like specimens from a case of progressive muscular atrophy. If the pathological change were not one of degeneration of the horns and lateral columns, he would like to know what Dr. Hirsch thought it really was.

Dr. B. Sachs thought the main point was as to whether the degeneration was strictly bilateral in the lateral columns, or more marked on the side of the old poliomyelitis.

Dr. Dana thought that at the time of the poliomyelitis there had been considerable hemorrhage in the neighborhood of the anterior horns, and the lateral columns might have been injured and a scar formed. The degeneration would then be secondary to this scar.

Dr. Hirsch said that it was not a descending degeneration, but a growing out of connective tissue from the anterior horns peripherally and laterally in the direction of the pyramidal tracts, and the series of sections that he had made enabled one to follow this branching out of the bundles of connective tissue. This was quite different from an ordinary case of progressive muscular atrophy complicated by a secondary degeneration of the lateral tracts. The specimen presented showed that an old focus in the anterior horn had set up a secondary inflammation. It was difficult to form a correct conception of the case without a careful examination of the whole series of specimens. The case represented one of these processes of inflammation characterized by the formation of connective tissue.

Dr. M. Allen Starr asked Dr. Hirsch if the focus of inflammation in one anterior horn and extending into the adjacent columns might not produce a secondary sclerosis downward through the cord and so explain the condition.

Dr. Hirsch replied that it extended laterally as well as upward. He had not yet examined the medulla oblongata. The poliomyelitis was in the cervical region of the cord, about the region of the left arm.

Dr. Dana said that according to the specimens presented there was no lateral degeneration in the upper sections of the cord, but a posterior degeneration.

Dr. Hirsch replied that the gray matter did not appear perfectly normal except in the right horn of the lumbar region.

UNILATERAL ATROPHY OF THE BRAIN.

Dr. Pearce Bailey reported a case of this kind occurring in a carpenter who was fifty-seven years of age at the time of his death. He had been perfectly healthy up to the forty-seventh year, and had then had an attack of apoplexy. At this time he awoke to find one side powerless, and this power he never regained. The picture was that of extreme left hemiplegia. The atrophy in the paralyzed limbs was not unusual in degree. There was no disturbance of psychical sense functions or general intellectual capacity. Speech was clear. In the summer of 1897 he died of acute lobar pneumonia. At the autopsy, the dura mater was found adherent at the right anterior portion of the cranial border, and in the adhesions between the dura and pia was a collection of clear serum. It was not a cyst of the brain itself. The left hemisphere was normal in size. The whole right hemisphere was much smaller than the left. The unilateral atrophy involved also the brain-stem and spinal cord. The right internal carotid artery was less than half the size of the left. The forward portion of the right hemisphere was in a state of advanced chronic softening. Sections from the pre-central gyrus and from the occipital lobe contained few ganglionic elements. The cuneus was affected similarly, though to a lesser degree. Although the frontal lobes, which are supposed to be intimately connected with mental processes, were almost completely obliterated on one side, mentality had not been impaired. It was believed that the lesion occurred after complete cerebral and bodily growth had been attained. It was assumed that the original lesion was a thrombus in the right internal carotid artery, at or near its bifurcation. This case emphasized the necessity for caution in regarding any single region of the brain as indispensable to mental perfection.

Dr. Herter said that he had no doubt that the extreme degree of atrophy was the result of extensive arterial lesion; possibly the very slow development of the vascular lesion in the frontal region would go far towards explaining the absence of marked cerebral symptoms. In his experience, comprising cases of acute softening and abscess, where there had been extensive destruction of the frontal lobe on one side, there had been considerable interference with the mental functions.

Dr. Sachs said it seemed to him very evident that Dr. Bailey's case was distinctly vascular in origin, which was in sharp contrast with Dr. Peterson's case.

Dr. Bailey, in closing, said that there seemed to be no doubt that the entire half of the brain in his case had been affected.

A NEW DEVICE FOR ADAPTING THE INCANDESCENT ELECTRIC CURRENT TO THERAPEUTIC PURPOSES.

Dr. A. D. Rockwell demonstrated the action of an apparatus which, he said, comes under the head of shunt controllers, but is of novel construction. It ranges from one to seventy-five volts, and can be varied one volt at a time up to thirty volts, and then three volts at a time for the balance. The galvanic current in this way can be readily superimposed upon the faradic, giving most interesting therapeutic results. The movement of the milliampère-meter during the simultaneous passage of the two currents is somewhat greater than when only the galvanic current passes, probably owing to a lowering of the resistance of the body by the faradic current. This combined application had been found by him particularly useful in cases of exophthalmic goitre.

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LIVING WITHOUT A STOMACH.

"BY the courtesy of the operator, and the enterprise of our representative at Zurich," the *New York Medical Record* (January 1, 1898), as the Editor informs us, is "enabled to publish for the first time a full and detailed account of this unique and most remarkable surgical feat" — the successful extirpation of the entire stomach. "The result of this case," the Editor continues, "in view of our generally accepted notions concerning the real value of the stomach, its physiological place in the economy, and the essential vital functions so long claimed for it, will strike all with becoming astonishment. It is rather an unexpected slight to what has always been considered one of the essential organs of the body, and one governing all others with undisputed sway and unquestioned autocracy. Its fabled quarrel with the other parts of the body, in the story of Æsop, would appear in the present light as scarcely more than the mythical hypothesis of a wild and unreasonable fabrication. The fact appears proven that the human subject can live and be reasonably active for months at a time without any stomach whatever, and obtain all the necessary digestion and nourishment from what remains of the intestinal tract. Is it possible that the latter may have a new set of functions not yet understood, or has the importance of stomach digestion been misapprehended and overrated?"

These are swelling words, and deserve attention for several reasons, not the least among which is that the "enterprise" celebrated by the *Medical Record's* editorial has allowed the matter to reach the daily newspapers for exploitation in their own inimitable way. The story which they tell will be read with both mirth and sadness. It is not, however, with this regrettable notoriety that we are most concerned, distressing though it be to see an account so highly colored, so full of error, so steeped in wretched English, hawked about from one sensational journal to another; it is with the editorial itself that we feel constrained to enter the lists.

"The result, in view of our generally accepted notions concerning the real value of the stomach — its physiological place in the economy" — does indeed strike us with what we trust is "becoming astonishment." But we must confess that our wonder is not so much for the clever surgeon, and the "enterprising correspondent," as for the chasm that we see suddenly opened between the physiology taught by the *Medical Record* and that upon which we ourselves have heretofore relied. Our own views "would appear in the present light as little more than the mythical hypothesis of a wild and unreasonable fabrication." Still, though for a time cast down, we have plucked up heart to champion the cause of the extensive and, to our mind, important apparatus which the *Medical Record* unkindly terms "what remains of the intestinal tract."

We are not surprised that our learned contemporary, holding such opinions concerning the "economy," should feel that the total removal of the stomach "is rather an unexpected slight to what has always been considered one of the essential organs of the body, and one governing all others with undisputed sway and unquestioned autocracy." We await with much interest the statement of the Editor as to where he learned that the stomach "governed all the other organs of the body with undisputed sway and unquestioned autocracy." It is true that Bichat and Nasse, following earlier philosophers, placed the seat of the emotions, for example, compassion and the affections, in the viscera of the trunk; but their opinions are now not generally received. The *Medical Record*, so far as we are aware, is the only Modern still maintaining these ideas. It should be said, however, that the material changes that have taken place in the knowledge of digestion are the result of investigations made in the past twenty years, and are thus comparatively recent.

It is a little more than twenty-one years, we believe, since Czerny and his pupils, Kaiser and Scriba, removed the whole stomach from various dogs. One of these, operated upon December 22, 1876, lived for six years in perfect health. "In Leipzig, in the year 1882," writes Gamgee in his well-known work on "The Chemistry of Digestion" (p. 163), "Ludwig and his pupil Ogata were engaged in investigating the functions of the stomach. It occurred to them that it would be interesting to learn what had become of Czerny's dogs. Ludwig wrote to Heidelberg, to Czerny, who answered by sending the dog in a perfectly healthy state to Leipzig. It was in excellent spirits and ate all kinds of food with a keen appetite. The feces were normal. In consequence of the abundant food, it had put on weight and it did not appear to differ in any way from an ordinary dog.

"Ogata, working under Ludwig's direction, instead of having recourse to the formidable operative procedure of Czerny, established a duodenal fistula, which permitted the introduction, through the fistula, of an india-rubber ball, connected with a tube, which allowed of the ball being distended with water, so that it shut off the stomach from the duodenum. It was then possible to introduce alimentary substances into the duodenum. It was found that the introduction of pounded egg and minced flesh into the duodenum, twice daily, sufficed to keep the animal experimented upon in health and up to weight. Ogata found that, in the main, digestion proceeded as usual, there being, however, somewhat less perfect digestion of connective tissue.

"These extraordinary results are in agreement with the knowledge which we possess, that the stomach discharges digestive functions which are shared by other organs and prove that in animals possessed of great vitality the failure of one organ may lead to such compensatory over-activity of the co-operating organs as suffices, for a time at least, to shield the organism from evil consequences."

To this excellent text-book statement of the modern view of the results of removal of the stomach should be added the fact that nearly all, and, in at least one case, the whole stomach has been removed from man. The patient from whom the whole stomach was removed was a tax collector at Stettin, and suffered from cancer. The operation was performed by Dr. Schuchardt. A year and a half after the operation the patient was as healthy "as any other man," and worked eight to ten hours a day. This case went the rounds of the German newspapers.[1] Even human beings, then, may obtain "all the necessary digestion from what remains of the intestinal tract."

It is not possible to speak here of the many interesting researches in this field in recent years. The action of the stomach as a reservoir for the food, feeding the intestine at measured intervals; the antiseptic properties of the gastric juice; the fact that water is not absorbed from the stomach but to a very limited extent; and other recently discovered facts, which give new interest to the physiology of digestion, must be passed over. They go far to provide the stomach with what the *Medical Record* calls "a new set of functions." The most recent of these investigations, and, in our judgment, one of the most interesting, is that reported for Mr. W. B. Cannon at the December meeting of the American Physiological Society (see the next number of the *American Journal of Physiology*). Following the suggestion of Prof. H. P. Bowditch, the movements of the food in the stomach have been investigated by mixing subnitrate of bismuth with the food, thus making it impervious to the Röntgen ray, and watching the swallowed mass with the fluorescope. Mr. Cannon finds that the stomach consists physiologically of two distinct parts: the pylorus, and the fundus. Over the pylorus part, while food is present, constriction waves are seen continually coursing towards the pylorus. The cardia is an active reservoir for the food, squeezing out its contents gradually into the pyloric part: The stomach is emptied by the formation, between the fundus and the antrum (that is, the part of the pyloric portion next the duodenum), of a tube along which constrictions pass. The contents of the fundus are squeezed into the tube, and the tube and antrum are slowly cleared of food by the waves of constriction. The pylorus does not open at the approach of every wave, but only at irregular intervals. The arrival of a hard morsel causes the sphincter to close, thus materially interfering with the passage of the already liquefied food.

Space is lacking for further extracts from this valuable investigation; but we must add, in conclusion, that Mr. Cannon finds the contents of the fundus — the "active reservoir" — alkaline for an hour or more after food is taken. It is most probable that a considerable conversion of the starches into sugar takes place here during this time.

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NEWER CONTRIBUTIONS TO OUR KNOWLEDGE OF THE ACTION OF IRON.

In a recent number of the *Zeitschrift für physiologische Chemie* a contribution to the discussion of the therapeutical availability of iron is made by E. Häusermann, a pupil of G. v. Bunge and a student in his laboratory at Bâle. During the past two years a certain amount of experimental evidence has been brought forward by various observers (Woltering, Gaule, Hall, Hochhaus and Quincke and Kunkel) to show that iron may be given to animals mixed with their food and be absorbed by them. This is in general opposed to the view advocated by Bunge and others that iron in the form of the ordinary compounds is not made use of by the animal body but must be presented in some peculiar organic "hematogenous" form to be absorbed and become a portion of the blood (hemoglobin). The article before us, in which obviously the voice of Bunge is heard although the pen is that of Häusermann, points out that in all these experiments, with the exception of Kunkel's, the doses of iron were large, much larger in fact than may be used for man without causing disturbances of the digestive tract. The real question is whether small amounts of iron given to animals manifest any influence on the iron content of the body or more particularly on the quantity of hemoglobin, since the writer admits, and this is apparently a recent concession, that iron may be *absorbed* but doubts if it be *assimilated.* The experiments of Kunkel are held to be inconclusive on account of their small number.

Häusermann then proceeds to report and analyze his own experiments made on young rats, rabbits, and dogs. Some years ago Bunge had shown that new-born animals have just about enough iron to carry them through the ordinary period of milk diet. As milk contains only a very small amount of iron it was proposed to use a prolonged milk diet as a means of producing anemia and of testing the efficiency of iron preparations when added to such food. In accordance with this plan Häusermann carefully isolated his animals after being suckled for a few weeks, and fed them on milk alone or where practicable on a mixture of milk and rice. He had determined the amount of iron in rice to be even smaller than in milk. Other animals of the same litter were fed on the same material with the addition of small amounts of ferric chloride; in a few instances hemoglobin was used. From some litters it was also possible to form a group to be fed on the natural food of the animals. After a certain period of this form of feeding the animals were killed by ether, the skin and digestive tract were removed and aqueous extracts were made of the rest of the body and in these the hemoglobin was determined by a colorimetric method. This was then calculated in terms of the body weight after removal of the pelt and intestine. These structures were left out of the account to avoid certain sources of error to which Bunge has called attention. In the rat experiments the amount of iron in the extract was also determined.

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[1] We have not been able to find the medical literature of this case in time for the present issue.

If we leave out the details of weight and some other matters, the tables for the rats may be given in outline as to results as follows:

YOUNG RATS.

HEMOGLOBIN IN ONE THOUSAND PARTS BODY WEIGHT.

	Litter I.	Litter II.	Litter III.	Litter IV.
Milk diet + iron .	4.13 3.43 4.43 3.90 [3.97]	4.10 5.69 [4.89]	4.45 5.42 [4.93]	5.76 5.52 6.16 [5.81]
Milk diet alone . .	6.14 5.10 3.73 4.95 [4.98]	.... 2.55 2.35 [2.45]	.... 3.15	.... 4.16 5.55 5.98 [5.23]
Mixed diet . . .	....	5.80 6.51 [6.15]	8.29	....

Häusermann notes that the variations in the amount of hemoglobin are considerable, and calls attention to the very large figures for the rats fed on a mixed natural food. He is, however, disposed to belittle the favorable figures found in the iron experiments. We have taken the trouble to calculate the mean value of the hemoglobin in each group, and have placed it in brackets in the table above. It will thus be seen that in three litters these values indicate that the iron has helped the formation of hemoglobin. Still more striking is the mean value of the hemoglobin for all the rats in each form of experiment. Calculating this, we find that eleven rats on a milk diet with iron had on an average 4.82 grammes hemoglobin for one thousand grammes body weight, while ten rats on a milk diet without iron averaged 4.37 grammes. The corresponding value for the three rats on a mixed diet with no extra iron is 6.87 grammes. Attention is also called by the writer to the large amounts of iron in the extracts and to the fact that the quantities are in many cases much greater for the iron-fed animals. This leads to the admission that iron is really absorbed in these experiments but is not assimilated. Perhaps it ought to suggest that the colorimetric determination of the hemoglobin is not in accord with the quantitative determination of the iron. We have taken the trouble to recalculate the iron values in terms of body weight of the animals. The results are very interesting since for each litter the value, as determined by titration, is larger for the iron-fed group. The mean values for all the experiments also seem instructive. In the iron-fed series we have .0855 *milligrammes* of iron per *gramme* of body weight, the value becoming .0610 for the series fed only on a milk diet and .0827 for the much smaller series with a mixed diet. Calculated for the iron as determined by a weighing method the figures become .1010, .0834 and .0942 respectively.

In the rabbit experiments only the hemoglobin is noted and no special determination of the iron reported. Unfortunately there is but one experiment with a mixed or normal diet. The table abbreviated as before is as follows:

YOUNG RABBITS.

HEMOGLOBIN IN ONE THOUSAND PARTS BODY WEIGHT.

	Litter I.	Litter II.	Litter III.
Milk diet + iron	5.66 4.89 4.54 [5.03]	4.35 5.56 4.34 [4.75]	6.87 5.68 5.92 [6.16]
Milk diet. No iron . . .	3.68 5.06 [4.37]	4.88 3.87 [4.37]	4.71 5.39 3.87 [4.66]
Mixed diet	....	....	9.03

The mean value for all the iron-fed rabbits, nine in number, is 5.31; that for the seven with no iron is 4.49. So far as it goes this result speaks in favor of the iron treatment although the influence of proper food is far greater as shown by the single experiment recorded.

The investigations made with puppies also favor the view that iron may be helpful although not the best means of increasing the hemoglobin. Here, too, no special determination of the iron is made. The condensed table for hemoglobin is as follows:

YOUNG DOGS.

HEMOGLOBIN IN ONE THOUSAND PARTS BODY WEIGHT.

	Group I.	Group II.	Group III.
Milk diet + iron	7.05 10.04 [8.54]	10.57	8.28 7.99 [8.13]
Milk diet. No iron . . .	4.00 6.58 11.52 [7.37]	6.61 5.14 [5.87]	.... 5.34 ....
Mixed diet	....	10.00	7.55 8.21 [7.88]

The mean value for the five iron-fed dogs is 8.79, for six on a milk diet 6.53, while for the three on a normal diet it is 8.59.

Häusermann's final general statement as to the value of iron is, freely translated, this: "But even if we admit that iron is made use of for hemoglobin formation this conclusion has no practical value since all our experiments on rats, rabbits, and dogs are in accord in showing that animals assimilate at least as much hemoglobin [*Hämoglobin assimiliren*] or even more from their normal food, which is rich in iron, than from food deficient in iron to which an organic iron is added. When, then, an anemic person is getting proper food there is no necessity for sending to the apothecary for iron to add to this food as material for the hemoglobin formation." An examination of our average values made up from the figures of this investigator suggests that even this cautious and tentative statement may need further modification.

A valuable table is also given showing the iron content of a large variety of food stuffs — nearly sixty in number — rather more than half being new analyses made by the author. This list throws light on the usefulness of food materials which have commonly received a rather stepmotherly treatment at the hands of the physiologist and the professional manipulator of diet tables. From this point of view, too, the article must be considered a considerable addition to our knowledge of nutrition. Cloetta has also made use of the method suggested by Bunge for studying the iron question. His results we hope to consider at another time.

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MEDICAL NOTES.

St. Louis Laryngological and Otological Society. — The St. Louis Laryngological and Otological Society was organized on December 27th. Dr. J. C. Mulhall was elected President, and Dr. F. M. Rumbold, Secretary, for the year 1898. Meetings will be held monthly.

Plague at Bombay. — According to late reports from Bombay (December 29, 1897) the plague has broken out afresh. In the Mandvie district the inhabitants are seeking safety in flight. To-day there were 54 new cases and 37 deaths. The total plague returns from Bombay up to date are 14,257 cases and 11,882 deaths.

Congratulations to Sanarelli. — The Italian Society of Internal Medicine, recently in session in Naples, sent a letter of congratulation to Dr. Sanarelli, "who, in distant lands, while in peril of his life, made such memorable discoveries concerning the etiology of yellow fever, thereby winning for himself imperishable honor and giving to his native land a cause for legitimate pride."

A Naval Hospital Corps Recommended. — It is reported from Washington that Secretary Long has sent to the House Naval Committee a draft of a bill "To organize a Hospital Corps of the United States Navy, to define its duties and regulate its pay." The secretary is said to make this recommendation on the basis of the satisfactory work done by the Army Hospital Corps and the fact that a similar organization in the navy could be accomplished and maintained with practically no additional expense to the navy. The proposed Naval Hospital Corps would be located at Portsmouth, N. H.; Chelsea, Mass.; Newport, R. I.; New York City; Philadelphia; Washington, D. C.; Norfolk, Va.; Pensacola, Fla.; Mare Island, Cal., and Yokohama, Japan.

The Russian Plague Commission. — The Russian Plague Commission, according to the *Medical Record*, have not been able to satisfy themselves of the popular belief that plague is spread by rats and grain. They also find that, according to their experience, neither Yersin's nor Haffkine's serum conferred any lasting immunity, a dose of ten cubic centimetres of the former or five cubic centimetres of the latter making a monkey immune for only ten days or two weeks. The injection of a fresh agar culture, kept at a temperature of 60° C. for one hour, produced immunity more slowly, but the protection so obtained was more lasting. The curative effects of the serum were better, yet they could hardly be regarded as entirely satisfactory when it is stated that forty per cent. of the cases treated by Yersin's serum terminated fatally. Apparently, therefore, we cannot yet rely upon serum treatment to repress an epidemic of the plague, and so we must still look to the much abused quarantine to preserve a country threatened with a visitation of this reviving enemy of the human race.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, January 5, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 88, scarlatina 59, typhoid fever 10, measles 45.

A Boston Centenarian. — Mr. Joseph Davis Jones recently celebrated his one hundredth birthday at the Home for Aged Men, on Springfield Street, Boston.

Death of a Vermont Centenarian. — Mrs. Abbey Wachsi, known all over Vermont as "Aunt Abbey," died at her home, at Groton, Vt., recently, aged one hundred years, five months. Mrs. Wachsi had twelve children, thirty-eight grandchildren, nine great-grandchildren and two great-great-grandchildren.

One Type of Pension Claimants. — Here is another illuminating pension story: A Boston physician who formerly occupied the two positions of medical examiner for pensions and for positions in the Boston police and fire departments was called upon to examine an applicant for appointment to the police force. The applicant testified that he was able-bodied in every respect, and had never had a sick day in his life. Subsequently the same man appeared before the board of medical examiners for pensions as an applicant for an increase of his pension, and he testified that he was a physical wreck and incapacitated for work on account of his physical infirmities, resulting from his services in the war. His identity with the man who had a short time previously applied for a police appointment was established and neither application was recommended. What might have happened had he not indulged in this duplicity need not be considered. The facts here recited show how little dependence is to be placed on the testimony of some people who look for support at the public expense. — *Boston Herald.*

Failure to Report Contagious Diseases in Massachusetts. — The law which required cities and towns to report to the State Board of Health any cases of small-pox was amended in 1893 so as to include "any other diseases dangerous to the public health." Notwithstanding this amendment, the cities of Chicopee and Holyoke, nineteen large towns in various parts of the State, and a considerable number of smaller places, have not reported a single contagious disease during the years 1896 and 1897. The State Board of Health cannot get at the actual number of cases of contagious disease in the State when over one hundred places refuse figures. The law of 1893 fixed a penalty, which was that if the Board of Health of a city or town refused or neglected to furnish the notice, it should forfeit its claim upon the State for reimbursement where it had expended money for a person, ill with such a disease, who had no money or no settlement. In all such cases the money is paid upon the approval of the bill by the State Board of Lunacy and Charity. The Board of Health has now arranged with the Board of Lunacy and Charity to be notified whenever such a claim comes in from a city or town which does not furnish notices, and the auditor will be notified in turn of such neglect before the claim is paid. There were 21,320 cases of contagious disease properly reported to the Board last year.

NEW YORK.

Christmas Service by Telephone. — The entire Christmas service, including music, prayers and sermon, at the Roman Catholic Church of the Assumption at Norristown, N. J., was transmitted by telephone to the patients of All Souls' Hospital, a mile distant, a receiver being placed by the bedside of each patient.

The Lowest Mortality on Record. — The complete record of the mortality of the city for the year ending at noon on December 31st, as presented by the Board of Health to the Mayor on the afternoon of that day, shows the lowest death-rate recorded in the history of New York. The total number of deaths was 38,857, which in an *estimated* population of 1,990,562 for the year, gives an annual death-rate of 19.52 per thousand inhabitants. In 1896 the number of deaths was 41,432 and the death-rate 21.53; in 1895, 43,420, and the death-rate 23.11; in 1894, 41,175, and the death-rate 22.76; in 1893, 44,436, and the death-rate 25.30; and in 1892, 44,329, and the death-rate 25.95. Thus, while the population five years ago was 1,708,124, or 282,438 less than in 1897, in the latter year there were actually 5,472 fewer deaths than in 1892. Although there can be no question that the unusually cool summer had some effect in diminishing the mortality of the past year, the remarkably low death-rate shown is on the whole very gratifying.

Mayor Van Wyck's Medical Appointments. — Among the appointments made for positions in the administration of the Greater New York by Mayor Van Wyck are the following: President of the Board of Health, salary $7,500, Nathan Strauss; Commissioners of the Board of Health, salary $6,000, Drs. William T. Jenkins and John B. Cosby; Chief of Bureau of Municipal Statistics, salary $3,500, Dr. John T. Nagle; Commissioner of Public Charities for the Borough of Richmond (Staten Island), salary $2,500, Dr. M. B. Feeny. Mr. Strauss is well known for his philanthropy in the establishment of depots for the sale of coal to the poor at cost prices and for the distribution of sterilized milk. Dr. Jenkins is the former health officer of the Port of New York, and Dr. Cosby was graduated from the medical department of Washington University, Baltimore, in 1873 and from Bellevue Hospital Medical College in 1875. He is a member of the County Medical Society. Dr. Feeny, who up to January 1st was Chairman of the Board of Supervisors of Richmond County, was a candidate for President of the Borough of Richmond in the recent election. The vote proved a very close one, and as both the candidates for the position claimed to have been elected, the matter was taken to the courts, and has not yet been decided. Dr. Nagle, who served for a long term of years in the New York Health Department and was finally retired at his own request, was the first official of the department to receive a pension for his services.

Miscellany.

THE SENATE BILL FOR PREVENTION OF CRUELTY TO ANIMALS IN DISTRICT OF COLUMBIA.

Extract from *The Congressional Record* of December 15, 1897:

Mr. Gallinger: Mr. President, while I think it is a vicious habit that the Senate has got into of making certain bills the unfinished business several months in advance, I do not rise to object to the request made by the Senator from South Dakota, but simply to say that during the last Congress, from the Committee on the District of Columbia, I reported unanimously a bill for the further prevention of cruelty to animals in the District of Columbia. Upon solicitation from several Senators, saying that they were receiving letters from their constituents protesting against the passage of the bill, I allowed it to drift along, and did not ask for the consideration of it. On the 13th of May, 1897, the bill was again reported, and is on the Calendar. I simply rise to say that, while I shall not object to the request of the Senator from South Dakota — because I never object to his requests — at an early day I shall move to take up that bill, which is Senate Bill 1063, Calendar No. 136. I trust that when I ask the consideration of the bill it may not be objected to, but that that matter, which to my mind is extremely important — and a controverted matter, I will say, on the part of physicians, scientists and humanitarians — may have a fair discussion, and that we may have a vote of the Senate deciding whether or not that bill shall pass this body. That is all I care to say.

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Correspondence.

ABUSE OF MEDICAL CHARITY.

Boston, January 3, 1898.

Mr. Editor: Much has been written recently on this subject in the medical journals, and even the lay press has devoted much attention to it. Judging from these articles, we are led to believe that a certain class of unworthy people in the community (many of them well-to-do) are entirely responsible. From a large experience in general practice and hospital work, I believe that the profession is to blame. I would give the causes of this abuse in order of importance, as follows:

(1) The general practitioner who refers cases to out-patient departments of hospitals and dispensaries, either because he wishes to shift responsibility of the case, or because his means are such that he does not require this practice.

(2) The specialist who charges exorbitant fees, or those whose fees are too high (although apparently moderate) for the working-classes.

(3) The class of people who attend clinics because of ignorance. They have the prevailing idea that specialists always charge large fees. There is also a class of people who believe that more skilful service can be obtained there than outside. These people are honest and are willing to pay physicians for services.

(4) Unworthy applicants. This class is small.

REMEDIES FOR ABUSE.

(1) The general practitioner should refer only the poor to clinics; he should not refer a case to obtain a diagnosis; nor simply to get rid of what may be, to him, undesirable practice. The case, unless poor, should be referred to some young practitioner or specialist. The medical student should receive a better training on minor surgery and minor ailments of branches, such as opthalmology, otology, gynecology, etc.

(2) The young specialist should reduce fees to conform with the means of those in moderate circumstances. His services to this class are no more valuable than those of the general practitioner of this city, who receives on an average one or two dollars for office fees. More young men should take up special branches as auxiliary to general work, and thereby fulfil the demand of the people.

(3) Investigation should be made at clinics by one appointed for this special duty. He should give all necessary information to people who come there from their ignorance, believing that they cannot get the same skill at moderate cost outside. The objects of the clinics, namely, to give medical aid to the poor and destitute, can be also explained to them.

(4) Unworthy applicants can be rejected by this system of investigation.

From my experience I would say, that the majority of physicians doing out-patient work are honest, able, earnest men, who have no desire to interfere with their fellow-practitioner; they give much time to their work, and it is unreasonable to expect them to investigate the cases. The fact that many cases are referred by their fellow-practitioners to aid in diagnosis shows their ability is held in high esteem.

By realizing the causes of abuse and applying the remedies, we can prevent most of the imposition.

Had I the time, I might elaborate by giving numerous examples to illustrate the importance of the causes which I have enumerated. Often the men who cry the loudest against the imposition of medical charity are the ones who send cases, especially those of minor surgery, to the out-patient departments. Many worthy persons have been started in their career of patronizing hospitals by the doctor. In fact, I think the largest number of unworthy cases treated can be traced directly or indirectly to the profession.

Very truly yours, M. D.

RECORD OF MORTALITY

For the Week ending Saturday, December 25, 1897.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,868,060	650	258	11.25	19.80	1.80	1.05	4.05
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	396	106	13.25	14.00	1.00	3.75	6.75
Brooklyn . .	1,160,000	318	—	10.85	12.09	1.55	1.24	6.51
St. Louis . . .	570,000	184	51	10.26	13.50	1.08	1.62	7.02
Baltimore . .	550,000	174	56	13.34	8.70	1.16	3.48	6.38
Boston . . .	517,732	175	48	10.26	18.24	.57	1.71	5.13
Cincinnati . .	405,000	102	—	7.92	14.85	2.97	3.96	—
Cleveland . .	350,000	91	24	8.72	11.99	—	4.36	4.36
Pittsburg . .	285,000	94	31	16.96	12.72	—	6.36	3.18
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Nashville . .	105,050	25	7	12.00	20.00	—	4.00	4.00
Worcester . .	105,050	29	10	10.32	17.20	—	3.45	6.90
Fall River . .	95,919	29	16	3.45	34.48	—	—	3.45
Lowell . . .	87,193	41	15	4.88	14.64	—	—	4.88
Cambridge . .	86,812	20	6	5.00	20.00	—	—	—
Lynn	65,220	15	—	6.66	6.66	—	6.66	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	20	6	5.00	10.00	—	—	—
Lawrence . .	55,510	15	4	13.33	13.33	—	5.88	13.33
Springfield . .	54,790	22	9	20.75	4.15	8.30	8.30	—
Holyoke . . .	42,364	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	10	—	—	—	—	—	—
Brockton . .	35,853	2	0	—	—	—	—	—
Malden . . .	32,894	13	0	15.38	15.38	—	7.69	7.69
Chelsea . . .	32,716	12	5	8.33	—	—	—	—
Haverhill . .	31,406	12	1	16.66	8.33	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	3	0	—	—	—	—	—
Fitchburg . .	28,392	8	3	—	25.00	—	—	—
Taunton . . .	27,812	10	1	—	10.00	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	9	0	22.22	22.22	—	—	22.22
Everett . . .	21,575	—	—	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	2	1	50.00	—	—	—	50.00
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,572; under five years of age 677; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 307, acute lung diseases 389, consumption 285, diphtheria and croup 148, typhoid fever 59, diarrheal diseases 32, scarlet fever 20, measles 17, whooping-cough 14, cerebro-spinal meningitis 12, erysipelas 5.

From scarlet fever New York 8, Philadelphia and Brooklyn 3 each, Boston 2, St. Louis, Baltimore, Pittsburg and New Bedford 1 each. From measles New York 9, Pittsburg 4, Brooklyn 2, Philadelphia and Nashville 1 each. From whooping-cough New York 4, Philadelphia 3, Baltimore and Pittsburg 2 each, Cincinnati, Springfield and Haverhill 1 each. From cerebro-spinal meningitis New York 6, Boston 3, Worcester 2, Chelsea 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,992,524, for the week ending December 18th, the death-rate was 20.6. Deaths reported 4,352; acute diseases of the respiratory organs (London) 457, measles 247, diphtheria 94, whooping-cough 93, fever 58, scarlet fever 42, diarrhea 27.

The death-rates ranged from 14.1 in West Ham to 27.9 in Norwich; Birmingham 24.0, Bradford 20.3, Bristol 21.6, Cardiff 14.4, Gateshead 21.2, Huddersfield 17.5, Leeds 23.0, Leicester 20.7, Liverpool 23.8, London 21.0, Manchester 19.6, Newcastle-on-Tyne 18.2, Nottingham 16.6, Sheffield 22.8, Swansea 20.3.

METEOROLOGICAL RECORD

For the week ending December 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..19	30.31	18	23	14	69	68	68	N.W.	N.W.	18	19	C.	C.	
M..20	30.24	22	30	13	56	66	61	N.W.	S.	12	8	O.	N.	
T ..21	29.76	28	34	23	94	82	88	N.W.	N.W.	15	8	N.	C.	.16
W..22	29.82	25	32	18	66	89	78	N.W.	S.W.	12	7	O.	O.	
T ..23	29.59	28	33	23	84	65	74	N.W.	W.	12	17	F.	C.	
F...24	29.94	18	23	13	47	45	46	W.	W.	14	16	C.	C.	
S...25	30.20	19	29	9	44	62	53	W.	S.W.	12	13	C.	C.	
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 25, 1897, TO DECEMBER 31, 1897.

Leave of absence for one month, to take effect on or about January 4, 1898, with permission to apply for an extension of two months, is granted Major Egon A. Koerper, surgeon, Fort Crook, Neb.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 23, 1897.

Carter, H. R., surgeon. To rejoin station at Chicago, Ill., temporarily. December 20, 1897.

Nydegger, J. A., passed assistant surgeon. Granted leave of absence for seven days from January 1, 1898. December 20, 1897. Upon expiration of leave of absence to report to commanding officer at New Orleans, La., for temporary duty. December 20, 1897.

Clark, Taliafero, assistant surgeon. To proceed, on or about January 2, 1898, to South Atlantic Quarantine Station and assume temporary command of Service. December 20, 1897.

EXAMINATION OF CANDIDATES FOR THE MARINE-HOSPITAL SERVICE.

Washington, D. C., December 24, 1897.

A board of officers will be convened at Washington, D. C., January 25, 1898, for the purpose of examining for admission to the grade of Assistant Surgeon in the United States Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service, Assistant Surgeons are entitled to examinations for promotion to the grade of Passed Assistant Surgeon.

Promotion to the grade of Surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant Surgeons receive sixteen hundred dollars, Passed Assistant Surgeons two thousand dollars, and Surgeons twenty-five hundred dollars a year. When quarters are not provided, commutation at the rate of thirty, forty or fifty dollars per month, according to grade, is allowed.

All grades above that of Assistant Surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address: Walter Wyman,

Supervising Surgeon-General, U. S. Marine-Hospital Service.

TALKS ON THE HISTORY OF MEDICINE.

Dr. David Hunt, of Boston, will give four informal lectures on "The History of Medicine," by invitation of the Harvard Medical Alumni Association. The lectures will be given at the Harvard Medical School on successive Thursday evenings in January, beginning January 6th at 8 P. M. Members of the profession and students of the Harvard Medical School are cordially invited to attend.

J. S. Stone, M.D., *Secretary.*

SOCIETY NOTICES.

Boston Society for Medical Improvement.—The annual meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, January 10th, at 8 o'clock.

Dr. J. W. Farlow will read: "On Some Forms of Adenoid Disease, which are often Overlooked, and on Conditions which may Simulate Adenoid Disease."

Drs. Paul Thorndike and J. B. Ogden: "Remarks on Cystinuria, with Report of a Case of Cystin Calculus in the Male Bladder."

At nine o'clock the annual election of officers will be held.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Boston Medical Society.— At a regular meeting of the Society the following officers were elected: Dr. S. Goodman, President; Dr. M. Gerstein, Secretary; Dr. V. Bychower, Treasurer.

The subject of "Medical Abuses" was discussed by various members. M. Gerstein, M.D., *Secretary.*

RECENT DEATHS.

George Carroll Dolliver, M D., M.M.S.S., died in Arlington, December 30, 1897, aged twenty-eight years.

Erastus Calhoun Coy, M.D., M.M.S.S., medical examiner for central Franklin County for twenty years, died at his home in Turner's Falls, December 28, 1897, aged sixty-five years. He was born in Colerain July 25, 1831. His first practice was in Peru, in this State. Then he lived in Worthington for five years and went to Turner's Falls in 1870. Dr. Coy was a member of the Board of Health for Montague from its organization till last year. He was a member of the lower branch of the Legislature in 1894.

BOOKS AND PAMPHLETS RECEIVED.

Ueber die Absorption von Fremdkörpern durch die Gaumentonsillen des Menschen mit Bezug auf die Entstehung von infectiösen Processen. Von J. L. Goodale, A. M., M.D., Assistent für Halskrankheiten im Massachusetts General Hospital und im Boston Children's Hospital. (Aus dem Laboratorium des Massachusetts General Hospital.) Sonder-Abdruck aus dem Archiv für Laryngologie, 7 Bd., 1 Heft.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, M.D., LL.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital of Philadelphia, Physician to the Philadelphia Hospital for Diseases of the Skin, etc. Third edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Co. 1897.

Sopra i Resti di un Coccodrillo Scoperti Nelle Ligniti Mioceniche di Montebamboli (Maremma Toscana). Nota Paleontologica del Dott. Giuseppe Ristori, Eseguita nel Gabinetto di Geologia e Paleontologia del R. Istituto di Studi Superiori in Firenze. Anno 1890. Pubblicazioni del R. Istituto di Studi Superiori Praticie di Perfezionamen to in Firenze, Sezione di Scienze Fisiche e Naturali. Firenze: Coi Tipi dei Successori le Monnier. 1890.

Sull'origine e Decorso dei Peduncoli Cerebellari e Sui Loro Rapporti Cogli Altri Centri Nervosi. Pel Dott. Vittorio Marchi, già aiuto dei professori Golgi, Luciani e Tamburini Libero docente d'Istologia. Memoria Premiata del R. Istituto Lombardo di Scienze e Lettere. Con 5 tavole cromolitografiche. Pubblicazioni del R. Istituto di Studi Superiori Pratici e di Perfezionamento in Firenze, Sezione di Scienze Fisiche e Naturali. Firenze: Coi Tipi dei Successori le Monnier. 1891.

Original Articles.

REPORT ON PHYSICAL TRAINING IN THE BOSTON PUBLIC SCHOOLS.[1]

BY WALTER CHANNING, M.D., BROOKLINE, MASS.

At a meeting of the Boston Society for Medical Improvement which was held in November, 1896, on motion of Dr. Walter Channing, it was resolved: "That this Society is in sympathy with the effort to secure the incorporation of a more thorough course of physical training in the course of study in the Boston public schools, through the action of the School Committee, and that a committee of three members of this Society be appointed by the president to report at an early day what steps are best calculated to promote favorable action by the School Committee." The president appointed as members of this committee Drs. W. Channing, E. H. Bradford and Wm. M. Conant.

The committee visited a number of schools of the primary, grammar and high-school grades in the city proper, and in the outlying districts of Dorchester, Roxbury, Charlestown, Allston and Brighton.

In the beginning it may be said that the committee had no definite idea of just how much or how little attention was given to physical training in the Boston public schools. If they had any opinion it was, perhaps, that the character of the work was rather meagre and unsatisfactory. They were aware of the earlier attempts that had been made, and of their final failure and collapse, and they were somewhat sceptical as to what they would now actually find.

It gives them pleasure to say that they were agreeably disappointed from the start, for they soon discovered that physical training as now being given under the direction of the present department to the public school children was founded on solid scientific principles in which unity, harmony and progression were apparent, and was being practically and successfully applied under a system of thorough, skilful and careful organization.

To lay out a plan on paper for an ideal system, and to put it into operation where the conditions are ideal, is not so difficult a matter; but to graft on to an institution of such conservative traditions as the Boston public-school system a branch essentially new, and at first sight not of apparent direct relationship, is a task of considerable magnitude. However good in itself, it must fit in with other subjects, and help and stimulate, rather than antagonize. It must prove its fitness not only as a part of general education, but as a positive educative force, before it can be regarded as having earned for itself a place in the school curriculum.

We believe that so far as physical training has been developed in the Boston schools it has been along these lines. The seed has been deeply planted; the roots of the tree have taken firm hold. Hand-in-hand with the other branches taught it is working harmoniously and beneficially. Everywhere the committee have gone they have been gratified to find the interest manifested by teachers and scholars. There may have been exceptions, but only frequently enough to prove the rule.

It is especially gratifying to find how thoroughly and carefully the teachers have taken hold. No system, however good, could succeed without this co-operation, and we must regard it as one proof of the excellence of the present system that this interest has been aroused. One evident reason why so much good work has been accomplished with the pupils is that they are reacted on by and share in the enthusiasm of the teachers. The committee are convinced that all the teachers of the schools must themselves be able to teach physical training if it is to have enduring vitality. They must feel it as a part of their personal work, and not something outside of, and alien to, themselves. Specialists to oversee and supervise there must necessarily be, but these should, when possible, be taken out of the regular school corps, and be experienced in the mental training and care of children. They will make all the better teachers of physical training if they have first had the other kind. Probably in every school one of the regular teachers, with a fondness for physical training, can ultimately be detailed to look after that branch and see not only that by itself it receives proper attention, but also that its harmonious correlation with other subjects is carefully preserved. It stands to reason that this important matter will best be understood by an all-round teacher. The teachers themselves will naturally need the instruction of the best specialists, who, however, should never overlook the pedagogical side of the work.

The present system, as understood by the committee, recognizes the need of regular instruction in physical training from the beginning of school life. To be of the greatest service it must begin early and be continued regularly each year to the end. Every year adds to its beneficial effects, both on body and mind, and it is not too much to say that it will have lasting influence on the health of the organism. Furthermore, we may look for the establishment of improved muscular coordination, which must result in more accurate and careful habits of mental action. It must not be forgotten that in as far as we are training the body to quick, active and regular responses, we are at the same time training the mind in a similar manner.

The Swedish system, as adapted for use in the schools, offers a great variety and diversity of exercises, and further enlivened with gymnastic games is unsurpassed for school work. But the committee wish especially to call attention to the need of apparatus in the higher grades of the work. The word "apparatus" formerly suggested many expensive appliances, but it is one of the very great advantages of the Swedish system that it requires comparatively little apparatus, and that of a simple and inexpensive character. Little by little the effort should be made to introduce some of this apparatus into the higher schools, until ultimately every boy and girl entering a high school can have the chance to make use of it. It is to be hoped, of course, that all new school buildings will have a large, well-ventilated and simply-finished hall for assembly purposes. In such a hall a few pieces of movable apparatus can be placed, occupying little room and not in any way detracting from its attractiveness. In the opinion of the committee, no better expenditure of money could be made for the health of the school children and for the promotion of the best interests of physical training than to introduce a few such pieces of Swedish apparatus into many of the present good-sized high or grammar school halls. The outlay in each school would be surprisingly small.

The Girls' Normal School may be especially mentioned as quite lacking in all facilities for teaching physical training. The girls at the school, who are to go out as teachers, and have had perhaps several years of special instruction, are here deprived of every opportunity for work, except on the most meagre scale. This is in every sense deplorable, for it disheartens, and in some cases interferes with the career of girls who might become valuable specialists, and it also reacts unfavorably on their physical health. For the good of the schools, the normal school should, above all others, contain a large, well-equipped gymnasium, where all the girls may receive thorough and full instruction. The normal school building appears to be quite unfitted for its present purposes, and the committee very much hope the city may speedily have a better one. It is pathetic and depressing to see such a fine body of young women working under such serious disadvantages.

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[1] Read before the Boston Society for Medical Improvement, October 18, 1897, by Dr. Channing, as Chairman of the Committee appointed in 1896.

In nearly all the schools visited the gymnastic work is done under serious disadvantages, both from the overcrowded condition of the schools and the narrow and contracted arrangement of the rooms and corridors in all of the old and some of the new buildings. The crowding of the school-rooms is shown by the very narrow aisles between the desks. Most of these were found to be not more than sixteen inches in width, and in a number of schools not more than fifteen inches. It is manifestly impossible for large grammar-school girls and boys to properly go through arm and leg movements which require plenty of room in such a limited space. It is difficult enough for small children, who require less room, but they can manage it after a fashion. In some schools with fairly ample corridors the pupils take some of their exercises in them, which is in every way to be commended, but unfortunately the corridors are too cramped in most of the schools to make this possible.

The committee would suggest the desirability of increasing the width of aisles in all grammar schools to an average of at least twenty inches, and more would be better. This could only be done by removing one row of desks, but it would seem desirable to do this whenever possible, not only to give more room for gymnastics, but also to promote better hygienic conditions. A smaller number of scholars in the school-rooms would be of very obvious advantage. In the primary schools a width of eighteen inches between the desks would be none too much.

The time allowed for gymnastics is at the present sixteen minutes daily. It is to be earnestly hoped that this length of time may in the future be considerably extended, so as to allow for a little work both in the morning and afternoon. It has been proved by Kraeplin and others that mental work is of a decidedly better character if there are periods of rest at certain intervals, and the committee believe that the school children would achieve better mental results if more frequent periods of physical activity could alternate with study periods. They would suggest the period for gymnastics be extended from sixteen to twenty minutes daily, the best use of this time to be arranged for by the director of physicial training.

The need of more school buildings must become apparent to any one who visits the Boston schools, and they should be urgently prayed for until the necessity for them is at least recognized. They need not be ornate or palatial, if only they contain large and well-ventilated rooms and ample corridors. Simple and not costly buildings would be of the greatest utility, if it were possible to erect such. In the meantime the committee would earnestly call attention to an adjunct of every good school, which may often be supplied with poor buildings. Cannot the city furnish grounds which may, for certain hours at least, be used by school children? A considerable part of their physical training can be given them in playgrounds.

Not to speak of outdoor gymnastic work, the number and variety of games, both for boys and girls, has largely increased during recent years. It would be of the greatest advantage if some plan could be thought out which would give all the children, at stated intervals, an opportunity to make use of playgrounds under proper supervision, as part of their regular school work. It would, of course, be most convenient to have these grounds adjacent to the school buildings, but where this is not possible the children could be sent to them at regular intervals.

SUMMARY.

To briefly recapitulate, the following are the chief points to which the committee take the liberty of directing attention:

(1) The broad, comprehensive, and scientific character of the present system of physical training.

(2) Its adaptability to the existing requirements of the school children.

(3) The interest shown by both teachers and pupils.

(4) The desirability of having all the teachers instructed in physical training, as on them depends the success of the work.

(5) The desirability of selecting special instructors in physical training from the regular school corps, rather than from specialists inexperienced in general school work.

(6) The desirability of selecting one teacher as a local representative of the department in each school to supervise and take the responsibility of making the gymnastics a success.

(7) The due recognition of the importance of progression in the work from the beginning to the end of school life.

(8) The Swedish system, with the addition of gymnastic games, is the best in regard to variety of exercises.

(9) The necessity of apparatus of a simple character in high schools, and also in grammar schools to a less extent, if the system is to be adequately applied.

(10) This apparatus can be placed in a hall without detracting from its attractiveness.

(11) The lack of all facilities for teaching physical training in the Girl's Normal School, which sends a poorer grade of teachers of this branch into the schools than would be otherwise necessary.

(12) The importance of obviating this defect by providing for the Normal School girls a well-equipped gymnasium.

(13) The narrow, contracted aisles in the school-rooms, which probably do not average over sixteen inches in width, not allowing sufficient room for gymnastic exercises.

(14) The desirability of increasing this width to twenty inches on the average, which could be done by lessening the number of pupils in the room, to their great benefit from a hygienic point of view.

(15) The shortness of the time now allowed for the gymnastic exercises, which is sixteen minutes.

(16) The importance of increasing it to at least twenty minutes daily.

(17) The urgent need of larger and better playgrounds. New buildings should have ample grounds, but where children are obliged to attend existing schools with inadequate yard space they should, under proper supervision, be regularly taken to large playgrounds, and there have opportunity for exercise.

The members of your committee, as well as representatives of the Boston Homeopathic Association, appeared in June last before the "Joint Committee on Examinations and Hygiene and Physical Training," of the Boston School Board, and discussed the suggestions set forth above, there being entire unanimity as to the wisdom, not only of the changes recommended but others brought out at the hearing, such as those in reference to military drill, for instance.

At the meeting of the Boston School Committee, June 8, 1897, the following report was received:

> The Joint Committee on Examinations and Hygiene and Physical Training, after hearing the petitions for an increased amount of physical training in the public schools, beg leave to submit the following brief report:
>
> As the city becomes more densely populated the opportunities for normal and healthy exercise by children become less and less. A generation ago the boys and girls in most parts of the city were within easy reach of open lots, or suburban spaces, where they could play active games; but with the growth of the city this is no longer true, and it has become necessary for the schools to supply a want unfelt in the past.
>
> The Swedish system of free movements in use in the primary schools is excellent as far as it goes, but it ought to be supplemented by a larger amount of physical training. This is still more necessary in the grammar schools, where the free movements alone are far from sufficient for the needs of the older children.
>
> The additional time required cannot wisely be taken from the hours now devoted to study either in the primary or grammar schools; for the period of study in American schools is already shorter than that in the schools of other highly civilized nations, and the progress of the children in education is less rapid. There seems to be no reason, however, why in schools that have two sessions a part or the whole of the twenty-minute recess may not be profitably used for a system of games or light gymnastic exercises conducted under the direction of the teacher. The mental relaxation and the active movement, which constitute the real value of the recess, would be quite as great as they are at present.
>
> Among the pupils in the high schools the need of physical culture is even greater. This is already supplied to some extent in the case of the girls by gymnastic exercises, which ought to be extended until in every high school there is a properly equipped gymnasium, and its use is a regular part of the curriculum. In the case of the boys the only physical exercise provided is that of military drill. Now it is the universal opinion of experts that the drill alone does not furnish the best kind of physical training; that it ought at least to be supplemented by regular compulsory work in a gymnasium. Such work might well be made preparatory to a somewhat abridged period of drill. A year, for example, might be devoted to it with great advantage, and every boy might be required to attain a certain standard of development before he is placed in the school regiment.

With a view to carrying out the suggestions embodied in this report the following order was adopted:

> *Ordered*, That the Board of Supervisors, together with the Director of Physical Training, be requested to prepare and put into operation a plan for giving effect to the recommendation of the foregoing report.

Your committee understand that this order has been interpreted in a scientific and progressive spirit, and improvements and changes have been made in the system of physical training in the Boston public schools which will tend to markedly develop it in the right direction. If the gain that has been gradually made can be firmly held, and progress slowly continued along the same lines, there is no question that in the end, the public-school children of Boston will have physical training of a kind which will make them stronger and healthier citizens.

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USE OF ANTITOXIN IN TWO CASES OF PUERPERAL SEPSIS.

BY LEONARD B. CLARK, M.D., WAVERLEY, MASS.

For the notes of these cases I am indebted to my friend, Dr. Allen Greenwood, of Waltham, who had them under his care during my illness.

Case I. Multipara. Former confinements normal except the one preceding, which was followed by some pelvic trouble that kept her in bed for a long period.

On the morning of February 11, 1897, she was delivered of a child weighing eight and one-half pounds, position O. L. A., no perineal laceration and but little flow.

She was seen on the mornings of the 12th and 13th, and found in a normal condition. Was not seen again until the evening of February 14th, when she was found to be in a high fever, but with a good pulse, and feeling well and strong. The nurse reported that the fever had developed the afternoon before, accompanied by a severe headache. The lochia were not offensive and there was no tenderness about the pelvic region. The uterus, however, was soft and poorly contracted. An intrauterine douche of corrosive, one to five thousand, was given, and the uterine cavity packed with iodoform gauze. Quinine was ordered in moderate doses.

February 15th. This morning the temperature had dropped to 101°, with a corresponding diminution of the pulse-rate.

February 16th. There still being considerable fever, the douche and packing was repeated.

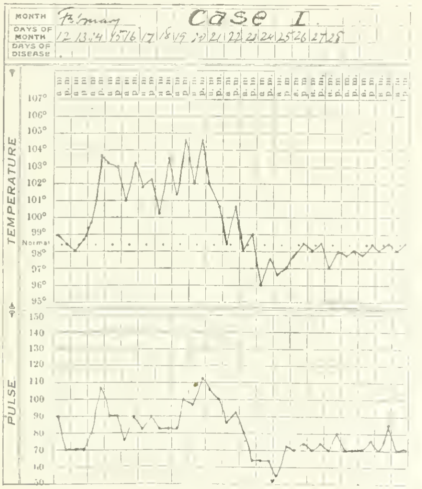
February 17th. Temperature down in A. M.; but in the P. M. it went up with a slight chill, and the patient began to show the effects of septic absorption in her facial appearance. The abdomen was much distended, and the bowels loose.

An intrauterine douche of peroxide of hydrogen and creolin was given, and an iodoform suppository and gauze packing inserted. Curetting the uterine cavity did not seem advisable on account of the extreme softening of the walls; then, too, several cases came to mind, where under similar conditions, the curette had been pushed through the uterine wall, causing severe peritonitis.

The treatment by intrauterine douches and application of iodoform suppositories and gauze was continued twice daily, with the free administration of quinine and brandy. In spite of this treatment the patient steadily grew worse until the evening of the 19th. She was then in a deplorable condition — delirious, with sighing respiration, cold hands and feet, pulse weak and compressible, and temperature

104.6°. An unfavorable prognosis was given to the family. Two bottles of antistreptococcus serum (Marmorek's, Pasteur Institute) were obtained from Boston, and the contents of both (20 c. c.) were immediately injected into the gluteal region.

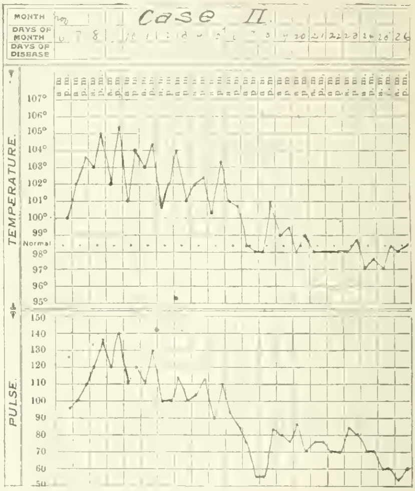
February 20th. This morning, fourteen hours after the use of the serum, although the temperature had only fallen to the point of the morning before, the change in the patient's condition was very striking. From a state of delirium and partial collapse, she had become rational, asked to see her baby, wished to nurse it, and said that she felt very much better. The dose of serum was repeated, and the next morning it was very gratifying to find a normal temperature, which, except for a slight rise that afternoon, remained at or below normal. The accompanying chart shows very well the fall in temperature from 104.6° to 98.8°, thirty-six hours after the first dose of serum was given. The change in the quality of the pulse was equally striking. A speedy convalescence followed, and it would seem that the saving of this patient's life was undoubtedly due to the timely use of the antistreptococcus serum.



Case II. Multipara. Previous confinements all normal. Easy labor, and child born at 2.30 A. M. of November 6, 1897. Very slight tear of perineum.

November 7th. This morning the patient was found with a temperature of 102°, but had had no chill, or other symptom of constitutional disturbance. In the afternoon the temperature was 103.6°. A vaginal examination showed the cervix to be covered with a thin, dirty yellowish membrane which extended up into the cervical canal. There was a profuse and foul discharge. The uterine cavity and vagina were douched with corrosive (1 to 3,000), and the uterus was carefully packed with iodoform gauze. It was then learned that two of the mother's children had been suffering with sore throats for about ten days, without being sick enough for the mother to feel it necessary to call the doctor. The patient's sister, acting as her nurse, and four-year-old child were also affected with sore throats. Cultures taken from the throats were found the next morning to be positive. A culture taken several days later from the patient's vagina was also found to contain the Klebs-Löffler bacillus and staphylococci. In the meantime the patient's two children were quarantined in the house, her sister and child were sent to the Waltham Hospital, and a trained nurse was placed in charge.

On the afternoon of the 8th, when it was apparent that the patient had been infected with diphtheritic bacilli, she was given an injection of 40 c. c. of the double antidiphtheritic and antistreptococcic serum of Gibier. At this time the temperature was 105°, and the pulse 136. The foul discharge was more abundant and contained shreds of membrane. The entire cervix, and also abraded perineum were found to be covered with membrane. The corrosive douche and packing of iodoform gauze were repeated.



November 9th. Morning temperature 102°. Patient seemed much better, discharge greatly diminished. In the afternoon, however, the temperature rose to 105.4°, and the pulse to 140. The local treatment was repeated, and 40 c.c. of the serum again injected.

November 10th. Morning temperature 101°. The patient felt and looked much better. In the afternoon the temperature did not rise quite as high as on the previous day. The local treatment was repeated. Quinine and whiskey were given in liberal doses, and the bowels were freely moved with salts.

November 11th. Morning temperature 103°. Local treatment repeated, much less membrane on the cervix, but sanguino purulent discharge from the uterus very profuse. In the afternoon, the temperature was 104.4° and the pulse 130. The patient was in a very weak, nervous condition, declared that she was going to die, and said "good-by" to her husband. It did not seem best to repeat the antitoxin, as the septic condition was apparently produced by the presence in the uterus of pathogenic organisms for which we had no antitoxin. In order to cleanse the uterine cavity as thoroughly as possible, it was washed out with peroxide of hydrogen, one to three of water, and over a quart was used. This was followed by corrosive (1 to 5,000), and then with sterilized water. Iodoform was freely sprinkled over the cervix and into the vagina.

November 12th. Much better in every way to-day.

November 13th. Temperature up again, but pulse remained good, and the patient seemed quite well. The peroxide and corrosive douche were repeated, and the membrane was found to have entirely disappeared.

November 14th. Very well.

November 15th. Slight exacerbation of temperature, but without depression.

November 17th. Temperature normal this morning.

November 18th. Temperature rose this afternoon, accompanied with pain in the shoulder and arms and a severe headache, with nausea and vomiting. This passed away during the next day; but the headache and pain continued with more or less severity for several days. With this exception the convalescence was uneventful, with a normal temperature.

How much the antitoxin had to do with the recovery of this case it is impossible to say, but these two cases are reported to add to the rapidly accumulating facts in regard to the use of the antitoxin serums, which seem destined to revolutionize the treatment of germ diseases by placing it upon a scientific basis.

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THE CLINICAL AND PATHOLOGICAL REPORT OF A CASE OF FRACTURE OF THE SPINE IN THE CERVICAL REGION, WITH SOME STATISTICS ON FRACTURES IN THIS REGION.[1]

BY J. W. COURTNEY, M.D.,
Assistant to the Physicians for Diseases of the Nervous System, Boston City Hospital.

My reasons for bringing the case I am about to report to your attention are twofold: first, because of the interesting pathological findings which were brought to light by the careful and exhaustive microscopic examination of Dr. J. J. Thomas, and, second, in order to bring about a discussion as to the general applicability of one of the diagnostic criteria which guided me in my attitude toward the case in point.

The patient was first seen by me, in consultation with Dr. R. W. Lovett, on October 2d of this year, at the Boston City Hospital, where he had been admitted with the diagnosis of fracture of the spine. The question was as to the justifiability of operative interference.

The complete history was as follows: The patient was forty-three years of age, single, and a sailor by occupation. His family history was unimportant. Previous history: Periodic excessive indulgence in alcohol; gonorrhea six or seven times; chancre two years previously, without secondaries.

Present illness. On the day before admission, at about five o'clock in the afternoon and seventeen hours before I saw him, he had, while drunk, fallen down a flight of twelve steps, striking on his back and shoulders. He was rendered unconscious by the fall and remained so for about half an hour. When he came to he could not move his lower extremities at all and his upper only partially. He had not passed his water up to the time of admission and the bladder was found much distended, requiring catheterization.

Examination showed a man muscular and well nourished. He was lying on his back with face flushed and somewhat cyanotic. Psyche clear. The pupils were small, regular and equal, and did not react to light or accommodation. The cranial nerves were not involved. The movements of the head were limited in all directions, owing in part to pain in neck and shoulders. There was no marked deformity in the spine, but I thought I detected an abnormal lateral mobility of a spinous process in the lower cervical region. To this, however, Dr. Lovett could not agree. In the upper extremities the only movements possible were elevation, depression and adduction of arms and flexion of forearms. The patient could not pronate or supinate forearm, move the wrist, adduct or abduct the fingers, and the grasp was *nil.* Fibrillary tremor was marked in the biceps on both sides. Breathing was almost wholly diaphragmatic. Heart sounds and area were apparently normal and the lungs thus far free. Pulse 60, respiration 25, temperature 97°. The lower extremities were completely paralyzed, the patellar reflexes entirely abolished, as likewise the superficial, except a slight plantar reaction on the right. Sensation was absent over the entire lower extremities and trunk up to a point corresponding to the upper border of the second rib in front. In the arms the anesthesia corresponded (as was shown by diagram) to the region supplied by the internal cutaneous and ulnar nerves.

As to the location of the greatest height of the cord lesion, the distribution of the paralysis and anesthesia in the arms was, of course, the index. It will be remembered that the patient's paralysis corresponded here to the lower arm type and hence involved no nerve which arises higher than the seventh cervical segment. The cutaneous disturbance corresponded to the area supplied by the ulnar and internal cutaneous, which take their origin from the seventh and eighth cervical and first dorsal nerves.

The contracted and fixed pupil also pointed to a disturbance at the level of the first dorsal nerve.

From the topographical relation of these nerves to the vertebræ I concluded that the mischief to the spine was, in its highest point, at the level of the spinous process of the sixth cervical vertebra, and from the condition of the spine — absence of marked deformity — that the lesion was more probably fracture than dislocation. Furthermore, from the absence of the knee-jerks I ventured the conclusion that the cord lesion was absolutely transverse, a deduction which put operative interference totally out of the question.

The next day (October 3d) the patient's condition was nearly the same except that temperature, pulse and respirations had risen. He required constant catheterization, and priapism was always noted at such times. He felt fairly comfortable and took some liquid nourishment.

October 4th. Pulse and temperature still going up. Patient soporous.

October 5th. Cyanosis of face deeper. General condition about the same. Pupils still small, equal and fixed. Paralysis, reflexes and anesthesia the same as before.

October 6th. Patient very soporous. Face perspiring. Coarse bubbling râles at both bases, especially at right. Breathing more and more difficult and entirely diaphragmatic. Slightly delirious in afternoon. Kept elevating and depressing arms as if to aid breathing.

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[1] Read before the Boston Medico-Psychological Society, November 18, 1897. To appear later in City Hospital Reports.

October 7th. Died, 12.10 A. M., about six days after onset.

The report of the autopsy, which was performed four days later by Dr. Mallory, enabled me to explain the mechanism of the damage to the cord. It read as follows:

Body that of a man fifty years old, 130 cm. long. Abdominal, pleural and pericardial cavities normal.

Heart. Weight 365 gm. Right side normal. Left side, wall somewhat thickened and left ventricle slightly dilated. Valves and cavities normal. Teased preparations show slight fatty changes.

Lungs. Both lungs very dark in color and very dense to touch. Bloody fluid could be squeezed from cut surface. There were also irregular, darkly mottled portions with hemorrhagic appearances.

Liver. Weight 480 gm. Pale in color and firm to touch. Lobulations not distinct.

Spleen. Weight 165 gm. Of ordinary size, dark-red in color. Malpighian bodies not distinct. Pulp not increased.

Kidneys. Weight 360 gm. Both were large and dark-red in color. Cortex not increased. On teasing, no fatty change.

Stomach and intestines normal.

Larynx, trachea and testicles normal.

Pancreas, adrenal glands, bladder and prostate normal.

Aorta showed slight yellowish areas.

Brain. Weight 1,190 gm. Normal.

Cord. Examination of spinal column from the anterior surface showed a transverse fracture of the body of the seventh cervical vertebra. On the left side there was slight hemorrhage in the tissues adjoining the body of the vertebra; only small fragments projected into the tissue. A small hole on the left side led down towards the spinal canal. On examination of the vertebral column from the back, quite a little hemorrhage was found in the muscles surrounding the lower cervical vertebræ. The posterior portion of the arches of the sixth and seventh were broken into several pieces, and projecting into the adjoining muscles, which had been lacerated by them. On the posterior surface of the dura, beneath the posterior arch of the seventh cervical vertebra, and, to a less extent, beneath that of the sixth, was a small amount of dark reddish coagulated blood. On opening into the cord no sign of hemorrhage was found within the dura. The blood-vessels on the surface of the cord were injected. Although the cord was partially frozen, and small spiculæ of ice lay within the spinal canal, very distinct softening of the cord opposite the point where the sixth cervical nerve was given off could be felt.

Anatomical Diagnosis: Hypertrophy of left ventricle, hemorrhage in lungs, slight arterio-sclerosis, fracture of the sixth and seventh cervical vertebræ, softening of cervical cord opposite the sixth nerve.

Cultures: Heart, kidney, liver and spleen sterile.

The sixth segment of the cord, it will appear from these findings, owed its softening in all probability to the jamming upwards and forwards of the fragments of the broken arch of the sixth vertebra, which were immediately retracted by their ligamentous and muscular attachments. In this connection the absence of pressure from bony fragments, and of dislocation or any great amount of intra- or extra-dural hemorrhage is significant when viewed from an operative standpoint.

What remained to be cleared up was the absence of any symptoms, clinically, referable to the sixth nerve, which ought from the seat of this intense softening in the sixth segment to have been involved. On this point Dr. Thomas's findings were important.

The cord was removed and hardened by him in a ten-per-cent solution of formalin. Sections were made, first, at the point of greatest softening, that is, at the sixth cervical segment; again at the level of the second cervical segment, at the sixth dorsal segment, and at the second lumbar segment. The stains used were hematoxylin and eosin; Van Gieson's picric acid and acid fuchsin stain for the central nervous system; eosin and Unna's alkaline methylene-blue stain; and Marchi's method.

The section at the level of the sixth cervical segment showed no changes in the nerve roots, either anterior or posterior. The pia was slightly thickened; and in one point near the point of exit of an anterior nerve root there was an area infiltrated with small round lymphoid cells, with round deeply-stained nuclei, surrounded by a narrow zone of clear protoplasm. There were also occasional leucocytes, and larger cells with irregular nuclei not staining deeply, with more protoplasm surrounding the nuclei, the protoplasm having a faint bluish tinge in the section stained with alkaline methylene-blue. Occasional red blood globules were found in this region. In the white matter of the cord at this level the small blood-vessels were filled with red blood globules and some of them were widely dilated. About many of them there was a small infiltration of lymphoid cells and leucocytes. Throughout the white matter there were scattered red blood globules and in various places there were numerous larger and smaller hemorrhages, some near small blood-vessels and some at a distance from any blood-vessel. Scattered throughout the white substance also, but more numerous at the periphery of the cord, about the blood-vessels and in the neighborhood of the small hemorrhages, there were numbers of large cells from two to eight times the size of a leucocyte. These cells had moderately large, irregular, granular nuclei, not staining deeply. Some of the cells contained two nuclei and in others the nucleus was in two parts connected by a rather thin band. The protoplasm of these cells was finely or coarsely granular.

In the sections stained according to Marchi's method it was seen that many of these cells contained fat globules of various sizes. Other cells showed the granular appearance, but the granules were not stained by the osmic acid. Occasionally a red blood-corpuscle was seen enclosed in one of these large leucoytes. The nerve structure of the white substance of the cord were separated by the hemorrhage and the exudation into it, but looked fairly normal. In the sections stained by Marchi's method, however, it was seen that in many cases the axis cylinder was replaced by a round globule of fat and often the myelin sheath had also undergone fatty degeneration and only a large black mass could be seen. In others the axis cylinder has disappeared and the myelin sheath was represented by a complete, or broken ring of fat. These changes were about equally well marked in all parts of the white substance. Throughout this part of the cord were rounded, irregular, sometimes elongated masses, staining homogeneously with the hematoxylin and eosin stain, which were apparently masses of myelin, and some of the large leucocytes contained these same homogeneously stained masses.

In the gray matter of the cord much the same condition was found, except that here the hemorrhages were more numerous and larger and the amount of exudation greater. The large phagocytic leucocytes were also quite numerous throughout this area, more especially in the anterior horns, and rather less in the posterior horns. The irregular masses and the bands of myelin were present also, chiefly in the anterior horns.

The large ganglion cells of the anterior horns had retained their shape fairly well, in some instances remarkably so. The nucleolus, however, showed only as a slightly more darkly staining body within the cell, and almost without exception the cells showed more or less fatty degeneration. In some cells there were a few scattered fat globules, in others the whole cell body appeared filled with the small black granules. In other cells where black granules were massed in only one part of the cell they were probably in part, or mostly, the pigment granules of the cell. The fat globules in the large leucocytes in the gray matter of the cord seemed rather greater in number than in those in the white substance. The bands and irregular masses of protoplasm also showed in places the presence of fatty degeneration.

The sections at the level of the second cervical segment showed very slight changes. In one, in the white substance, just at the border of the lateral horn of gray matter, there was a small hemorrhage. There was, also, all through the white substance of the cord a slight degeneration of the nerve fibres shown by the replacing of the axis cylinder or of the myelin sheath by fat, while many of the nerve fibres were much swollen. This was seen in all parts of the white matter, but was greatest in the crossed pyramidal tracts and the posterior tracts. The large nerve cells of the anterior horns contained rather an unusually large amount of pigment and occasionally the nucleolus and protoplasmic granules stained fairly, but in most of the cells these substances appeared normal. The membranes and nerve roots showed no changes.

The sections from the dorsal region of the cord showed much the same condition as that found in the upper cervical region. Considerable numbers of nerve fibres in the white substance were degenerated, the axis cylinder or myelin sheath being replaced by fat. Swollen fibres were also present in moderate numbers. Here, again, the changes were most marked in the crossed pyramidal tract and the posterior columns. The nerve cells of the anterior horn in sections stained by Marchi's method showed numerous black granules, some of the cells being completely filled with them. In other cells they were massed together in one part of the cell only. These granules were probably in part the pigment granules of the cell and in part globules of fat. In these cells, also, as in those of the upper cervical cord, the nucleolus and protoplasmic granules were usually distinct, but in some they stained very faintly with the alkaline methylene-blue stain. In the anterior nerve roots there were a few fatty degenerated nerve fibres.

In the lumbar region of the cord there was the same diffuse degeneration of nerve fibres in the white substance, and quite numerous large, swollen nerve fibres. The changes again were most marked in the lateral pyramidal and posterior tracts of the cord. The changes here were, if any thing, more marked than in the dorsal cord. The anterior nerve roots showed a few degenerated nerve fibres, and the nerve cells of the anterior horn showed changes similar to those found in the dorsal cord. Many of the cells were completely filled with small black granules.

Diagnosis: Hemorrhage and acute degeneration at the level of the sixth cervical segment of spinal cord. Acute diffuse degeneration of nerve fibres of lateral pyramidal tract and of posterior columns. Slight acute degeneration of ganglion cells of anterior horns of dorsal and lumbar regions of cord and of anterior nerve roots of these regions.

There are many interesting features in connection with these findings, notably the complete transverse character of the lesion in the sixth cervical segment, with escape of the sixth nerves. Of great practical significance in connection with operation are the intense secondary degenerative changes which had taken place throughout the cord in less than six days, and, finally, of physiological interest is the descending degeneration which was noted in the posterior columns.

This latter condition is now a matter of fairly common observation and various hypotheses have been put forward to account for its existence, but none of them is satisfactory.

Bruns [2] considers it to be a degeneration of the so-called descending fibres of the posterior roots, and quotes Marie as his authority.

Tooth [3] has shown that cutting of the posterior nerve roots alone does not produce this descending degeneration and that the latter extends lower than the descending collaterals of the posterior roots.

In support of Tooth's views stand those of Gombault [4] and Philippe, who in one case by destruction of the posterior roots alone got no descending degeneration, and in another by total cross-section of the cord succeeded in getting it. They concluded, however, that they were dealing with commisural fibres of no great length.

From this last conclusion Egger [5] dissents, because in a case of complete transverse destruction of the cord from fracture in the upper dorsal region he found extensive secondary degeneration in the posterior columns both horizontally and *vertically*.

As a possible explanation of the phenomenon I offer the following: Bruns [6] noted in his case that the lateral pyramidal tracts directly under the lesion were strikingly normal, whereas, low down in the cord they were much degenerated, and in explanation of this he says that degeneration begins first in the most distal portion of a cut nerve and reaches the end nearest the lesion last of all. In our case Dr. Thomas noted that the changes in both the pyramidal tracts and posterior columns were, if anything, more marked in the lumbar region than in the dorsal, a circumstance which not only supports Bruns's theory as regards the modus operandi of pyramidal degeneration, but allows the inference that the same theory may hold good for the posterior column and that the paradox of *descending* degeneration of this column is merely apparent and not real. I do not, however, insist on this point.

To return once more to the clinical side of the case. Does the absence of the knee-jerk in fractures of the cervical and — for that matter — of the upper dorsal spine signify a total transverse lesion of the cord?

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[2] L. Bruns: Ueber einen Fall totaler traumatischer Zerstörung des Ruckenmarkes an der Grenze zwischen – Hals und Dorsalmark. Archiv. für Psychiatrie und Nervenkrankheiten, Band xxv, s. 808.

[3] Tooth: Secondary Degeneration of the Spinal Cord, London, 1889.

[4] Gombault and Philippe: Contribution à l'étude des lésions systématisées dans les cordons blancs de la moelle épinière. Archives de médecine expérimentale, No. 3, 1894.

[5] F. Egger: Ueber totale Compression des oberen Dorsalmarkes. Archiv. für Psychiatrie und Nervenkrankheiten, Band xxvii, s. 129.

[6] L. Bruns: same reference as Note 2.

This is a question which has engaged the attention of all observers since Bastian[7] made special mention of the subject in 1882. Bastian was not, however, according to Egger,[8] the first to call attention to the phenomenon, although he was probably the first to attempt an explanation of it. Kadner,[9] in 1876, published a case of carcinoma of the first four dorsal vertebræ in which the patellar reflexes were lost and remained so until death occurred, nineteen days after the complete establishment of paraplegia. The pathological examination showed complete atrophy of the cord at the height of the second dorsal vertebra. The same author observed the absence of the knee-jerk in a second case also, which was one of fracture, but referred to it only briefly, stating that it was opposed to the results obtained experimentally on animals.

Bastian's explanation that it is due to the cutting off of the paths from the cerebellum, namely, the direct cerebellar tracts, which have to do with the maintenance of muscle tonus, has received support from such observers as have noted the absence of the knee-jerks in cerebellar tumors. The opponents of this theory point out its untenability on the ground that there are no descending fibres from the cerebellum to the cord. Oppenheim[10] came out very strongly in 1894 with the statement that the absence of the knee-jerk had never been observed by him in uncomplicated cerebellar tumor and that it meant a coexisting disease of the posterior columns of the cord. He further[11] very pointedly recommends future investigators to examine the cord as well as the brain in those cases of cerebellar tumor where the phenomenon of absent knee-jerk is observed clinically.

Sternberg[12] offers the hypothesis of an inhibitory influence which starts from the point of lesion and acts upon the centres below. It requires, however, as Egger[13] justly says, a considerable effort of the imagination to understand how this vague inhibiting power can be active for any great length of time.

Shock has also been offered as an explanation. To this Egger again objects, on the ground that the clinical picture of shock is too characteristic and its duration too definite to attempt to make the phenomenon in question a part. In connection with this I might add that in one case of fracture which I obtained from the hospital records in which a severe lesion to the cord was undoubtedly present, the knee-jerks were noted as present during the first twenty-four hours (period of greatest shock) after the injury and later as absent.

Whatever the explanation of the matter may be, it suffices to say that there are now on record a fairly large number of carefully observed cases in which the absence of the knee-jerk has been noted in total transverse lesions of the cervical and upper dorsal cord. In only 13 out of 50 cases of fracture in the cervical region of the spine whose reports I examined in the City Hospital Records was the condition of the reflexes noted, but in all thirteen there was complete absence of the knee-jerk — once with preservation of slight cremasteric reflex and once with slight plantar. In my own case the plantar reflex was present slightly on the right.

In concluding this portion of the paper, I will simply say that I draw no sharp general conclusions from the behavior of the knee-jerks in my case, but simply adduce the observation as so much positive evidence and leave the matter open for discussion.

As to the general subject of fractures in the cervical region of the spine, the following facts elicited by an examination of the records of the City Hospital need no comment.

Of the 158 cases of fracture of the spine admitted to the hospital from January, 1881, to May, 1897, 50 were in the cervical region, and of these fifty all died. I have classified them as to topograpical distribution and to duration of life after accident as follows:

Upper cervical region, 1 case. Duration, 24 hours.
Mid-cervical region, 9 cases. Duration from few hours to one day. Average duration, 18 hours.
Lower cervical region 40 cases. Duration from few hours to one month. Average duration, 5 days.

In 23 cases there was no deformity or crepitus. In 15 these were not mentioned. Deformity when present was usually in the nature of slight depression and abnormal mobility. Crepitus was noted only three or four times. Tenderness over the injured area of the spine was, on the contrary, a common observation.

Five cases were operated. In none were the fragments found to be pressing on the cord. In two there was special mention made of the fact that no extra- or intra-dural hemorrhage was manifest. One case died on the table, and one in forty-eight hours.

Only three autopsies appear in the records. The first stated that the cord was softened and red, and that the fractured vertebra was not pressing upon it. No extra- or intra-dural hemorrhage was found. The second autopsy showed slight anterior displacement of fractured vertebra and only a moderate amount of blood outside and within dura. Complete disintegration of cord at point opposite fracture. Fragments not pressing on cord. The third autopsy showed fracture of the spinous process of the sixth cervical vertebra, with separation between this process and that of the fifth admitting tip of little finger. There was also a displacement of the fifth cervical vertebra forward to the extent of nearly one-quarter of an inch. In the spinal canal within this lesion the dura was reddened, but there was no free blood either outside or inside the meninges. In immediate relation with the vertebral injury the cord showed an area of softening through one-half an inch of its length and involving its entire thickness. The cord was at this point of the consistency and color of thick cream. There was no hemorrhagic appearance.

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[7] H. C. Bastian, in Quain's Dictionary of Medicine, 1882, p. 1480, Also later article, On the Symptomatology of Total Transverse Lesions of the Spinal Cord, with Special Reference to the Condition of the Various Reflexes. Medico-Chirurgical Transactions, London, 1890, p. 150, et seq.

[8] F. Egger: Ueber totale Compression des oberen Dorsalmarkes. Archiv. fur Psychiatrie und Nervenkrankheiten, Band xxvii, s. 129.

[9] Kadner: Zur Causistik der Rückenmarkscompression. Wagner's Archiv der Heilkunde, 1876.

[10] H. Oppenheim: Sitzungsbericht der Berliner Gesellschaft für Psychiatrie und Nervenkrankheiten. Neurol. Centralbl., 1891, No. 1.

[11] Same author, Die Geschwülste des Gehirns. Wien, 1896.

[12] M. Sternberg: Die Reflexe und ihre Bedeutung für die Pathologie des Nervensystems. 1893.

[13] F. Egger: Ueber totale Compression des oberen Dorsalmarkes. Archiv. für Psychiatrie und Nervenkrankheiten, Band xxvii, s. 129.

A HEALTHY LOCALITY. — Friendsville, a little village in the Pennsylvania mountains, is remarkable for the longevity of its inhabitants. The town contains 135 inhabitants, of whom 27 have passed the age of ninety.

Clinical Department.

THREE CASES OF TRANSVERSE FRACTURE OF THE PATELLA TREATED BY WIRING: RECOVERY, WITH EXCELLENT RESULT IN EACH CASE.

BY J. V. MEIGS, M.D., LOWELL, MASS.,
Surgeon to St. John's Hospital.

In the *Boston Medical and Surgical Journal* of the issue of December 16, 1897, there appeared an interesting editorial on the "Treatment of Fracture of the Patella." Strange to say, the notes of three cases have been lying upon my desk, cases occurring during my service at St. John's Hospital in the year 1896, which I was intending to report at some future day. These cases have been to me interesting. I was first led to treat these fractures by wiring from observation of a case seen in consultation.

A man, although strongly advised by his attending surgeon and myself to submit to operation, refused, necessitating its dressing in the old way — elevation, straps and figure-of-eight bandage. This case was a very difficult one to hold; in fact, it was out of the question, on account of swelling and pain, to even approximate coaptation of the fragments. The dressings had to be changed, frequently tightened, then loosened, and then tightened again. The result in this case (and I very carefully watched it) was not good, yet it was as good, if not better, than many others which I have seen treated in the same manner. In this case the union, fibrous or otherwise, which he got was slow, the patient being confined to his bed for six or seven weeks. His position in bed uncomfortable, sufferings excruciating, both from his position and the form of dressing used. After getting up from his bed it was five and one-half months before he was able to attend to his work. Then there is a separation of nearly one inch between the fragments, and while not lame, yet he has a limb that he cannot use as he did before. This case I watched carefully, and made up my mind, from its progress and from its result, that the next case I had with this fracture I would strongly advise wiring. I have wired three, as will be seen below, with excellent results. All three of my cases were young adults in good health and of good habits.

Case I. J. M., aged twenty-three years, and a laborer by occupation, fell some little distance April 10, 1896, striking upon the right knee. He was carried to St. John's Hospital, carefully examined, and found to be suffering from a transverse fracture of the right patella. The knee was enormously swollen and exquisitely sensitive. His leg was elevated and ice-bags placed upon the knee as preliminary treatment until April 17, 1896. On this day, the swelling having considerably abated, he was placed upon the operating-table, ether administered, and under the most strict asepsis a transverse incision was made over the patella, which was found to be fractured transversely into two fragments, the upper being quite a great deal the larger of the two. The joint was full of clotted blood, which was removed, the joint carefully washed out with sterile water and the edges of the fragments freshened by the use of a chisel; two holes were then drilled obliquely in each fragment,[1] care being taken not to go through the cartilage; silver wire, one-sixteenth of an inch in thickness, was then introduced, joint again carefully flushed, fragments brought together and wire twisted with several twists and hammered flat. Capsular ligament of the knee was then carefully united over the patella by a continuous suture (Leaven's No. 1 chromicized catgut being used). Skin then united by a running silk suture, sterile dressing applied, and leg placed upon a long posterior splint and elevated a little. This patient made an uneventful recovery. At the end of two weeks the stitches were removed, the wound having healed by first intention, and the leg again dressed as before. At the end of the next two weeks, or four weeks after the operation, the splint was removed and the result found to be perfect. A plaster-of-Paris bandage was now placed about the knee, and patient given crutches. After two more weeks, or six weeks after operation, patient was discharged well. He could bend the knee with ease and perfectly, could kneel without much pain and with little inconvenience, and could walk without a limp.

Case II. C. G., age nineteen, health and habits good, and a farmer by occupation, was admitted to St. John's Hospital May 12, 1896, suffering from a fractured patella. Upon inquiry the following history was elicited: March 14, 1896, while engaged in his work, he fell, striking on his right knee-cap. He was unable to get up, and was carried by the ambulance to St. John's Hospital. He came under the care of Dr. J. Arthur Gage, who made a diagnosis of transverse fracture of the patella, and advised wiring. This was done on March 15, 1896, by Dr. Gage, with a happy and perfect result. He was discharged April 27, 1896. After his discharge he immediately went to his work, and all went on well until May 12, 1896, when in jumping from a wagon to the ground he again fractured the same patella. He immediately returned to the hospital, where on May 13, 1896, I opened up his knee-joint by a vertical incision on the line of the scar of the previous operation. On getting down to the patella I found the bone broken transversely into two fragments, the wires broken next to the knots, the fragments wide apart, and the space between them and the whole knee-joint filled with blood-clot. I removed the broken wire, cleaned out the joint and examined the fragments carefully.

There is no doubt whatever but that bony union, although somewhat feeble, had taken place, and that his fall had torn the fragments rudely apart. I freshened the edges of the fragments, made new drill holes, re-wired and closed as in the above case. The dressing applied was the same as in Case I. This patient made an uninterrupted recovery, and was discharged July 3, 1896, with a perfect union and with a limb almost as useful as it was before his first fracture.

Case III. J. S., a laborer, aged thirty-one, admitted to St. John's Hospital August 17, 1896. On admission we got the following history: He had suffered a fall, striking his right knee against a curbing. His knee was greatly swollen, discolored and exceedingly painful. At the time of his admission I did not think it wise to operate at once; so he was put to bed, leg elevated and ice-bags applied to the knee. September 1, 1896, I operated, making a transverse incision, and carrying out the details as in the two previous cases. Patient made a perfect recovery, and was discharged from the hospital, October 17, 1896, without deformity, without lameness and in excellent condition.

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[1] In drilling the holes I have made use of an ordinary metal-handled awl, such as can be purchased of any hardware dealer at a cost of twenty-five cents. The drills made for surgical use are extremely difficult of management, unwieldly, liable to break and cause annoyance.

Under strict aseptic precautions, given a young, healthy patient of good habits, I do not think I should hesitate a moment in deciding to operate. With operation the results are better, convalescence speedier, patient more comfortable; and the surgeon is saved from much condemnation.

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A CASE OF TRANSPOSITION OF THE VISCERA.

BY H. F. VICKERY, M.D., BOSTON.

March 25, 1896, Mr. W. C. T., twenty-seven years old, a clerk in Boston, was sent to me by Dr. J. E. Clark, of Medford. The family history was excellent. With regard to the previous health, it was stated that he had pneumonia when one year old, and also certain children's diseases, but recovered well from all of these. Two years before he visited me, having a slight cold he presented himself to Dr. Clark, who found the condition about to be reported. With regard to his present health, Mr. T. said that it was excellent, and that he had very little, if any, dyspnea. For instance, he could climb two or three flights of stairs without discomfort. He did say, however, that he found running to "hare and hounds" trying, which would hardly be regarded as proof of unusual shortness of breath. Otherwise there were no symptoms of disease. The reason of his coming was that he desired to have more than one doctor to support him in an application for life insurance, fearing that otherwise he might be unjustly rejected.

The result of the physical examination was that the heart, liver and spleen were found to be transposed from their normal positions to the opposite side of the body respectively. On inflation, the stomach was also found lying toward the right side instead of the left side; and air injected per anum distended the colon on the right, as if the descending colon were upon that side.

A year later, the fluorescope having come into use, the patient was examined with the x-ray, through the courtesy of Mr. Dodd, at the Massachusetts General Hospital, and the heart was seen lying upon the right side, and the great shadow of the liver was seen upon the left side; otherwise the fluorescope showed nothing distinctly. The measurements of the limbs were as follows: right arm, at the belly of the biceps, 9½ inches; left arm, 9 inches; right leg, 17½ inches; left leg, 17 inches. The left testicle, as in other men, hung lower than the right, and the patient was right handed.

It may be said, in conclusion, that Mr. T. obtained life insurance without any difficulty. The only chance for doubt as to the correctness of the opinion that this is a case of transposition of the viscera might be raised by the statement that he had pneumonia when he was a year old. It might be objected that this was perhaps a pleurisy which on recovery had drawn the heart over to the right side; but the patient, as above stated, had very little, if any, dyspnea. The function of both lungs was found to be excellent upon examination; and furthermore such an hypothesis could not account at all for the position of the abdominal organs, which seemed to be very clearly transposed, as well as the thoracic.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WILLIAM D. HALL, M.D., BOSTON.

(Continued from No. 1, p. 14.)

CONJUNCTIVITIS BOTRYOMYCOSA.

Faber[12] noticed between the swollen papillæ of an intensely inflamed conjunctiva of a farm-hand some small grayish granules, which were found to contain small corpuscles arranged in longish clusters, which microscopically were proven to be botryomyces, a fungus resembling actinomyces and which up to this time has been found only in the horse.

CLASSIFICATION OF INFECTIOUS CONJUNCTIVAL DISEASES.

Coppez[13] compares the ancient classification resting upon anatomy and symptomatology with the more modern, having for a basis etiological and bacteriological data. He mentions

(1) Gonococcus as causing (*a*) classical purulent; (*b*) catarrhal; (*c*) granular; (*d*) pseudo membranous.

(2) Bacillus of Weeks: (*a*) classical catarrhal; (*b*) pseudo-membranous.

(3) Pneumococci: (*a*) catarrhal; (*b*) phlyctenular; (*c*) purulent; (*d*) granular; (*e*) pseudo membranous.

(4) Staphylococci: (*a*) catarrhal; (*b*) purulent; (*c*) phlyctenular; (*d*) pseudo-membranous.

(5) Streptococci: (*a*) catarrhal; (*b*) purulent; (*c*) with glands.

(6) Klebs-Löffler: (*a*) classical catarrhal; (*b*) pseudo-membranous.

He advocates a purely etiological classification, as offering advantages of prophylaxis and the application of serum therapy, but recognizes the difficulties in application.

For a purely anatomical classification he offers

(1) Catarrhal: gonococcus, diplo-bacillus, staphylococcus, streptococcus, pneumococcus, Klebs-Löffler.

(2) Purulent: gono-staphylo-strepto-pneumococci.

(3) Granular: gono-pneumococci.

(4) Phlyctenular: pneumo-staphylococci.

(5) Pseudo membranous: gono-staphylo-strepto-pneumococci, bacillus of Löffler and Weeks.

At present the older classification is rather better as the bacteriological data may be joined in each case.

THE PATHOGENY OF GLAUCOMA.

Sulzer[14] interprets the appearances of the fundus in one case which he was able to examine eight days after the sudden onset of glaucoma fulminans, as denoting a complete arrest of the retinal circulation. Although he admits that a glaucomatous attack as a sequel to an embolus of the central artery or an attack of glaucoma occurring synchronous with an embolus would present a similar complex, still he considers, as increased intra-ocular tension always retards or stops the current of blood in the retina, that in this particular case there is to be admitted a relation between cause and effect. Insomuch as Ludwig has demonstrated that the pressure of the saliva in the excretory ducts can exceed the pressure of the artery which supplies the gland, it is possible to imagine the intra-ocular pressure exceeding the arterial pressure of the retinal vessels, on account of the influence exerted upon the vessels of the ciliary body by the secretory fibres of the first branch of the third.

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[12] Conjunctivitis botryomycosa, Rep. Soc. Néerlandaise d'Ophtal, December, 1896.

[13] Essai de classification des conjonctivites infectieuse, Rep. Soc. Belg. d'Ophtal., December, 1896.

[14] The Pathogeny of Glaucoma, Ann. d'Ocul., February, 1897.

He would classify glaucoma according to predisposing causes as circulatory, vascular and nervous, all being related by vascular degeneration, primative in the second, and secondary in the other two, where it depends upon interference with the arterial circulation produced in the first class by interruption of the equilibrium between the intra-ocular tension and the arterial tension and in the third class by nervous influence. The disturbances circulatory, degenerative and nervous are interdependent both producing and reinforcing one another. The circulatory disturbance plays the most important part in all the varieties. The excavation he does not consider to be a mechanical result of the increased tension but is produced principally by a partial degeneration of the myeline fibres of the papilla, upon which degeneration depends the paralysis of the corresponding peripheral elements of the retina, produced in turn by the retardation of the circulation and secondarily by insufficient nutrition of the tissue of the papilla depending equally upon the insufficient arterial supply. Thus weakened the papilla can yield still more to the increased tension.

INFANTILE GLAUCOMA.

Gros [15] finds the condition to be characterized by increased tension, distention of the globe and excavation of the papilla; sometimes also hypermetropia. The course may stop spontaneously with preservation of some vision. The cause is uncertain although heredity may play an important part. This symptom complex may be supposed to depend upon some obstruction of the canals of excretion or to an arrest in the development of these canals and this is why the obliteration of the angle is not constant. Excavation is very frequent but atrophy only appears at a late stage. The prognosis is grave and interference by operation should be early, which may be either an iridectomy or a sclerotomy. The larger the globe, the smaller the incision and, in case there is much distension, an iridectomy is contraindicated.

RESECTION OF THE CERVICAL SYMPATHETIC.

Jonnesco's paper [16] is a description of five of the six cases in which he has practised a total and bilateral resection of the cervical sympathetic, twice being for exophthalmic goitre, twice for epilepsy and once for chorea with epilepsy. He was induced to attempt this intervention in the first place by the attempts of others in this direction. In 1889 Alexander did bilateral and complete resection of the superior cervical ganglion; Kummel has done unilateral resection of the same; Vaeksh ligated *en masse* the vertebral artery and vein before their entry into the bony canal in order to tie the sympathetic vertebral plexus which accompanies them, and section of the trunk of the sympathetic beyond the superior ganglion. Bogdanik in 1893 resected the middle cervical ganglion, or if this failed the excision of that part of the trunk of the sympathetic found at the habitual seat of the ganglion. Jaboulay, in 1895, practised section of the cervical sympathetic in an epileptic to modify the cerebral circulation, and in 1896 isolation of the middle cervical ganglion by cutting four or five efferent branches, then he cut the trunk of the sympathetic below the ganglion to the right and left. It was suggested in the second place by the lesions of the sympathetic found in epileptics (hyperemia), likewise found in Basedow's disease. As a cause of this latter disease autopsies have shown lesions affecting the nerve trunk and the ganglions, preferably the inferior and middle, consisting of atrophy of the nerve cells. The unsatisfactory results from these attempts and the sufficiently constant lesions have suggested to him the more radical operation. Then follows a very complete description of the various steps of the operation and a short *résumé* of the five cases. He summarizes as follows: total and bilateral resection of the cervical sympathetic can be undertaken without fear of ultimate disturbance; the operation is not difficult, and can be supplemented by ligature of the thyroids.

REMOVAL OF THE THYROID.

In the discussion which followed the report of a fatal case by Lejars, Tillaux [17] advised operating only when the symptoms were due to a tumor included in the gland, and then to leave the gland as much as possible intact, thus avoiding myxedema, while Poncet, on account of the danger of the operation, is in favor of nerve and ganglion resection.

ACTION OF LIGHT UPON THE RETINA.

The experiments of Pergen [18] were made upon fishes, a part of which were decapitated in darkness after having remained in this condition for forty-eight hours; the others were decapitated after exposure to daylight for some time. Immersion in five-per-cent. nitric acid then followed for twenty-four hours.

The results obtained may be summarized as follows: in the dark the retina is thicker than in the light as a result of the extension of the rods and cones, and on account of the migration of the pigment from the epithelium. Under the influence of light the distal part of the epithelium approaches the external limiting membrane, the rods and cones contracting. In the light the nuclein of the nuclei diminished in all the layers except the molecular. In darkness a portion of the protoplasm which surrounds the nuclei of the rods and cones passes across the external limiting membrane, which re-enters under the influence of light when the nuclein diminishes. The external granular layer may be considered as constituting a reserve of protoplasm and nuclein bearing direct relation to the functioning of the rods and cones. Their contraction is immediate, the migration of the pigment is slower.

In a second series, in which the fishes had remained in the dark and were then exposed to the spectrum, it was found that the migration is less in the red but more in the blue. The contraction is stronger in the green and feebler in the blue. The migration and the contraction is the same in both if only one is irritated, while, on the contrary, the diminution of nuclein seems to take place independently in each eye. No color affects the cones to the exclusion of the rods or *vice versa*, as regards the nuclein. The same elements perceive all colors, contrary to the classical theories demanding three sets of fibres. At the time of the diminution of nuclein the protoplasm becomes less affected by basic colors. In the light of present knowledge the retinal sensation of color may be considered as a complex of phenomena, of which the migration of pigment, the alterations of erythropsine, the contraction of the rods and cones, the diminution of the nuclein and the modifications in the protoplasm are the more easily demonstrable. The diminution of the nuclein, being principally noticed in nuclei of the rods and cones, offers a new proof of the localization of perception of light and color in these elements. The appearances in a fish exposed to the Röntgen rays for a half-hour were negative; the same as in total darkness.

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[15] Etude sur l'hydrophtalmie ou glaucome infantile, Paris, 1897.

[16] La Resection totale et bilateral du sympathique cervical, Ann. d'Oc., March, 1897.

[17] Removal of the Thyroid for Exophthalmic Goitre, Ann. d'Oc., March, 1897.

[18] Action de la Lumiere sur la Retine, Annales de la Soc. Royale de Sci. de Brux, 1896.

CORNEAL CHANGES IN DIPHTHERIA.

Coppez[19] states that the loss of the cornea in conjunctivitis with membrane has long been considered to be due to necrosis. Sourdille has maintained that through a solution of continuity, as, for example, an ulcer, the microbes obtain an entrance, multiply and cause destruction of tissue. Lack of nutrition when the membrane has reached the limbus can also prove fatal. In slight and purely tarsal forms something else is necessary. The toxin can penetrate and alter the nutrition of the membrane. This can take place either by the lymphatic channels or through the eroded surface or by dialysis in the presence of a scar. Although it is not known whether the antitoxin acts chemically or through the agency of the cells, he suggests introduction of it beneath the conjunctiva of the bulb, and supports his claim by deductions from experiments upon animals.

MENINGITIS FOLLOWING ENUCLEATION.

Lapersonne[20] calls attention to the frequency with which the pneumococci are found about the eye when in a state of inflammation, and describes an acute basal meningitis following enucleation in which the infection was propagated along the lymph channels of the nerve sheath. Insomuch as the antiseptic agents at hand do not attack the capsule, he advises a preliminary use of some alkaline substance which will dissolve this capsule, and considers a sterilized solution of purified hypochlorite of lime as being most suitable, as it is also well borne by the conjunctiva.

CILIARY BODY EXTRACT.

Dor[21] describes a severe case of sympathetic ophthalmia, which, in spite of enucleation of the other eye and a prolonged and energetic treatment, went on to almost total blindness. The globe was highly injected and painful and notably diminished in volume. After a two months' course of injections and instillations of an extract prepared from the ciliary body of an ox, the tension became almost normal, and vision returned to a degree that the patient could go about alone. Dor offers the following in explanation. Since the aqueous humor in passing from the ciliary processes leaves behind the fibrinogin and nearly all the albumin contained in the serum whence it originates, and as in pathological conditions, on the contrary, the fibrinogin and albumin continues on into the general circulation of the eye, there ought to be in the cells covering the ciliary processes a chemical substance which would retain the albumin. As this substance is wanting in diseased eyes, it should be sought for in the animal eye and introduced into the human eye. He recommends the maceration of 40 per cent. ciliary bodies in a 1–500 aqueous solution of resorcin for forty-eight hours.

(To be continued.)

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Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE. SECTION IN ORTHOPEDIC SURGERY.

Meeting of November 19, 1897.

DISEASE AND DEFORMITY OF THE TIBIA.

Dr. S. Ketch presented a patient with an unusual deformity of five years' duration. The patient was a girl twelve years old. He had seen her for the first time one week ago. There was anterior bowing of the right tibia and some eversion of the foot. The bone was three inches longer than that of the well leg and greatly thickened. The circumference of the leg was one and one-half inches larger than on the well side. The child's general condition was poor, the result probably of pain, which had been a feature of the history. The skiagraph showed a thickened tibia with some irregularities in the enlargement and an almost complete disappearance of the epiphyseal line due to pressure. He had traced cases resembling this in many features to syphilis, but here there were no signs of infection and history of transmission.

Dr. W. R. Townsend said that he had seen a somewhat similar case in which the extra heat of the limb had led to a diagnosis of osteitis. The diagnosis was wrong, however, as at the end of five years, the bone was found to be sarcomatous, and amputation was done. He thought that the question of sarcoma should not be overlooked in considering the treatment of the present case. The remarkable deformity of the bone had some resemblance to a bowing of a syphilitic tibia, but it was not the *lame de sabre* described by Fournier.

Dr. H. L. Taylor said that the strong anterior curvature of the tibia, the enlargement throughout the shaft, the slight nodes on the surface and the elongation of the bone pointed to syphilitic osteitis.

Dr. J. Teschner had noticed that the swelling and tenderness were more marked on the anterior aspect of the bone, where there was probably pus. These signs and the localized heat indicated an inflammatory action and led him to believe that there was necrosis and that a sequestrum had produced the thickening and enlargement.

Dr. R. Whitman said that the skiagram showed that the entire bone was involved. He did not think it was sarcoma, but rather a case of diffuse osteitis which might have been of syphilitic origin. There might also have been a fragment of necrosed bone within the shaft which kept up the chronic inflammation with continuous enlargement of the bone.

Dr. V. P. Gibney said that he would treat the case as one of abscess of the tibia. Opening the medullary canal would probably reveal several abscesses. In any case it would not do any harm to operate in this way, even if the case were one of sarcoma. He had operated for multiple abscess of the tibia in a young woman, and had planted decalcified ox-bone in the trough-like cavity. Some of it remained and some did not, and other operations had to be done. Since the last she had been perfectly well, and was living out at service.

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[19] Des altérations cornéennes dans la diphtérie conjonctival et de l'injection locale de serum, Soc. Franc. d'Ophtal., Mai, 1897.

[20] Méningites à pneumocoques après l'enucleation, Soc. franc. d'Ophtal., Mai, 1897.

[21] L'extrait de corps ciliaire de bœuf, Soc. Franc. d'Ophtal., Mai, 1897.

Dr. Ketch said he was disinclined to think that his patient had sarcoma. This, as well as multiple abscess, would have caused more local and general disturbance. He believed that a sequestrum was present. Antisyphilitic medication would be thoroughly tried, and after that it was probable that the bone would be operated on.

A CASE OF GENU-VALGUM.

Dr. R. H. Sayre presented a patient, a boy sixteen years old, who, while carrying heavy loads in a bakery, six months ago began to have double genu-valgum, the result of adolescent rickets, and a failure of the bones of the leg to sustain the weight. Three months ago the limbs were put up in plaster-of-Paris, and the boy was kept in bed for two months. To correct the deformity a circular cut was made in the plaster-of-Paris around the knee and a wedge of wood was inserted on the outer side. In a week or so the knee was straightened still further and a larger wedge was inserted. At the end of two months when the splint was removed and the boy began to walk again, there was a slight transient synovitis. To improve his general condition strychnia had been given and the elixir phosphori of the national formulary. The result of treatment was that the limbs were very nearly straight. As there remains some relaxation of the joints, he should have braces to prevent lateral motion during convalescence.

AN OPERATION FOR SLIPPING PATELLA.

Dr. Whitman presented a boy thirteen years old on whom he had operated sixteen months ago for slipping of the right patella. The capsule had been divided on the outer side and considerable difficulty had been found in reducing the dislocation on account of the contraction of the tissues. A tuck was taken in the capsule on the inner side. The patella was now over the external condyle. When he left the hospital it had been in the median line. For a time he had worn a knee-cap as directed, which he had long ago discarded. This case was not presented as a fair test of the operation, as the dislocation was but part of the disability and deformity attending hemiplegic contraction of the right side of the body. It had, however, relieved pain and discomfort.

Dr. Gibney said that it was still a question what is the best treatment of slipping patella. He had transplanted a fragment of the tibia with the insertion of the ligamentum patellæ in a girl fourteen years old. Union in the new position was secured, and the limb was put up in plaster-of-Paris. In spite of a little suppuration, the recovery was good. The ultimate result, however, was in doubt, as the patient was lost sight of.

In another young woman the slipping had occurred repeatedly, followed sometimes by acute inflammation. A splint had been applied, and she was wearing it still to keep the patella in place. In a boy of four years the slipping patella had been easily reduced; and it is probable that massage and the growth and development of the muscular fibres will be sufficient to remove the trouble.

KYPHOSIS OF UNCERTAIN ORIGIN.

Dr. Townsend presented a patient with marked kyphosis in the dorsal region and slight lateral curvature. The patient was a man twenty-four years old, a clerk by occupation. He had had slight pain in the back for eight years, but within the past year the pain had increased and was accompanied by shortness of breath. The diagnosis had not been fully made. It was possibly a case in which lateral curvature was the chief cause of the deformity and symptoms, or it might be an instance of exaggerated round shoulders, or vertebral caries might have started the trouble.

Dr. Gibney said he saw no indication of osteitis or tubercular disease of the spine. There was a little lateral curvature and an exaggerated anterior curve.

Dr. Ketch said that the case was one which had not followed the ordinary course of lateral curvature. The general kyphosis reminded him of senile curvature which, however, rarely occurred at the age of the patient. The man had said that the pain had been so severe as to require the use of mustard plasters. It had radiated around from the back to the front under the nipples. He had never met a case of lateral curvature in which there was pain at the terminal end of nerve. He thought this was the pain of an inflammatory lesion and that the trouble was antero-posterior rather than lateral, and was getting worse. He would treat the patient for an inflammatory affection, and would advise a certain amount of rest for the spine.

Dr. Teschner thought that the curvature was antero-posterior, and that the condition was neither tubercular, rheumatic nor osteitic, and that the pain was not necessarily due to nerve pressure, but rather to the immobility of the spine, or it might be due to indigestion. He would increase the mobility by two or three weeks of gymnastics. He thought that the patient should not be put in any kind of retentive apparatus which would hold the spine immovable. Considerable pain was present in some cases, even when the curvature was not marked. This pain was generally due to a relaxed condition and not to nerve pressure. It was a muscular pain, like that caused by stretching a muscle, analogous to that of muscular rheumatism. This could be relieved by exercising the muscles vigorously, producing a little more pain, and repeating the same thing the next day; the pain will then disappear. These cases could be cured in forty-eight to seventy-two hours if relief from pain were considered a cure. Some lateral curvature patients complained of pain only on executing certain movements, as, for instance, writing or violin playing, etc. A patient had formerly been able to play the violin from two to three hours without inconvenience. When lateral curvature appeared, she could not play for fifteen minutes without pain, but after a short treatment she could play as formerly.

Dr. A. B. Judson thought that the case was one of lateral curvature in which the curve in the line of the spinous processes was slight, while the curve in the body of the vertebræ was probably exaggerated. This would have the same effect on the trunk as if it were compressed vertically. The trunk was shortened and the result was bulging of the chest walls, and kyphosis with a sharp anterior curvature in the lumbar spine. In a question of diagnosis, he thought that pain and other subjective symptoms were less important than the objective signs. He would treat the patient for lateral curvature by appropriate exercises and attitudes for expanding the contents of the chest and the avoidance of fatigue.

Dr. Taylor thought that the case was one of lateral curvature, with more than the usual pain, and with the exaggerated roundness of the shoulders sometimes found in people whose weakness induced postural deformity.

Dr. T. H. Manley said that the history of the case pointed to some special constitutional condition which had caused the deflection of the spine. He thought that the question of syphilis should be considered. There were no evidences of a tubercular condition, but he thought that there was a rachitic element in the case. He would combine local, mechanical support with constitutional treatment by the administration of acids or iron.

UNUSUAL DISLOCATION OF THE TIBIA.

Dr. Taylor presented a patient with unusual deformity and disability of the right knee. The patient was a woman, twenty-three years old. The trouble had begun when she was nine months old, with redness and swelling, and the knee became flexed and its motions limited. When she was ten years old the knee was injured by a fall, and has been deformed as at present ever since. There has been no abscess, and no cutting operation has been performed. There is complete dislocation of the head of the tibia backward, and abnormal lateral mobility. The bones of the knee are small, and there is about one and one-half inches of the shortening of the limb. There is considerable voluntary motion, and she can walk for a few minutes without her brace.

Dr. Townsend had seen a similar case, but less marked, in which the deformity was due to an inflammatory lesion without any destruction of the bone.

Dr. Gibney recalled cases of supposed congenital dislocation of the hip in which operation had revealed results of an inflammatory process so extensive that the head of the bone was wellnigh gone. He thought the present case might have had a similar origin.

Dr. Manley thought that the condition of the patient's knee was due to some pathological process and not to traumatism. He said that the case was a proper one for resection of the fibula and tibia. He was perfectly aware that the acuteness of the operative furor had swept over, and that we are getting back to more salutary conservatism, but this seemed to be an ideal case for operation.

Dr. Taylor said that the patient had declined operative treatment, and he intended to continue giving to the limb mechanical support by means of a Thomas (caliper) splint attached to the shoe, instead of extending below it. He thought that the small size of the bones was due to lack of development rather than to destruction of the bone, and that it was very improbable that this condition was produced by a fall in a healthy limb. There had been some pathological process from infancy which probably left subluxation and flexion, as usually happens in chronic inflammation of the knee, and the fall at ten years of age might have greatly increased the trouble. He had seen a patient in whom a similar condition had been caused by traction applied in the treatment of hip-joint disease. The hip was cured, but the knee was weakened so that the tibia just hung on the posterior edge of the condyles.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, October 18, 1897, the President, **Dr. A. L. Mason**, in the chair.

ANATOMICAL SPECIMENS.

Dr. Frederick I. Knight: I have a small specimen which is of interest because we do not often get them whole. It is a small polyp removed from the anterior part of the left vocal cord. I have not made a section of it yet, as I wanted to keep it whole, but apparently it is a papilloma. It occurred in a man who had been hoarse for two years and had been through various treatments without success. The larynx was very difficult to see on account of the pendency of the epiglottis, and he had been subjected to very severe treatment by swabbing with iodine on board one of the transatlantic steamers. When he came to me, I succeeded in getting a good view at the first session; but there was great difficulty in working on the larynx on account of this pendency of the epiglottis. If I got in any large instrument like the rectangular forceps of Mackenzie there was not space enough to illuminate so as to see the point of the instrument. But the patient fortunately was very susceptible to cocaine; and after a week or ten days I succeeded in removing this with the tube forceps; and fortunately, although not exactly pedunculated, the attachment was slight, and it came off whole, and his voice was at once restored.

I might say in passing, in regard to these growths, that very little improvement has been made in the way of managing them in the last thirty years since the invention of the laryngoscope, except in the matter of cocaine. As the older members remember, in the days before cocaine it took a very prolonged, oftentimes weeks', manipulation before one could get an instrument to the vocal cords to work successfully. Since the introduction of cocaine it is possible sometimes — I have been able to do it once — to remove the polyp in its entirety at the first interview with the patient. That, however, does not often happen; but it usually requires several days, or possibly a week or ten days, as in this case, which was one of the most difficult to work on I have ever had.

INFANTILE SCURVY.

Dr. J. L. Morse: I wish to call the attention of the members to the investigation which the American Pediatric Society has undertaken regarding infantile scurvy. As the disease is rather uncommon, the committee is very anxious to get as full a report as possible. I have here some of the blanks, which I shall be glad to give or send to any who have had cases. I shall be glad if the members will call the attention of their friends to this investigation.

PHYSICAL TRAINING IN THE SCHOOLS.

Dr. Walter Channing presented the report of the committee.[1]

Dr. C. J. Blake: In view of the fact that experts in physical training are present, I shall ask you to allow me to make very brief remarks. The question of physical training for children in the public schools, so admirably set forth in the report of the committee, makes the duty of a doctor in this matter very plain, since he is the authority called upon, not only in individual cases but also, so far as the general supervision of the health of the children in our schools is concerned, to give an opinion, to suggest remedies and secure prevention. The physical education in the public schools as fitting children for the work which they have to do later in life is so important that too much attention cannot be given to it on the part of those who study the subject from the doctor's point of view. One purpose is that which takes advantage of the natural play instinct of the child and turns this to good effect in the education of the individual or of the class; and the plan suggested for the use of certain games as well as certain gymnastic exercises serves to cover the ground fully. There are many games which can be used in the way suggested by Dr. Channing in his report, as illustrated by the work done by the Physical Education Society in the exhibition given under its auspices in the High School Building on Montgomery Street last winter; and it is to be hoped that there will be more exhibitions of the same kind which shall be distinctly demonstrations of what can be done in this way. So far as the length of time at disposal of the teachers is concerned, it would seem that time might be advisedly added to the school hours for the purpose of making physical training, either in the way of direct gymnastics or in the way of plays and games, a part of the regular course; and not only in our public schools, but in our larger and more advanced educational institutions should physical education be made a distinctly recognizable part of the curriculum.

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[1] See page 25 of the Journal.

Dr. Hartwell: It gives me pleasure to call attention to certain features and characteristics of the report of your committee. Although in a sense I was under investigation, it fell to my lot to aid the committee in their efforts to determine the condition of physical training in the public schools of Boston; and I desire to bear witness to the searching and deliberate and objective character of their investigations. According to my notes, the committee's visits occurred on ten separate days, and embraced fifteen different schools. The committee usually gave half a day at a time to the work. Its members saw all there was to be seen and drew their own conclusions. The schools visited embraced some of the average and poorest schools, as well as the best schools. In no instance was notice given in advance that the committee was coming; indeed it was not generally known in the schools that any investigation was in progress. On entering the school we tried further to make the sampling of the work as much a matter of chance as possible by going into rooms at haphazard, and starting the exercises on the instant, and I attach more value to the report on that account. For my own part, as this is the first opportunity I have had to make acknowledgment of the committee's zeal and interest in any formal or public way, I wish to express very emphatically my thanks to them for the thoroughness and fairness with which they conducted the investigation. It seems to me extremely important and desirable that the character of such experiments as have been conducted in physical training in the Boston schools during the past six years should be made known to the school authorities and the public by competent representatives of the medical profession, since in the minds of parents and teachers the medical profession is the court of last resort in respect to measures whose object is the improvement of the health and bodily ability of the school population. I was not present at the hearing given by the Committee on Examinations and the Committee on Hygiene and Physical Training to the representatives of this Society and of the Boston Homeopathic Association; but I am sure that the representatives of the School Board esteemed the opportunity to confer with representative physicians. As a result of the conference, the joint committee adopted certain of the leading recommendations contained in Dr. Channing's report, and reported the order already alluded to, and the order was passed by the School Board without any opposition. Therefore I wish to emphasize the fact that the work of your committee led to positive results.

What was done in obedience to the order already alluded to had to be done at the very close of the school year, but the Board of Supervisors and the then director of physical training elaborated a plan (1) for furnishing two grammar schools which happened to have vacant rooms adapted to the purpose with a considerable amount of fixed apparatus; (2) for introducing a certain amount of portable apparatus adapted to class exercises in jumping, balancing, etc., into twelve selected schools out of the fifty-six grammar schools; and (3) for trying the experiment in a number of schools of organizing recess, the aim being to familiarize the children with games which can be played in the yards without apparatus, and with other games requiring only the simplest apparatus, — former experiments having shown that where the teachers are sympathetic and enterprising the recess-period can be more fully utilized for the purposes of active play than is usually the case.

Now as to this matter of recesses, I wonder if the medical profession recognizes how largely there has been a feeling in this neighborhood and in this State against recess? There is a rule of the Boston School Committee that there shall be twenty minutes' recess in the forenoon, but certain masters have managed to nullify it, I regret to say. It is rather a pleasant addition to one's noon-hour to close school at twenty minutes to twelve, and let that take the place of any recess except that given for marching down to the "screens" in the basement or the yard to relieve the wants of nature. I believe there are several cities in the State in which, as a matter of principle, the school children are deprived of any recess in the open air. The need of clearer views upon some of these matters is emphasized by what one occasionally meets with. I remember a case in point: One afternoon I had occasion to address the graduating class in a certain school. It happened to be Monday and the last hour of the school session; certain of the pupils left the room about a quarter of four, and the master explained that they were monitors who had to look after the filing out of the children. When I had finished at four o'clock I found the schoolhouse deserted. I said, "How is this?" "Oh, this is Monday; and on Monday all the children who have not been down to the basement during the week are allowed to go home fifteen minutes earlier," was the reply. It is still possible to find progressive men in the ranks of schoolteachers whose ideas on the hygiene of school-keeping are on a level with that. In passing I venture to express the hope that the question of school-hygiene as well as the question of physical training be kept in view by those who have the welfare of our school population at heart.

As I was saying, the tone and sentiment of the school authorities with regard to the work of physical training has been improved as a result of the investigation and the report which we are considering. Still I regret to say the request for funds to carry out the plan of the Board of Supervisors and of the Director of Physical Training for the improvement of physical training has not yet been granted. If I am correctly informed the request for funds was tabled ostensibly on the ground of lack of funds; but I have no doubt that if the committee who tabled it were made to see that there is a genuine demand for the modest degree of expansion of physical training called for in the recommendations of your committee the money would be found pretty promptly. Such tabling and holding back is quite customary with regard to most measures designed to promote the physical welfare of the school children. It should be said that the last two years have been signalized by substantial improvement in the gymnastic instruction given in the high schools. But for the efficient aid of physicians on the board that improvement would have been still longer delayed, "for lack of funds." If he will allow me to say so, it is very largely owing to the persistence and energy of Dr. Calderwood, the present chairman of the Committee on Hygiene and Physical Training, that we have been enabled to measurably increase the facilities for physical training in the high schools during the past two years. In that time the number of high school gymnasia with apparatus available for the use of girls has increased from one to five. In addition, the gymnasium in the English High and Latin School Building has been refitted and furnished with Swedish gymnastic machines. The two lower classes of the Latin School received systematic instruction in gymnastics in this gymnasium last year. The desire of the masters of the High School and of the Latin School is that a special teacher shall be put in charge of this gymnasium to devote all his time during school hours, and also a portion of the afternoon because those schools close at two o'clock, to the gymnastic instruction of such boys of the two schools as do not have military drill. The two lower classes of the Latin School do not have military drill, and there is always a considerable number of the older boys who do not drill, and hitherto no other form of physical training whatever has been provided for them. There is now a fair prospect, I think, that the policy (which I advocated in 1891) of organizing voluntary classes in gymnastics for instruction out of school hours will be inaugurated.

The situation then at the end of six years of experiment may be characterized thus: it has been shown that the regular class teachers can be trained without an inordinate expenditure of time or money to give good instruction in the line of systematic gymnastics thus far attempted, namely, in free movements without the use of apparatus in the aisles between the desks, in the corridors or in the school halls; that the masters and class teachers as a body are well affected towards the systematic work in vogue and many of them are desirous that free movements should be supplemented by exercises on apparatus for the upper classes in the grammar schools, and would welcome the provision of facilities for such exercises. The need of gymnasia and apparatus as well as of skilful teachers for the perfect physical training of pupils in the high schools is generally conceded and gratifying progress towards meeting that need has been made, especially in the last two years. Your committee recognizes that the work in progress is good of its kind, being, from the necessity of the case, tentative and preparatory, and advises expansion and extension of the work. In so doing the committee voices a demand from outside the schools, which accords with the desires of the most intelligent and progressive teachers in the schools — which demand and desire the director of physical training has striven for six years to develop. The situation, therefore, appears to me to be a hopeful one — though I am not inclined to underrate the shortcomings of the physical education given in the Boston schools, when compared with that which obtains in Stockholm, Berlin, Frankfort and Paris. I confess that I indulge a somewhat lively hope that it will ultimately come to pass that Boston will not be satisfied with half-way measures, but that at least the newer schoolhouses will be provided with adequate facilities for the rational and effectual promotion of the two main departments of physical training, namely, gymnastics and games.

If such societies as this will but take pains to study the teachings of experience with regard to the organization and conduct of physical education in the leading cities on the Continent, they will become convinced that Boston and Massachusetts cannot afford to lag behind the cities of Germany and Sweden and France in this matter and will be prompted to enlighten the public mind as to the desirability and the possibility of providing gymnasia and playgrounds for the rising generation, and of the necessity of placing them under the management and control of men and women of high character and approved ability. The best European experience also warrants the opinion that physical instruction and school hygiene differ so much from each other in respect to aims and method that they should be organized and administered as separate departments. The hygienic ends of physical training are important, but its pedagogical ends are of equal or even greater importance. Teachers of gymnastics should be specially trained for their duties, but so long as they are laymen they should not be permitted to usurp the functions of health officers or school hygienists. Questions relating to school diseases, to the sanitation of school premises, the use of lighting and heating apparatus, the principles of seating and other matters of hygiene should be decided by hygienists who are trained first and fundamentally as medical men. Physical training as an educational discipline is of so much importance that it should be provided for as a co-ordinate, integral part of the school course outside of the jurisdiction of health officers, sanitary inspectors, and school hygienists, just as drawing and mathematics and natural science are outside their jurisdiction.

DR CALDERWOOD: I should much prefer to listen to the other members of the Society; and I don't know really that I have very much to add to what Dr. Hartwell has told you that has been done. I do wish to thank the members of the committee from this Society for the able support given to the hygiene committee by them. I think but for that committee some of the orders which have recently passed could not have been passed in the School Board. Some of the recommendations for apparatus for the grammar and high schools have been tabled for the time being. We expect, however, that those orders will be taken from the table and passed before the year is out. We do ask for the continual support of this committee. I don't think it would be possible to carry on all this work without outside help. There is one thing that has been mentioned that I think would help the physical training in the schools perhaps more than any other one thing, and that is better facilities at the Boston Normal School. At the present time there is absolutely no room for physical training. I was there day before yesterday during the exercises. The hall was filled, the vestibule filled and the stairs covered with girls taking the exercises. Now, of course, with a school building in that condition we can't expect much good to come to those girls who are to be the teachers of physical training in the schools. This society, it seems to me, could help the cause by advocating and insisting upon it that we have a new normal school building. Such a building has been asked for several times; but there has been a question in the School Board whether the State should take the normal school or the city continue it. The School Board recently voted not to ask the State, so that if we should have a new building then we can train our teachers for better work in the grammar and primary schools. The Latin School and the High School gymnasium, as Dr. Hartwell has told you, have recently been refitted, and the committee are on the point of selecting a director to have charge of the boys of the fifth and sixth classes in the Latin School which do not drill and those exempt from drill. The idea is to have the director drill those at some time during the school hours, and also during the afternoon if they see fit to go. I desire again to thank the members of the committee; and I hope this Society will not release this committee from further work, but that they will continue to aid the School Board Committee on Hygiene.

Dr. C. H. Williams: I have been very much interested in hearing how much has been done in the way of physical training and hygiene for the preservation of health among the school children. I should like to ask whether anything is done when the children come up at the beginning of their school years in the way of examination of vision and hearing — in other words, of the means by which they must do all their school work, the means by which they acquire their knowledge. It seems to me that such examinations should be made of all pupils at the beginning of their school life, so that if defects of vision or hearing are found to exist they can be taken in hand to see what can be done to help them, rather than to have the children work along handicapped by conditions that could be helped if the cause of the trouble was only recognized. I don't know whether it is done or not, and I should like to ask Dr. Hartwell whether any examinations are made in the early school years of the vision and hearing.

Dr. Hartwell: So far as I am aware, nothing systematic is attempted in that line unless it is undertaken by the fifty physicians charged with daily inspection of the schools under the regulations of the Board of Health. The teachers are encouraged to call the attention of the visiting physician to children who appear to be defective or below par in any way. I do not think that the school physicians make a special study of defective vision in the schools. The most we were able to do in connection with the department of physical training was this: at the request of the superintendent and of the head of the Normal School the attention of the young women of the Normal School who were to go out as teachers was called to the nature of certain defects of vision and hearing. One of the members of this Society, Dr. C. J. Blake, very kindly gave them an extremely interesting and illuminating lecture on the way in which they might detect the coarser defects of hearing in their pupils. I tried to familiarize them with certain of the coarser tests for defects in vision, in order that they might not be entirely unfamiliar with such matters. But it is not the business of any one, and never has been as far as I know, to make any kind of physical examination of the children on their entrance to school. Hygienic inspection of schools and school children is not organized anywhere in this country, as far as I know, which will bear comparison with such surveys as are made, for instance, in Paris and Brussels, Buda-Pesth and Stockholm. I should like to mention that the work in these cities is done by physicians, it is not entrusted to the directors or teachers of physical training. While we are speaking of the opportunity for usefulness open to the medical profession in connection with school affairs, I venture to say that I hope the time is not far distant when the physicians will rally once more to support the idea of having medical supervision and hygienic supervision of our school children by physicians. There is a more or less outspoken feeling among many teachers of physical training, that if they are not equal now they soon will be to taking charge of the health of the children in the schools and I believe that no graver mistake could be promoted.

Dr. Blake: There is in one sense a permanent committee existing for the consideration of such questions as this, and this committee of the whole, as it were, is made up both of medical men and of persons practically, technically engaged in physical education, and forming the Boston Society for Advancement of Physical Education, a branch of the National Association.

The President: The report of your committee is at your disposal. What action shall be taken?

Dr. Folsom: I move it be accepted, and the thanks of the Society voted, and the committee continued on duty to co-operate with the Committee on Hygiene of the Public School Committtee.

Dr. Channing: If this committee is to continue, I think it would be desirable to add another member to it; now that Dr. Hartwell is no longer connected with the public schools, and is a member of this Society, it seems to me he would be a very valuable addition to the committee, and if he would be the chairman of it, it might in the future be of some use.

The President: As the number of this committee was not limited, the Chair will ask Dr. Hartwell if he will also serve on this committee. The committee then consists of Dr. Hartwell, Dr. Channing, Dr. Bradford and Dr. Conant. The committee will be continued as announced.

A Memorial of Mr. J. Greig Smith. — It is proposed to erect a memorial tablet within the precincts of the University of Aberdeen, to the late Mr. J. Greig Smith, professor of surgery at University College, Bristol.

THE BOSTON

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THE REPORT OF THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD (ENGLAND) FOR 1895–96.

THIS report contains material of much interest to physicians, especially to sanitary officials. But, while its final date is June, 1897, much of the contents relate to a remote period.

The digest of vaccination returns is for the year 1893, and showed that in that year 16.1 per cent. of all births in England and Wales were unaccounted for as regards vaccination, as compared with an average of 11.7 per cent. for the previous five years (1888–92). The remarkable statement follows that "from returns received from the Board's own vaccinators, covering a period of fifteen years, and having concern with no less than 95,677 consecutive primary vaccinations, it has been shown that no single case of 'insusceptibility' has been met with." This portion of the report is followed by a report upon the sanitary condition of certain districts in which typhoid fever had been unusually prevalent and was as usual apparently due to polluted water-supply. An outbreak of diphtheria at Llanfynydd (in Carmarthenshire, South Wales) was shown to have been coincident with "persistent sanitary neglect, in which preventable disease, getting a foothold on the population before it is recognized, finds everything at hand to favor its fatal diffusion."

The report of Dr. Copeman is one of special interest, since he again calls attention to the prevalence of an epidemic skin disease in certain metropolitan work-houses, which he is inclined to attribute to a faulty milk-supply. In a previous report of 1893–94, a similar outbreak had been shown to be associated with a particular milk-supply, which, in four of the infected institutions, was supplied by the same contractor. Dr. Copeman's report leaves little room to doubt that the disease was identical with that which he had formerly reported, and that it was attributable to the milk-supply. Nor was there any evidence that it was due to personal infection, or to soap or coarse clothing.

The epidemic was attended with gastric symptoms, nausea, coated tongue, loss of appetite, preceding the appearance of rash, which was also preceded by irritation, heat and tingling of the skin. The rash first appeared on the arms and hands and then became general. The epidemic ceased upon the cessation of the milk-supply from this contractor. An examination of the milk was made three days before the cessation of the epidemic, but it was not very satisfactory and resulted in the statement: "It contained material which does not properly enter into the composition of milk."

The researches of Dr. Klein, published in this volume, with reference to the subjects of protective inoculation, prophylaxis in diphtheria, and upon the germicidal element in blood serum will be studied with special interest by bacteriologists.

Dr. Kanthack presents the subject of blood serum in another aspect or use, namely, as an agent in neutralizing in a given animal toxin already produced in, or introduced into, its tissues, the poison in this instance being snake venom.

A portion of the report, of much practical importance, is that which treats of the subject of the influence of glycerine, lanoline and vaseline in inhibiting the growth of micro-organisms commonly found in vaccine lymph, by Drs. Copeman and Blaxall. The practice of employing glycerine as a means of increasing the volume of vaccine lymph without impairing its efficiency appears to have been shown as early as 1869 by Müller, and had been employed by Warlomont and by the German government at a later period; but this method appears to have been practised "without appreciation of the inhibitory actions excited by the glycerine in bringing about bacteriological purification of the lymph when the mixture is stored for some time prior to use, under conditions preventing access of air and light."

In particular experiments, when pathogenic microbes, such as the bacillus of diphtheria, the bacillus of tubercle and the streptococcus of erysipelas, were purposely mixed with the lymph material, these organisms were found to be destroyed in a month or less in a lymph emulsion containing some thirty or forty per cent. of glycerine. These experiments also show, that, whatever conveniences may at times arise from the substitution for glycerine of either vaseline or lanoline, these two latter preparations cannot replace glycerine in the important influence which that substance possesses in destroying extraneous micro-organisms found in, or added to, vaccine lymph, whilst leaving its activity for the purpose of vaccination absolutely intact.

The report is accompanied with several suggestive photographs of plate-cultures made in connection with this series of experiments.

It is pleasing to know that the Board of Health of New York City has taken up this subject in a practical manner, and is furnishing this glycerinated lymph, and that the United States Army has secured a supply from the Board.

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THE ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

THE annual report of the Boston City Hospital for the year ending January 1, 1897, which has recently appeared, is of interest as giving an adequate idea of the immense amount of medical and surgical work which is being done at that institution and of the extent and scope of the improvements in the accommodations and facilities for work which is in progress there under the guidance of the board of trustees.

In the wards of the hospital during the year there were treated 8,393 patients, 3,663 in the medical, 3,560 in the surgical and the remainder in the gynecological, ophthalmic and aural services.

In the out-patient departments 20,562 patients were treated, 9,080 of these being surgical, 3,455 medical. The out-patient departments for diseases of the eye, the skin and the throat treated over 1,000 patients each; and the departments for the diseases of women, the nervous system and the ear over 500 patients each.

In addition to these, 2,145 surgical patients were treated in the accident rooms, and not included in the above figures.

The entire amount expended for the hospital proper was $341,331.14, of which $241,298.24 was chargeable to current expenses. The cost to the city of each patient per week was $9.95, an extremely low average.

The capacity of the hospital at the close of the year was 512 beds in the hospital proper and 240 in the South Department for Infectious Diseases.

Much progress has been made, during last year, towards completing the hospital enlargement begun by the trustees during the previous year. The surgical operating building, as far as at present completed and in use, contains four rooms, each properly equipped and practically a duplicate of the others, for the treatment of all accident cases and out-patients at any time of day or night. There are waiting-rooms in connection with these for the friends of patients and visitors, an office for the general conduct of the surgical department, together with rooms for the preparation of surgical dressings and bandages, and storerooms. There are also two casualty wards, with a duty or service room between them, the larger one having eight beds, intended for men, and the smaller one five beds, intended for women. The building greatly facilitates the reception and prompt care of new cases, whether for admission to the hospital or for temporary care as out-patients. The casualty wards receive all accidents, large or small, except burns, that may come during the twenty-four hours, and each morning suitable cases are transferred to other wards, according to the case. This first aid to the cases gives better opportunity for observation, and helps to better classification. It also gives opportunity for patients who are seriously injured and can live only a few hours, to receive proper treatment under the most favorable conditions, without sending them to the wards, thereby subjecting other patients to the depressing effect of proximity to the dying. The wards are thoroughly and excellently equipped, and they have a nursing force both by day and by night.

The operating-rooms, on the first or main story, are five in number, only four of which, however, are used at the present time. The sterilizing room has been properly equipped, and probably has the most extensive appointments for sterilization and preparation of surgical dressings of any hospital in the country. The instrument room, room for preparation of dressings, etherizing room, and surgeons' and house-officers' consulting-rooms, make the new part almost a complete building in itself. The accommodation for large numbers of students to witness clinics and operations must wait the completion of the new amphitheatre. The largest operating room, however, has been furnished with temporary seats, and about sixty can be comfortably accommodated.

Two new surgical wards, of thirty beds each, one for male, and one for female patients, admirably equipped in every respect have been completed and occupied during the year.

During the year the installation of an electric-light plant for which $40,000 had been appropriated was in progress; it has since been completed, and is now in operation in all the departments of the hospital.

An extensive refrigerating plant for the preservation of bodies by the ammonia process was installed in the pathological building.

A new laundry building is in process of construction.

The gynecological service has been extended by converting a male medical ward into a ward for the gynecological service.

The pathological buildings described in the previous annual report have proved adequate to the requirements of the department during the year.

In the South or Contagious Department 3,047 cases were treated, with a total death-rate of 14 per cent., and the death-rate in 1,889 cases of diphtheria was the same.

The appearance of the report has been delayed many months, apparently by the new City Printing Department.

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MEDICAL NOTES.

TYPHUS FEVER AT SKYE. — A number of cases of typhus are reported at Skye, a small hamlet near Portree, Scotland. The inhabitants did not know the nature of the disease, and consequently children from infected houses were permitted to go to school. As a result, several members of the teacher's family have been stricken with the disease.

THE MODERN TREATMENT OF PROSTATIC TROUBLE. — The *Journal of the American Medical Association* perpetrates the following: Whatever may be the preferences or conclusions of surgeons regarding a choice between castration and vasotomy, one thing is very certain, that after the latter operation the patient will notice a *vas deferens.*

THE "PHILADELPHIA MEDICAL JOURNAL." — The first number of this new medical weekly is an excellent one, both as to contents and as to appearance. The arrangement of the contents is somewhat novel; the editorial comments come first, then follow in order — a selection, American news and notes, foreign news and notes, Philadelphia news and notes, the latest literature consisting of extracts from ten prominent medical journals, and last of all the original articles. The removal of the *Medical News* to New York left a place to be filled by a first-rate journal in Philadelphia, and this new journal, which is owned and governed by a Medical Board, will doubtless prove most useful to the profession. The editor, Dr. Geo. M. Gould, has much ability and experience, and the policy of the journal, as announced in the editorial columns, is very commendable.

NEW YORK.

ANNIVERSARY OF THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL. — The thirteenth anniversary of the Post-Graduate Medical School and Hospital was celebrated on January 8th. Among the addresses made was one by Ex-Mayor Strong on "The Advantages of the Institution," and one by Prof. B. Farquhar Curtis, on "Modern Surgery." The hospital has about 200 beds, and during the year 2,403 patients, of whom 1,326 were free patients, were treated. In the dispensary department 19,017 patients were treated and 1,405 visits were made to patients at their homes.

A HEBREW HOSPITAL FOR BROOKLYN. — On January 7th application was made to the State Board of Charities for a certificate of incorporation by the Brooklyn Hebrew Hospital Society, which proposes to establish a hospital and dispensary in the Borough of Brooklyn.

BEQUESTS TO THE SENEY HOSPITAL. — By the will of the late George Barlow $17,000 is left to the Seney Hospital of Brooklyn, and in addition to this, $5,000 to endow a free bed in memory of his mother and $3,000 for a bed in memory of a deceased child.

A CENTENARIAN DANCES A JIG. — On New Year's Day, Nicholas McQuillan, of Southold, Long Island, celebrated the one hundredth anniversary of his birth, and in the presence of a number of friends and neighbors who had assembled to do honor to the occasion, danced an old-time Irish jig in company with his sister who is ninety years old. He was born in County Meath, Ireland, January 1, 1798, and did not come to America until 1864. He has always enjoyed vigorous health, and until recently worked at his trade, that of a weaver. His eldest son, himself a grandfather, is now 76 years old.

OVERCROWDING IN THE STATE CHARITABLE INSTITUTIONS. — When two years ago the care of the city's insane was transferred to the State, it was promised that they should be given accommodations equal to those enjoyed by the inmates of the hospitals in other parts of the State. But as yet little has been accomplished in that direction. The buildings on Hart's Island, which are frame structures that were originally built for barracks and temporary shelters for prisoners during the war, are totally unfit for their present uses, and these, as well as the buildings on the other islands, still remain very badly overcrowded. The Governor of the State, having been informed that "the beds were so close in these institutions that a bicycle could be ridden from one end of the wards to the other over them without a break," recently made up his mind to make a personal inspection of the state of affairs, and accordingly, on December 22d, accompanied by a number of officials, he visited the different islands. As a result of this visit it is to be hoped that suitable measures to remedy the existing evils will be taken by the authorities. It is stated that on Ward's Island, in the male hospital, with a normal capacity for 1,300, there are 2,130 inmates, and in the female hospital, with a normal capacity of 900, there are 1,367. In the hospital on Hart's Island, with a capacity for 1,000, there are 1,500 inmates, and in that on Blackwell's Island, with a capacity for 600, there are 839 inmates.

OVERCROWDING AT THE HARLEM HOSPITAL. — Another institution that is badly overcrowded is the Harlem Hospital, at the foot of East 120th Street. Although the hospital has only 39 beds, more than 6,000 patients have been brought in for treatment by the ambulances during the past year, from three to seven emergency patients are laid in stretchers upon the floor each night because there are no beds for them, and hundreds of patients whose condition demands absolute rest have to be transferred to Bellevue or the City Hospital on Blackwell's Island, at whatever risk, on account of the lack of accommodations. The Harlem Hospital ranks third in the city in the receipt of emergency cases, yet the building has no private wards, and maternity cases have to be attended to in the main ward.

THE SOCIETY OF COLLEGE GYMNASIUM DIRECTORS. — A meeting of the Society of College Gymnasium Directors, which was organized during the past autumn, was held on December 31st at the Knickerbocker Athletic Club. The institutions personally represented were Amherst, Yale, Johns Hopkins, Dartmouth, University of Virginia, Rutgers, Trinity, and the University of Pennsylvania, and the organization was completed by the election of the following officers: President, Dr. J. W. Seaver, of Yale; Vice-President, Dr. C. P. Linhart, Ohio State University; Secretary and Treasurer, Dr. J. L. Savage, Columbia; additional members of the Council, Dr. D. A. Sargent, Harvard, and Prof. F. H. Conn, University of the City of New York. It was agreed that uniformity in the matter of measuring the strength of students entering the different colleges would be of much assistance to the directors of physical development, and a plan of measurement submitted by a Committee on Strength Tests was in general approved. This plan, however, is subject to possible modifications, and the explicit directions for measurements will not be definitely determined until the next meeting of the Society. It was found impossible to complete the hearing of the Committee on Terminology, appointed to select names for each form of exercise, and this matter will also be subsequently determined upon. The committee consists of Drs. Anderson of Yale, Sargent of Harvard, and Goldie of Princeton.

Bequests to Hospitals. — By the will of Charles H. Coutoit, a wealthy bachelor who died in December, almost his entire estate, valued at over $1,000,000, is left to nineteen religious and charitable institutions, all of which are to receive an equal share of the estate. Among these institutions are St. Luke's Hospital, St. Luke's Home, Home for Incurables, St. Mary's Free Hospital for Children and the House of Rest for Consumptives. Since the will was made the last-named institution has been incorporated with St. Luke's Hospital.

Death of Dr. Heuel. — Dr. Franz Heuel, one of the oldest and best-known practitioners in the city, died on January 4th. He was born in Westphalia, August 4, 1818, and while a student at the University of Berlin, took part in the revolutionary movement of 1848; in consequence of which he was obliged to take refuge in America. He was graduated from the College of Medicine of the City of New York in 1851.

Death of Elton J. Sherow.—Dr. Elton J. Sherow, a young physician of great promise, died on January 1st, from an overdose of cocaine, to the use of which he had unfortunately become addicted. He was born in Sing Sing, N. Y., twenty-eight years ago, and was graduated from the College of Physicians and Surgeons, New York, in 1890. He afterwards served as interne at St. Luke's Hospital, and later in the Nursery and Child's Hospital.

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Miscellany.

POST-MORTEM DELIVERY.

"In German medical literature is found a term for which, as far as we are aware, there is no English equivalent, namely, *Sarggeburt*, which literally translated means "coffin-birth"—that is to say, that a pregnant woman dies and the body is placed in a coffin, and then before or after burial delivery takes place. Very few cases of this kind are on record. A notable case, however, is recorded by Dr. Bleich, of Tschirnau.[1]

"Before proceeding to describe the case Dr. Bleich makes some remarks on the theories that have been advanced to account for the causes which bring about post-mortem delivery, and states that two explanations have been advanced: the first supposes that the pressure produced in the abdomen by the gases evolved in post-mortem decomposition is sufficient to cause the expulsion of the uterine contents, whilst the second suggests that the necessary force is brought about by the condition of rigor mortis into which the muscular structure of the womb is thrown.

"Proceeding then to a description of the case which he himself observed, Dr. Bleich records that on July 6th the dead body of a woman was found lying in a shallow pool of water. It was ascertained that she had escaped from her home in a state of insanity. On examination no signs of injury could be found with the exception of slight bruises on the knees; it was found that she was pregnant, probably in about the seventh month. Post-mortem rigidity was present; a few post-mortem stains were found on the back. It was concluded that the body had only been a short time in the water and that all the evidence pointed to suicide, and the burial took place on July 9th. Eight days after the finding of the body it was ascertained that three young laborers had had sexual intercourse with the deceased woman shortly after one another. They were arrested and closely questioned, and all three persistently denied that any criminal force had been used, but, on the contrary, said that the woman had been a consenting party. Exhumation of the body was ordered, and a post-mortem examination was made on July 19th. Delivery was found to have taken place after the coffin had been closed, with complete inversion and prolapse of the uterus and vagina.

"A full account of the necropsy is given in Dr. Bleich's paper. We can only give a brief abstract. The abdomen was greatly distended but exhibited no signs of injury. Between the thighs lay a dark-red mass (the uterus) about the size of a head, from the under side of which sprang a dark umbilical cord, and connected with the latter was the body of a child 36 cm. in length. The vulva was wide open. The uterus was flabby and like a sac, and lay with its inner surface pressed against the thighs together with the vagina; the placenta had separated, and was dark-brown in color and of a hard consistence. The muscular walls were thin and brittle.

"Dr. Bleich suggests that the violence experienced by the woman shortly before death had been of such a nature as to render abortion probable, and that the collection of the gases of decomposition in the abdomen had been sufficient to complete that process and also cause the condition of the uterus found on the exhumation of the body." — *The Lancet.*

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Obituary.

GEORGE CARROLL DOLLIVER, M.D.

George C. Dolliver was born in Gloucester, September 29, 1869, and was educated in the public schools of that city, graduating in 1887 from the high school and entering Tufts College with the expectation of studying medicine at the termination of his college course. In college he distinguished himself most in the natural sciences, and in 1891 obtained the degree of Ph.B. from this institution. In the fall of 1891 he entered Harvard Medical

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[1] Vierteljahresschrift für gerichtliche Medicin und öffentliches Sanitätswesen, 3, Folge, Band xiv, p. 2.

School, from which he obtained the M.D. degree in 1895. Before graduating he began his service as surgical interne at the Massachusetts General Hospital, and followed this by a similar service at the Lying-in Hospital, his service terminating in May, 1896, at which time he began the practice of medicine in Boston.

His ability received recognition in many ways, most conspicuous among which being his appointment as assistant in obstetrics at the Harvard Medical School. In September, 1896, he was married to Miss Helen G. Hopkins, of Arlington.

Hardly any further comment upon his character need be made, when it is known that for many months before his death he had to face practically certain death, and if not that, blindness or an invalidism which would have removed him from all activity in his profession, and yet he did it as I am sure but few could.

Twenty-eight years are all too short, it seems, when spent only in preparation for one's chosen profession; but as we study nature we see but little waste in her effort, and must rest content that this life's energy is to be utilized in inculcating in those who have had the privilege of association with him the truth and ripened character which we know him to have possessed.

The development of character is the standard by which we must all be judged, and by such tests he certainly would have found no superior among his associates.

High aims and faithfulness to duty characterized him in his professional life, and won for him a recognition much to be envied; consideration for others and fidelity in all his family and social relations had always been an object of admiration in those who sustained such relations with him.

May his example be ever a means directed to the betterment of the conditions in which we live, as he would have wished it might, and as he was striving that it should.

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JOSEPH O'DWYER, M.D.

DR. JOSEPH O'DWYER, who achieved an international reputation by demonstrating the practical applicability of intubation of the larynx as a substitute for tracheotomy, died of tubercular meningitis on January 7th, at the age of fifty-five. When he was attacked by his last illness he made the diagnosis of the disease, which was confirmed by Drs. Delafield and M. Allen Starr, and at once recognized the hopelessness of his case.

Dr. O'Dwyer was for many years associated, as visiting physician to the New York Foundling Asylum, with the late Dr. J. Lewis Smith and the late Dr. Charles Carroll Lee, and it was in the ample clinical field afforded by the wards of this institution that intubation was established on a firm basis by himself and later by Dr. W. W. Northrup in conjunction with him. He was a graduate of the College of Physicians and Surgeons, New York, in the year 1866, and was as remarkable for his modesty as for high attainments.

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MR. ERNEST HART.

ERNEST HART, editor of the *British Medical Journal*, died in London on January 7th. He was born in June, 1836. He was educated at the City of London School and the School of Medicine attached to St. George's Hospital. At one time he was ophthalmic surgeon and lecturer on ophthalmology at St. Mary's Hospital. He rendered great service in exposing defective arrangements for sick poor in workhouses, his efforts leading to the passage of Hart's Act and the creation of the Metropolitan Asylums Board. His reports on criminal baby farming in 1868 led to the passing of the Infant Life Protection Act.

Mr. Hart was Honorary Chairman of the National Health Society and President of the Medical Sickness, Annuity and Life Assurance Society. He was appointed editor of the *British Medical Journal* in 1866, and for several years was responsible for the editorial conduct of the *Sanitary Record* and the *London Medical Record*.

In addition to his ordinary editorial contributions he published fifteen or more pamphlets, among them "The Mosaic Code of Sanitation," "The Sanitary Needs of India, "The Nurseries of Cholera," "Regulation and Registration of Plumbers," "The Truth About Vaccination," "Hypnotism, Mesmerism and the New Witchcraft," "Water-Borne Typhoid," and "Hospitals of the State." He was particularly interested in Japan, and made an interesting collection of ancient Japanese objects of art.

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DR. ZACHARIN.

DR. ZACHARIN, the eccentric physician to the late Czar Alexander III, and lecturer on the functions of the heart at the Imperial College of Medicine at Moscow, died January 5th. He gained notoriety in 1894 on account of his controversies with Dr. Leyden of Berlin, and other physicians who were called in consultation, with regard to the diagnosis and treatment of the czar's fatal illness. He refused to sign the official report of the czar's death and threatened to leave Licadia, where the czar died and return to Moscow. He was prevented from doing this only by a command from General Ticher. So bitter had been the disputes among the consulting doctors, and so pronounced had been Zacharin's eccentric actions, that the death of the czar was indirectly laid at his door, and when news of the passing of Alexander III reached Moscow a crowd of people, urged on by students, tore down the doctor's house and burned his furniture in the street. The new Czar Nicholas II, however, soon forgave him, and made him a present of a jewelled snuff-box, and the students gave him an enthusiastic welcome.

Dr. Zacharin was eccentric in his dress, and was brusque and exacting with his patients, compelling them to sit motionless before him, and not to irritate his sensitive nervous system.

His fees were exorbitant and in addition to the payment of these he demanded, even of patients of the highest rank, that all his whims be respected. He compelled the czar to alter the arrangement of the furniture in the rooms he occupied in the palace.

He is said to have declined to lunch with the czarina, on the ground that he was not in the habit of taking his meals with women, and to have attended the czar in a dressing-gown and a peasant's top boots.

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Correspondence.

DERMATOLOGY IN LONDON.

LONDON, December, 1897.

MR. EDITOR: — The first thing that impresses one in a London dermatological clinic is the extreme courtesy shown the visitor, and the second is the kindness toward the poor patient and the thorough and painstaking examination of the case. Drs. Fox, Crocker, Pringle and Galloway have exceedingly interesting clinics, and are all extremely kind in showing them to the stranger. Dr. Galloway, by the way, has just returned from America, and retains a very pleasant remembrance of a week spent in Boston.

One sees here all sorts of dermatoses, but outside of the ordinary cases of eczema and psoriasis, the most frequently recurring are ringworm of the scalp and alopecia areata. Over 90 per cent. of the ringworm cases belong to the microsporon fungus, and are exceedingly persistent and extremely hard to cure. The British medical journals teem with articles recommending remedies quick and certain in their action, but, unfortunately, these articles are never written by dermatologists. The trouble is that the fungus dives down into the hair follicle, and is very hard to reach by any form of medicament. The treatment most in vogue at present is the irritative one. Dr. T. Colcott Fox uses, for instance, after the hair has been shaven, formalin in dilute solution with water, commencing with one part of formalin to eight or ten of water, increasing the strength, if needful, later. This solution is thoroughly rubbed into the scalp every day until an active inflammation is set up, and the fungus is finally gotten rid of by the subsequent separation of the crusts formed. The same result may be obtained by the use of croton oil (one gramme) to the ounce of any of the parasitic ointments. This treatment simulates nature which sometimes spontaneously cures by the formation of kerion. The danger is that abscesses may be caused, but this rarely happens in careful and experienced hands.

Saboraud's theories and conclusions in regard to alopecia areata are discussed in all the clinics. Dr. George Pernet, of the University Hospital, is inclined to favor the microbic origin of this disease, and makes inquiries of all patients as to use of the barbers' clipping machines. He considers the *tondense* a remarkably difficult instrument to sterilize, and believes that it might easily be the carrier of infection. He always searches for the stumpy hairs with their atrophied bulbs, which have been so frequently described — the note-of-exclamation hairs, as they are here called — and likes to demonstrate them under a hand-lens. He believes that they are not only pathognomonic of alopecia areata, but also of strong prognostic value, as their presence denotes activity of the disease, while their absence shows that repair has already begun. There is nothing in the treatment of this condition which differs materially from our own methods.

Psoriasis presents the same difficulties in treatment that it does everywhere else. Dr. Pringle says that, even at the risk of being called old fashioned, he is inclined to favor arsenic pushed to its physiological limits. Dr. Radcliffe Crocker gets the best results from salicin. His average dose for an adult is ten grains three times a day, although he may sometimes commence with smaller quantities. He says that any disease which we have reason to believe may be due to a microbe in the circulation may be benefited by salicin. Thyroid extract, as a remedy for psoriasis, is quite generally discarded, although Dr. Crocker thinks that in some rare cases it may be of benefit. It should not be used in a very active case, because it might increase the activity of the lesions. Neither would it be of benefit in a very chronic case. But he believes that in an intermediate, quiescent state it may do good. In fact, as he says, it is sometimes worth trying, if the patient be robust, because, once in a while, it affects the disease favorably when nothing else will. The chief use for thyroid, however, is in lupus vulgaris. It is used here constantly for lupus, and is generally of value. It does not absolutely destroy the tubercle bacilli, but certainly does check them and prevent the growth of the disease. It is used in all the clinics, and, seemingly, without fear of untoward effects. An ordinarily healthy adult generally takes five grains a day in starting, and increases the dose until he reaches the same amount three times daily. Sometimes the remedy is pushed much higher than this, although in out-patient practice, where the patient cannot be properly watched, it is rarely safe to go beyond the five-grain limit. Unquestionably good results are obtained in very severe cases of lupus vulgaris.

Eczemas, of course, form the great bulk of the cases seen. For seborrheic eczemas, a mild mercurial ointment is most in favor; generally, the ammoniated or the red oxide is used. In dry, cracking eczema of the hands and fingers, Dr. Crocker uses with advantage a solution of the glycerole of subacetate of lead in water, in a strength of about one to eight. Cloths are kept constantly wet in this solution and wrapped around the affected parts.

For old, severe eczemas of the legs, Dr. Fox prefers a modification of Unna's glycerine jelly, which he keeps constantly prepared in the out-patient department. His favorite formula is:

℞	Gelatinæ	15 parts
	Zinci oxidi	10 "
	Glycerinæ	30 "
	Aquæ	45 "

Cautiously melt and combine and add to the mass ichthyol two per cent.

This formula may be modified in various ways to suit the patient. Such a preparation may be kept in an ordinary glue-pot, and heated, when needed, over any kind of burner or spirit lamp.

If there be any open ulcers on the leg, they may be covered with a bit of gauze. The warm jelly is then painted thickly over the eczematous portions, a dusting powder is applied, to take away the stickiness, or else the hardening application may be sopped over with a bit of absorbent cotton, and a firm bandage is placed over the whole leg. After the jelly has been applied, the ulcers may be uncovered, and dressed in any way that the medical attendant wishes. Holes may be cut in the bandage, through which they may be treated every day if necessary. The patient is then sent home, after being enjoined not to disturb the bandage for a week.

This method is considered valuable in private practice, for out-of-town patients who cannot be seen every day. Dr. Fox thinks it superior to the use of plasters, because it does not retain the secretions, and because it cannot be removed and reapplied by the patient. The temptation to scratch is at least lessened, and the bandage is a positive benefit because it gives support to what is generally, more or less, an edematous leg. In eczema capitis of young babies, an old and favorite English remedy is a thin oatmeal water, well boiled and strained. This is soaked on plentifully, to remove crusts, after which any suitable application may be used.

As a matter of fact, I believe that the English clinic has been, perhaps, too much ignored by our students. As I have said, the various hospital physicians are extremely courteous. They are, besides, able and scientific. They do not content themselves with a mere superficial view of the skin lesion, and affect to form a ready and certain diagnosis by gross appearances and treat accordingly, but examine carefully into the peculiarities of the individual, his antecedents, habits and occupation. Tedious stories from garrulous patients are often listened to, but sometimes an important bit of information is gained during the narration. In short, they are not only dermatologists, but also good, all-round, practical physicians, who are thoroughly capable of examining and explaining a case in all its bearings.

Very truly yours,
Wm. G. Macdonald, M.D.

METEOROLOGICAL RECORD

For the week ending January 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S..26	29.89	30	32	28	89	100	94	S.W.	N.	8	7	O.	R.	.26
M..27	29.99	29	35	23	77	76	76	W.	W.	13	18	C.	C.	
T..28	30.36	20	25	15	55	65	59	W.	N.W.	11	4	C.	C.	
W..29	30.22	20	27	12	64	61	62	W.	S.	9	10	C.	O.	
T..30	29.77	36	47	26	83	64	74	S.W.	S.W.	12	12	O.	F.	.07
F...31	29.62	37	40	34	80	100	90	W.	N.E.	6	16	O.	R.	.34
S....1	29.44	30	44	16	88	79	84	N.W.	N.W.	22	20	F.	C.	.13
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 1, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	1,868,060	733	242	10.08	18.76	.84	1.12	2.80
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	461	126	12.98	10.56	1.98	7.92	.66
Brooklyn . .	1,160,000	400	184	12.50	17.75	1.75	6.00	1.25
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	173	53	7.67	13.57	.59	4.72	—
Boston . . .	517,732	194	49	6.24	17.85	1.53	3.06	—
Cincinnati . .	405,000	115	—	5.16	12.90	1.72	3.44	—
Cleveland . .	350,000	91	28	5.50	13.20	—	2.20	—
Pittsburg . .	285,000	96	32	24.96	14.56	9.36	5.20	1.04
Washington .	277,000	100	25	11.00	14.00	4.00	3.00	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Nashville . .	105,050	35	8	2.85	17.10	2.85	—	—
Worcester . .	105,050	18	1	5.55	27.77	—	—	—
Fall River . .	95,919	26	12	15.40	22.10	—	3.85	—
Lowell . . .	87,193	29	11	6.90	17.25	—	3.45	—
Cambridge . .	86,812	29	7	6.90	13.45	—	3.45	—
Lynn	65,220	13	—	6.79	—	—	—	—
Charleston . .	65,165	50	15	14.00	10.00	4.00	—	—
New Bedford .	62,416	20	7	—	15.00	—	—	—
Lawrence . .	55,510	—	—	—	—	—	—	—
Springfield . .	54,790	12	3	—	8.33	—	—	—
Holyoke . . .	42,364	—	—	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	6	0	—	33.33	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	8	2	12.50	37.50	12.50	—	—
Chelsea . . .	32,716	14	1	—	—	—	—	—
Haverhill . .	31,406	10	3	—	20.00	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	5	2	40.00	—	—	—	40.00
Fitchburg . .	28,392	5	1	—	20.00	—	—	—
Taunton . . .	27,812	11	1	—	—	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	3	1	33.33	33.33	—	33.33	—
Everett . . .	21,575	8	2	12.50	—	—	—	12.50
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	3	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,750; under five years of age 832; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 281, acute lung diseases 427, consumption 333, diphtheria and croup 114, typhoid fever 49, scarlet fever 34, diarrheal diseases 31, measles 21, whooping-cough 15, cerebro-spinal meningitis 6, malarial fever 6, erysipelas 5.

From diarrheal diseases New York 6, Pittsburg 5, Philadelphia, Baltimore, Charleston and Fall River 3 each, Brooklyn and Cleveland 2 each, Washington, Providence, Lowell and Cambridge 1 each. From measles New York 8, Philadelphia and Pittsburg 5 each, Brooklyn 3. From whooping-cough New York 6, Brooklyn 4, Philadelphia, Boston, Washington, Worcester and Cambridge 1 each. From cerebro-spinal meningitis Pittsburg and Washington 2 each, New York and Chelsea 1 each. From malarial fever New York and Philadelphia 2 each, Brooklyn and Charleston 1 each. From erysipelas New York, Baltimore, Boston, Cleveland and Charleston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,992,524, for the week ending December 25th, the death-rate was 17.7. Deaths reported 3,730; acute diseases of the respiratory organs (London) 352, measles 199, whooping-cough 102, diphtheria 89, fever 33, scarlet fever 30, diarrhea 27.

The death-rates ranged from 9.0 in Croydon to 26.5 in Swansea; Birmingham 17.1, Bradford 17.8, Cardiff 16.9, Gateshead 13.9, Hull 15.3, Leeds 17.7, Leicester 15.4, Liverpool 17.7, London 18.2, Manchester 19.8, Newcastle-on-Tyne 16.3, Nottingham 19.9, Portsmouth 14.9, Sheffield 19.9, Sunderland 17.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 1, 1898, TO JANUARY 7, 1898.

The leave of absence granted **Major Louis Brechemin**, surgeon, Fort Sherman, Idaho, is extended two months.

The leave of absence granted **Captain William O. Owen**, assistant surgeon, is extended one month.

Leave of absence for one month, on surgeon's certificate of disability, with permission to leave the Department of the East, is granted **Major Charles K. Winne**, surgeon, Fort McHenry, Md.

First-Lieut. Deane C. Howard, assistant surgeon, will be relieved from duty in the Department of Dakota when his services are no longer required at Fort Custer, Mon., and will proceed to Fort Crook, Neb., and report for duty at that post.

Captain Charles F. Mason, assistant surgeon, U. S. Military Academy, West Point, N. Y., is granted leave of absence for two months and seven days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 8, 1898.

A. Farenholt, passed assistant surgeon, detached from the New York Navy Yard and ordered to the Puget Sound Naval Station.

F. W. Olcott, passed assistant surgeon, detached from duty at the Puget Sound Naval Station and ordered to the "Mohican."

T. W. Richards, assistant surgeon, ordered to examination for promotion January 17th, and to the New York Navy Yard.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 30, 1897.

Carter, H. R., surgeon. To report at Bureau, January 3, 1898, preliminary to return South. December 29, 1897.

White, J. H., passed assistant surgeon. To report at Bureau January 3, 1898, preliminary to return South. December 29, 1897.

BOARD CONVENED.

Board convened to meet in Washington, D. C., January 25, 1898, for the examination of applicants for appointment as assistant surgeon in the Marine-Hospital Service.

DETAIL FOR THE BOARD.

H. W. Austin, surgeon, Chairman; **Fairfax Irwin**, surgeon, **G. T. Vaughan**, passed assistant surgeon, Recorder.

APPOINTMENT.

John Q. A. McCollester, M.D., of Waltham, Mass., has been appointed a U. S. Pension Examining Surgeon.

SOCIETY NOTICE.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a regular meeting of the Society at 19 Boylston Place, Wednesday, January 19th, at 8 o'clock.

At 8 o'clock. Short communications by Drs. Brackett, Lord and Morse.

At 8.30 o'clock. Paper: "Yellow Fever," Drs. W. W. Gannett and W. T. Councilman.

E. W. Taylor, M.D., *Secretary*, 416 Marlborough St.

TALKS ON THE HISTORY OF MEDICINE.

Dr. David Hunt, of Boston, will give informal lectures on "The History of Medicine," by invitation of the Harvard Medical Alumni Association, at the Harvard Medical School on Thursdays, January 13th, 20th, 27th, at 8 p. m. The profession and the students of the Harvard Medical School are cordially invited to attend.

J. S. Stone, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Anti-Streptococcus Serum. By C. P. Thomas, M.D., Spokane, Wash. Reprint. 1897.

A Plea for a Uniform Diastase Test. Diastase in Therapeutics. By C. C. Fite, M.D., New York. Reprint. 1897.

A Case of Leucæmia. By J. H. Musser, M.D., and Joseph Sailer, M.D., Philadelphia. Reprint, 1896.

The Thyroid-Gland Treatment of Cretinism, with Report of a Case. By Samuel H. Friend, M.D., Milwaukee, Wis. Reprint. 1897.

Resection and Advancement of the Levator Palpebræ Muscle in Traumatic Ptosis. By Charles A. Oliver, A.M., M.D., Philadelphia. Reprint. 1897.

A Clinical Study of Widal's Serum Diagnosis of Typhoid Fever. By John H. Musser, M D., and John M. Swan, M D., Philadelphia, Pa. Reprint. 1897.

Supplementary Croonian Lecture on Points Connected with the Pathology and Treatment of Diabetes. By F. W. Pavy, M.D., LL.D., F.R S., Consulting Physician to Guy's Hospital, London. Reprint. 1897.

Original Articles.

ON VULVO-VAGINITIS IN CHILDREN.[1]

BY MALCOLM STORER, M.D.

While, thanks perhaps to better hygienic conditions, this disease is less common here than is the case in certain foreign cities (86 cases in 8,481 girls seen by Pott, of Halle), cases are fairly numerous; and as quite a number have happened to come within my personal observation, I have thought it worth while to bring the subject before you in brief form to-night.

Mothers often fail to recognize the importance of a vulvar discharge in a child. While doing district work I frequently ran across cases by accident while examining children for other diseases. I remember one woman whom I could persuade only with difficulty to submit such a case to treatment; for, she said, all her other children had had such discharges and got well of themselves. So they had, but only after a year or two of suffering. I had recently brought to me for incontinence a child in whom a quite severe vaginitis had existed untreated for nearly four years.

As to etiology, cases will fall into two main groups — those due to lowered vitality, and those due to infection.

It is not seldom that we see vaginal discharges in poorly nourished children, especially in those living under bad sanitary conditions. This discharge, milky or nearly colorless, with little or no irritation of the vulva and no urethritis, seems almost a reflex of the poor general condition, without any specific infection. These children are apt to be scrofulous or syphilitic. One in eight of Pott's cases had congenital syphilis. We know how obstinate a simple leucorrhea sometimes is in adults, in phthisis and other wasting diseases. The vagina is normally a nest of bacteria, even after the first bath (Stroganoff); and it seems probable that under such conditions organisms ordinarily innocuous may cause irritation. It is quite possible that decomposing smegma may be the starting-point, as Pozzi suggests. In these cases the microscope will show only single bacteria of various kinds.

Most cases, however, come into the infectious group, which must be still further subdivided into traumatic and gonorrheal.

Traumatic vulvo-vaginitis may follow attempts at rape, violent masturbation, blows on the genitalia, scratching by dirty finger-nails to allay irritation, etc. Probably the cases ascribed to ascarides and other worms are of this nature, the worms being merely accidentally transferred from the anus to the vagina by the same fingers that start the vaginitis.

A history of trauma is to be received with suspicion until gonorrhea can be excluded. Some months ago I saw a well-nourished girl of four who had a copious, irritating, greenish leucorrhea, with the history that a week before its being noticed she had been struck violently in the genitals by a baseball, and that great pain and dysuria had persisted ever since; yet the microscope showed gonococci in abundance, and although I was unable to determine the source of infection, the case was clinically a typical gonorrhea, with urethritis, etc.

In the second division of the infectious cases come those due to the gonococcus. To be sure, some cases are probably due to diplococci closely resembling the gonococcus — that called by Heiman the diplococcus colpitis catarrhalis, for instance, which differs from the gonococcus chiefly in that it does not discolor by Gram's stain. These cases, according to Heiman, do not follow the course of true gonorrhea, the urethra is seldom involved, and they tend to recover spontaneously. While some cases may be due to this diplococcus, the fact remains that by far the greater part of those we see are gonorrhea pure and simple. Cahen-Brach found the gonococcus in 20 out of 21 cases; Dusch, in all of 19; Duprè, quoted by Sée, in all of 23. The cases I have happened to see have been gonorrheal almost without exception. The fact that apparently all possible sources of infection can be excluded is of little value. In such a case Martin found gonococci, and when some of the pus was introduced into a man's urethra, a florid gonorrhea resulted. With persistent questioning one can generally find what would be at least a possible source of gonorrhea; nor is this surprising considering its widespread existence, its highly contagious nature, the lack of cleanliness among the lower classes, and especially the habit many mothers have of sleeping with the latest born, while in the more intelligent classes a child is always at the mercy of a careless nurse.

Infection may be direct or indirect. The infant may possibly become infected at birth by a gonorrheal mother, or later through attempts at rape; but direct infection is vastly less common than indirect. Of 50 cases of Fisher, 49 were indirect. In 86 of Pott, only three followed attempted rape. I have seen only one case of surely direct infection; a girl of four becoming infected by a gonorrheal brother of very tender age, seven, I think. In a second recent case a girl of six slept with a brother of twelve. I did not have an opportunity to examine the brother, but according to his mother he was perfectly healthy; while, on the other hand, it appeared that on several occasions the janitor had taken improper liberties with the child with his fingers, which very probably were not above suspicion. The etiology of these cases may under certain conditions — the question of attempted rape, for instance — be of great medico-legal importance; but possible indirect sources are so numerous that the existence of a gonorrhea in a child, without other evidences of forcible connection, would have, I should think, less weight in substantiating a charge of rape against an individual known to have the disease than would appear at first sight.

Infection may occur in countless ways, such as the use in common of various toilet articles (towels, sponges or soap), or even from bathing in infected water, from sheets, etc., when sleeping in the same bed with infected persons, masturbation with infected fingers or implements, from infected water-closets, chamber vessels, etc. It will be enough to mention some of the classic epidemics. Thus, Suchard had 12 cases due to the use in common of an infected towel. Weil reported an epidemic in which every child in a certain ward, 30 in all, was infected by a rectal thermometer used upon all without being washed. Skutsch reported 236 cases in school-girls, due to the use of a public bath in which it was customary for a large number of persons to bathe in the same water. Sheffield had a similar experience, having 35 cases occur in an institution in which it was customary for 30 children to bathe in the same tub. Some writers go so far as to claim that even most of the cases occurring in the course of exanthems are gonorrheal, the hyperemia of the mucous membrane of the genitals due to the disease making it too receptive to germs that under ordinary conditions it could withstand.

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[1] Read before the Section for Obstetrics and Diseases of Women of the Suffolk District Medical Society, October 27, 1897.

In gonorrhea in children the urethra is apparently quite as apt to be invaded as is the case in the adult, and, conversely, a urethritis is proof of a given case being gonorrheal. There was an obstinate urethritis in 17 out of 21 cases seen by Prochownik, and this proportion has nearly been maintained in my own experience. On the other hand, painful urination is not by any means proof positive of an urethritis, as the pain may be due merely to concentrated urine passing over the inflamed vulva, nor does an apparent hematuria always imply an urethritis. In a recent case of mine in which there was no urethritis the reported bloody urine was found due to an admixture of the sanguineous vulvar discharge. In the later stages of a vulvo-vaginitis there sometimes occurs a pseudohematuria due to a growth of very vascular and easily bleeding tissue around the meatus, which generally passes under the name of prolapse of the urethra.

While gonorrheal cystitis is very rare in children, cases are reported by Cahen-Brach, Comby, Reblaud and Wertheim. I have been unable to find a case in which the kidneys were affected, though according to Marx this may occur. The vulvo-vaginal glands have generally been spared in the cases I have seen. In one Skene's glands were affected, and in two there was an abscess of the gland of Bartholin. The inguinal glands are involved so rarely that an adenitis would suggest a general tuberculosis.

I am inclined to think that an infection of the uterine cavity and an ascending endometritis occurs much more frequently than is generally supposed. One might collect quite a number of reported grave cases of pelvic peritonitis and salpingitis. Loren, Sänger, Steven, Welander, Hatfield, Hubert, Comby, Sheffield and Marx all speak of such cases. In the course of autopsies upon children the latter found pus in the tubes five times, and had several cases of clinical salpingitis following a vulvo-vaginitis. I remember a child of four who in the later stages of a vaginitis had much abdominal pain which was undoubtedly due to a mild degree of tubal infection. A recent case has also complained of vague pelvic pains quite distinct from the discomfort of the vulvitis. As exceptional complications may be mentioned two cases of proctitis mentioned by Sheffield.

Leaving the pelvis, some cases of gonorrheal endocarditis and pericarditis and many of arthritis have been reported, some of the latter leading even to suppuration (Wertheim). Ophthalmia by direct transmission is, of course, quite common, especially in very young children. In one epidemic it occurred in nearly half the cases. As most of my cases were older children, in whom a certain amount of restraint could be exercised, I have been fortunate enough to escape seeing any. Purulent otitis may also occur by direct transmission (Rocas).

As regards sequelæ, beyond the effect upon the constitution of a long-continued suppuration, it is at least worth considering whether some of the cases of stricture of the urethra, which, to be sure, is rare in women, for which no other cause can be found, may not possibly be due to an infantile urethritis. Sänger and others have spoken of the possibility of a salpingitis remaining dormant until the awakening of the sexual system at puberty, and have thus found an etiology for some of the otherwise inexplicable cases of pelvic disease in virgins. Marx had three cases of gonorrheal salpingitis in young women, in all of whom there was the history of an infantile leucorrhea, while the possibility of a recent infection apparently could be excluded. Of course, such cases are not beyond suspicion ; but even if we do not go as far as to agree with Marx that most cases of infantile gonorrheal endometritis are followed sooner or later by trouble with the appendages, it is certain that many are, and it is at least probable that many of the cases of sterility due to an under-developed uterus can justly be referred to the same primary cause.

I have tried to emphasize the fact, that, while gonorrhea has a much better prognosis in children than in adults, it often does have severe and even dangerous complications, both immediate and remote ; and in view of this, the greatest attention should be paid to prophylaxis. If the mother has gonorrhea it should begin at birth, and when nitrate of silver is applied to the child's eyes its external genitals should be subjected to the same treatment. A mother known to have gonorrhea should be warned of the danger a child runs in sleeping with her. A simple catarrhal vulvo-vaginitis is not contagious. Probably many purulent ones are not, but as the microscopical absence of the gonococcus is only negative evidence, it is better to treat all purulent cases as gonorrheal, or at any rate as contagious. If it be impracticable to isolate the child, we should insist that it does not sleep with healthy children, that it has its own wash-basin, towels, sponges, etc., that it should have at least a chamber-vessel set apart for its exclusive use, and that if in an institution it should have if possible a nurse to itself.

The greatest efforts should be made to prevent the possibility of ophthalmia. The child should wear an antiseptic pad, which when soiled should be burned ; and if an infant, the clothing should be so arranged that its hands cannot gain direct access to its genitals, while older children should have it impressed upon them to keep their hands away from both their eyes and their genitals. Sheffield, after having a number of cases of ophthalmia occur in the course of an epidemic of vulvo-vaginitis, in spite of frequent prophylactic washings of the eyes with boracic solution, succeeded in stopping further spread of the disease by having all cases of vulvo-vaginitis wear a bandage which did not allow the hands to be moved lower down than the fifth rib, and having the eyes of all such cases covered every night with absorbent cotton and a bandage. The hands should be well washed with soap several times a day to guard against accidents ; and as they are most liable to become infected during the night, they should be thoroughly washed in corrosive solution every morning. While these precautions may seem excessive, a few cases of ophthalmia will convince most men of their utility.

TREATMENT.

The catarrhal cases, occurring for the most part in sickly children, tend to recover spontaneously with improvement in the general condition, and need practically no local treatment. Purulent cases, on the other hand, are sometimes obstinate to such a degree that in desperation some men have come to regard all local treatment as worse than useless; for instance, Cahen-Brach was confident that his later cases, in which he relied only upon cleanliness and the internal use of balsams, recovered quite as rapidly as those in which he resorted to more energetic measures. Jadassohn says that, with or in spite of treatment, a cure should be expected in about three months. Both these writers admit that many cases last much longer — even for years, sometimes. Far from agreeing with them, I am convinced that treatment not only shortens the attack but also renders complications and sequelæ much less probable.

A host of local remedies have been tried, and most of them with but little success. The dry-packing treatment, sometimes of such value in the treatment of adult gonorrheas, is not applicable to many children; and perforce we must depend upon injections and suppositories. The injection perhaps most frequently used has been corrosive sublimate in solutions varying in strength from 1–10,000 to 1–500; but dissatisfaction with this has led to the use of many other antiseptics and astringents, such as lysol, creolin, carbolic acid (which is especially objectionable from the danger of poisoning), thallin, zinc sulphate (even to the strength of five per cent. daily (Kissel), douches of nitrate of silver in weak solution (1–5,000), or injection of a small amount of strong solution (1–50). Painting the vagina with ichthyol or iodine has had its advocates. Pott advised bougies of iodoform; Comby, of salol; Pozzi, the insufflation of iodoform. Marfan uses bougies of alumnol, three per cent. Cassel uses bichloride, 1–1,000, for three weeks, and then applies one to five per cent. nitrate of silver two or three times a week. Martin advises the injection at first of a one-per-cent. solution of sodium bicarbonate twice a day, then of bichloride 1–10,000, to which is added after a few days one part in twenty of extract of hydrastis, or else the injection of nitrate of silver, 1–6,000.

Whatever local treatment be employed the child should be kept in bed during the acute stage. Walking is generally painful; in fact, it is often the waddling gait that first attracts attention to the trouble. Whether the urethra be involved or not, the child should be encouraged to drink freely and be given mild diluents or balsams — say, ol. santali five drops t. i. d. — which will at least render the urine less irritating to the inflamed vulva. If greatly so, it may be well to allow the child to urinate in a warm hip-bath. Especially nervous children will sometimes hold their water much longer than is desirable, from dread of pain, and such cases can sometimes be helped greatly with cocaine. The genitals should be kept clean with hot boracic solution, which should be used several times a day, and, if necessary, pain should be calmed by sedative washes like that of lead and opium, or by hot, mildly antiseptic compresses. The bowels will, of course, be kept open, partly on general principles and partly to lessen pelvic congestion; in fact, a laxative will often be quite enough to stop the discharge in some of the catarrhal cases. Injections are to be avoided during the acute stage, except perhaps one of warm salt solution or of sodium bicarbonate, if the discharge be very copious. The introduction of anything between the inflamed labia is painful and strong injections only aggravate the discharge.

The method of local treatment that has been most satisfactory in my hands — a modification of that of Marx and Rocas, based upon the suggestion of Janet — is the use of graduated solutions of permanganate of potash. I teach the mother myself just how they are to be given. An assistant holds the child, if very small, in her lap, practically in the lithotomy position, and a No. 10 soft-rubber catheter is introduced into the vagina as far as it will go easily. It is very important that soap be used as a lubricant instead of vaseline. An excess of oil effectually prevents a solution of permanganate from coming in contact with the tissues. It is well, however, to protect the anus with vaseline. A pad saturated with five-per-cent. cocaine may be needed for the first few times to help the introduction of the catheter; but children soon learn not to dread it, and even welcome the sedative sensation of the injection. In two recent cases the hymen had already been dilated by the child's fingers sufficiently to allow the use of a much larger catheter. The vagina is thoroughly washed out with fairly hot solution, best given by a fountain syringe only moderately elevated, and the douche is followed by bathing the vulva with hot boracic solution. The injections, of one pint each, are made twice a day. I start with one-half grain to the pint (1–16,000), and increase the strength by one-half grain every third day at first. After about the ninth day, when the strength will be approximately 1–4,000, I begin to increase by one-half grain daily. I have not cared about going higher than 1–500, and generally stop about 1–800. One-half-grain tablets furnish a convenient means for graduating the strength.

If after four weeks some discharge still continues and gonococci are still present, I follow Currier's suggestion and inject two drachms of two-per-cent. nitrate of silver solution three times a week, alternating with the continued use of fairly strong injections of permanganate. Of course, it is of the greatest importance that local treatment be aided by good food and tonics. Under this treatment a cure has generally been obtained in from six to eight weeks, and I have seen very few complications. I have not been able to abort a case of true gonorrhea and am sceptical about its being done, as children do not often come under observation until the deeper tissues are invaded.

While this treatment has been fairly satisfactory, I think that further observation will show that an almost ideal germicide for these cases has been found in argonin, the new soluble silver-albumin salt, formed by treating sodium casein with silver nitrate and alcohol, which does not coagulate albumin and is not irritating. I have used it in only one case, the history of which is as follows:

P. P., a well-nourished child of four, was first seen six weeks ago. Eight days previously her mother had noticed that her walk was painful and had found a vulvar discharge, but had thought it of no consequence until it became bloody a week later. The child was still somewhat feverish, and was found to have a mild vulvitis and a severe vaginitis, but no urethritis although urination was very painful. At the first examination of the discharge Dr. Lord was unable to identify any gonococci positively, but a few days later he found them in abundance. The child was given alkaline diluents and injections of argonin, at first of five per cent., and after ten days of ten per cent., which I gave myself every second day, using about an ounce at a time. No blood was seen in the discharge after the first injection, and the condition improved with greater rapidity, considering the initial severity, than I remember having seen in any other case. In three weeks gonococci had almost disappeared. At the end of a month I changed to nitrate of silver, two per cent., twice a week, and the child is now almost entirely well.

REFERENCES.

Cahen-Brach. Deutsche med. Woch., 1888, 32.
Comby. Gaz. Heb. de Med. et de Chir., 1896, No. 87.
Currier. Medical News, July 5, 1889.
Fisher. Deutsche med. Woch., 1895, No. 51.
Heiman. New York Medical Record, 1895.
Hubert. Archives of Pediatrics, 1889.
Loren. Jahrbuch für Kinderheilkunde, xxvi, 410.
Janet. Congrès du Chir., Paris, 1892.
Martin. Journal of Cutaneous and Genito-Urinary Diseases, 1892, 32.
Marx. Arch. de Toc. et de Gyn., October, 1895.
Pott. Centralbl. für Gyn., 1888, 493.
Rocas. Arch. de Toc. et de Gyn., December, 1893.
Sänger. Verhandlungen d. Deutsche Gesellschaft f. Gyn., 1882, 255.
Sée. Ann. de Gyn. et d'Obst., July, 1896.
Sheffield. Am. Med. Surg. Bull., 1896, 727.
Skutsch. Archiv. für Derm. und Syphilis, 1891, Heft 2.
Steven. Lancet, May 30, 1891.
Suchard. Rev. Mens des Mal. de l'Enfance, January, 1894.
Weil. Mercredi Medicale, 1894, No. 6.
Wertheim. Zeitschrift für Geb. und Gyn., xxxv, 1, 5.

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SOME RESULTS OF THE POSTURAL METHOD OF DRAINING THE PERITONEAL CAVITY AFTER ABDOMINAL OPERATIONS.[1]

BY W. L. BURRAGE, M.D.

In the *Bulletin of the Johns Hopkins Hospital* for April, 1897, appeared an article on the postural method of draining the peritoneal cavity after abdominal operations, by J. G. Clark, M.D.

As my paper is an attempt to throw some light on the value of this method of drainage by an analysis of cases treated according to Dr. Clark's directions, it may be as well to begin by abstracting his article. He says:

> The general trend of recent medical literature relating to intraperitoneal drainage through the abdominal incision has been towards the limitation or reduction of the number of conditions demanding its employment, and a few European gynecologists have even gone so far as to discard drainage entirely, leaving the peritoneum to protect itself.
>
> The benefits to be derived from any form of drainage when used for the purpose of removing infectious matter from the peritoneal cavity are infinitesimal compared with the untoward or disastrous results which may follow its use.
>
> The greatest safety lies in closing the abdomen without drainage, except in cases of purulent peritonitis or in operations when there has been extensive suturing of the intestines, and in a few other rare conditions. . . .
>
> Escape of pus during an operation, oozing of blood or serum, extensive raw areas in the pelvis, are usually supposed to indicate the necessity of some form of drain; on the contrary, these are the cases which should be left to the care of the peritoneum, as demonstrated by a comparative study in our series of 1,700 cases of abdominal section of a hundred cases each of similar pelvic inflammatory affections, drained and undrained. The undrained cases presented by far the best results.
>
> Every surgeon recognizes the dangers of dead spaces in the abdominal cavity and endeavors to prevent their formation, but frequently this is impossible. Mikuliez first called attention to this subject in a forcible paper, and devised a special drain for the prevention of oozing and for the removal of fluids from dead spaces; but this method, like all others, is unsatisfactory because the principle upon which it is based is wrong.
>
> The chief objections to drainage of dependent pockets in the pelvis or abdomen through an abdominal opening are, first, fluids are frequently not removed, but on the contrary, are pent up by the gauze drain; and second, instead of removing infection, the gauze or tube may be the means of introducing it from the outside into the degenerated fluids.
>
> To overcome the dangers of dependent pockets and dead spaces in the pelvis, I would suggest the elevation of the patient's body after operation to a sufficient height to start the flow of collecting fluids from the pelvis towards the diaphragm, and thus promote the rapid elimination by the normal channels of exit from the peritoneal cavity of infectious matter and of vital fluids which may stagnate in these pockets and form a culture medium for pyogenic micro-organisms.

As regards the employment of salt solution, Dr. Clark says:

> It is a well-known principle in physics that a substance will undergo combustion or solution much more rapidly in a finely divided state than when massed together. The same principle may be applied to the disposal of foreign matter in the peritoneal cavity.

The author then goes on to take up the function of the peritoneum under normal and pathological conditions, and, after reviewing the literature, arrives at the following conclusions:

> (1) Under normal conditions the peritoneum can dispose of large numbers of pyogenic organisms without producing peritonitis.
>
> (2) The less absorption from the peritoneal cavity the greater the danger of infection.
>
> (3) Solid sterile particles, such as fecal matter, potato, etc., are partly absorbed, and the remainder are encapsulated without the production of peritonitis.
>
> (4) Death may be produced by general septicemia, and not by peritonitis, where large quantities of organisms are taken up by the lymph streams.
>
> (5) Irritant chemical substances destroy the tissues of the peritoneum and prepare a place for the lodgement of organisms which becomes the starting-point for peritonitis.
>
> (6) Stagnation of fluids in dead spaces favor the production of peritonitis by furnishing a suitable culture medium for the growth of bacteria.
>
> (7) The association of infectious bacteria with blood-clots in the peritoneal cavity is especially liable to produce peritonitis.
>
> (8) Traumatic injury or strangulation of large areas of tissue are strong etiological factors in the production of peritonitis when associated with infectious matter.

Under the heading of "Mechanism of Absorption of Fluids and Solid Particles in the Peritoneal Cavity," Dr. Clark speaks of the recent investigations of Muscatello on the histology of the diaphragmatic peritoneum and the mechanism of absorption. Muscatello found that beneath the peritoneal endothelium of the diaphragm and between the connective-tissue fibres are open spaces four to sixteen millimetres in diameter, occurring in groups of fifty or sixty, which communicate with the lymph vessels. A careful search for these spaces failed to reveal them in any other portion of the peritoneum.

Attention is called to the fact that it had been proved by experiments on animals that the peritoneum was capable of absorbing the most remarkable quantities of fluids in a short space of time (the equivalent of the animal's entire weight in twenty-four hours), and also that Muscatello had demonstrated the existence of an intraperitoneal current which carries fluids and small particles towards the diaphragm, regardless of the posture of the animal experimented on. The rate of transmission of these particles from the peritoneal cavity to their ultimate repository, the lymph glands, could, however, be increased or retarded by the influence of gravity. The leucocytes are largely the bearers of foreign particles from the peritoneal cavity.

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[1] Read before the Obstetrical and Gynecological Section of the Suffolk District Medical Society, October 27, 1897.

As to the "Postural Method of Draining Dead Spaces in the Pelvis," Dr. Clark claims that by it, first, stagnating fluids are prevented from collecting in dead spaces in the pelvis; second, infectious organisms are quickly carried into normal areas of the body where they are destroyed before they can increase in numbers; and third, toxic substances elaborated by the organisms are diluted and prevented from expending their irritant effects on a wounded area. He describes the method as follows:

> At the conclusion of an operation all fluids and *débris* should be removed as far as possible by sponges, after which the abdominal cavity should be thoroughly irrigated with normal salt solution until the fluid comes away clear.
>
> When the irrigation fluid is all sponged out, 500 to 1,000 c. c. of salt solution should be poured into the peritoneal cavity, so that when the patient is elevated after she is returned to the ward the artificial current may be started at once towards the diaphragm, thus supplementing the normal current.
>
> After the introduction of the salt solution the omentum and intestines should be replaced in an orderly way and the abdomen closed.
>
> As soon as the patient is returned to her room, the foot of the bed should be elevated about twenty degrees (eighteen inches), which gives sufficient inclination of the posterior pelvic wall to assist the flow towards the general peritoneal cavity. This posture should be maintained for twenty-four to thirty-six hours, after which the bed may be lowered.

Dr. Clark's paper finishes with the report of three cases operated upon at the Johns Hopkins Hospital in which the postural method of drainage was employed. They were a suppurating ovarian cyst in two cases and a double pyosalpinx in the other case, and all were bad cases with extensive adhesions. They all made good recoveries.

In a most exhaustive article, entitled "A Critical Review of Seventeen Hundred Cases of Abdominal Section from the Standpoint of Intraperitoneal Drainage," published in the numbers of the *American Journal of Obstetrics* for April and May, 1897, the same author makes a strong argument against drainage through the abdominal incision. At the risk of being tedious I am going to read you the opening paragraphs of his paper. He writes:

> In the following paper I propose to prove, from a review of 1,700 abdominal-section cases from the opening of the gynecological department of the Johns Hopkins Hospital, in 1889, up to October 1, 1896, that not only is drainage valueless in the great majority of cases in which it has hitherto been used, and is still used by some surgeons and gynecologists, but that it is frequently productive of harm.
>
> By clinical observation the conditions supposed to demand drainage have gradually been reduced from a formidable number to a comparatively small one, and I am certain that this number is still too large.
>
> The employment of a drain, as frequently stated by Dr. Kelly, is a confession of imperfect work on the part of the surgeon. That he is unable in some cases to make it better is true, but in many cases a more minute attention to the smaller details of a surgical operation, with a greater reliance upon the ability of the peritoneum and general system to eliminate infectious matter, will overcome many difficulties which are now incorrectly supposed to be obviated by drainage.

I made use of this method of drainage for the first time at St. Elizabeth's Hospital on May 1st. From May 1st to October 1st the method was used there in 27 cases by the different members of the gynecological staff, and at present it is the accepted method in all serious abdominal operations in the gynecological department at that institution.

For the last two years we had been using drainage through the abdominal incision with less and less frequency. Some of us had left salt solution in the abdominal cavity at the close of the operation and all of us, in cases of shock and the loss of much blood, had elevated the foot of the bed after the operation; but the practical abandonment of external drainage together with the use of saline solution and the elevated decubitus had not been given a thorough trial until this summer.

The 27 cases include all of the severe operations, all those where there was escape of pus into the peritoneal cavity or where there was excessive oozing; in fact, those cases in which drainage through the abdominal incision would formerly have been thought to be necessary. There are included among them, however, a few less severe ones, that were treated with the postural drainage before it was evident that this treatment was of no especial benefit in such cases.

A comparison of drained and undrained cases would seem to be hardly profitable because of the impossibility of selecting two series of cases nearly enough similar, but there is no question in my mind but that the undrained cases do better.

All of the 27 patients in my list recovered, but in this respect there is no difference from the recent previous results at St. Elizabeth's Hospital, for only one case out of 167 abdominal operations in the last eighteen months had been fatal, and that one was a case of Cæsarean section operated upon *in extremis*.

In four cases in which cultures were taken from the pus of tubal abscesses streptococci were found in two and were absent in two. As far as could be determined, those in which the streptococci were found had as smooth a convalescence as those in which the streptococci were absent, notwithstanding the fact that in several the pus unavoidably escaped into the peritoneal cavity.

The evening temperature and pulse records for the four days succeeding the day of operation were tabulated in 26 cases, and an average computed of each evening's temperature and pulse. One case was omitted because the patient developed pneumonia. The following table shows the result:

Average Evening Temperature and Pulse for Four Days following Day of Operation. Twenty-six Cases.

	Temp.	Pulse.
First day	100.4°	100
Second day	100.1°	97
Third day	99.4°	92
Fourth day	99.2°	79

Only one temperature reached the 102° mark, and that one was 102.4° on the first night. It declined to 99.8° on the fourth night.

A large increase in the twenty-four-hour amount of urine has been observed after leaving salt solution in the peritoneal cavity. The appended figures show the number of ounces on the four successive days in two cases in which the salt solution was used and in two cases in which it was not used. In the latter two the foot of the bed was not elevated, but the patients received the customary rectal injection of salt solution and coffee at the close of the operation.

TWENTY-FOUR-HOUR AMOUNT OF URINE, IN OUNCES.

	Salt Sol. Used.		*Salt Sol. not Used.*	
	Case 1.	Case 2.	Case 1.	Case 2.
First day	63	41	25	17
Second day	38	62	24	18
Third day	40	47	26	31
Fourth day	33	33	30	25

As a scanty secretion of urine following abdominal operations has long been a well-known phenomenon, and as this has been thought to indicate a deficient elimination of waste products, the effect of the salt solution on the amount of urinary secretion must be considered beneficial.

It was my custom in the first cases on which the postural method of drainage was used to keep the foot of the bed elevated for twenty-four hours only; but after noting that several of the patients complained of pain in the flanks and had a more rapid pulse as soon as the bed was lowered, I adopted thirty-six hours as the proper time for the elevation of the bed, and have since found this time generally satisfactory. I am inclined to believe that the discomfort referred to may be in part, at least, avoided by lowering the foot of the bed gradually, that is, after twenty-four hours let it down half-way, and then lower it entirely at the end of thirty-six hours.

The relief of thirst is quite noticeable after the use of salt solution.

With the foot of the bed raised eighteen inches there is a tendency for the patient to slide towards the head of the bed, and some patients complain of the discomfort attending this sliding. In this position of the body there is some difficulty in swallowing, but this difficulty is overcome by the patient's swallowing slowly. On the other hand, vomiting is much easier in this position. The nurses say that there is less nausea when the bed is elevated; and this opinion coincides with my observation, although I have known of two or three patients with whom the nausea seemed to be exaggerated by the position, notably a patient of one of my colleagues, who was violently nauseated on the night of the day following the operation, and the nausea was entirely relieved by lowering the bed.

In one or two fat women with abdominal distention we have noted embarrassment of the respiration. Distention is much less frequent, and this is probably due, in large measure, to the absence of interference with the intestines by the gauze drain.

Very few patients are able to urinate voluntarily during the first twenty-four hours after an abdominal operation, whether the foot of the bed is elevated or not. With the bed elevated the catheter must be used, unless, as is often done at St. Elizabeth's, both for urination and for the expulsion of enemata, the bed is lowered temporarily.

Patients experience no flushing of the face or headache as a result of the lowered head. They have little or no backache, in marked contrast to the amount of pain suffered after most abdominal operations when the bed is flat. There is less abdominal pain where the postural method is used. This immunity from pain I have thought can be attributed to the freedom of the pelvis from stagnating fluids, for, in the past I have observed that the post-operation abdominal pain was less, the cleaner and freer from oozing the pelvis was left at the close of the operation.

Elevating the foot of the bed has long been considered one of the valuable means of combating surgical shock; the employment of salt solution freely in the rectum and under the breasts has added to our resources; and now if we put hot salt solution in the peritoneal cavity and elevate the bed, we are not only assisting the peritoneum to rid itself of harmful fluids and micro-organisms, but stimulating the vital centres, washing out the kidneys and giving the blood sufficient volume to make good any loss.

On the whole, I think that the results of the postural method of draining the peritoneal cavity following abdominal operations warrant us in saying that the employment of this procedure marks a distinct advance in abdominal surgery.

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A CASE OF ASTHENIC BULBAR PARALYSIS.[1]

BY JAMES L. WHEATON, JR., M.D. (HARV.), PAWTUCKET, R. I.

THE history of the case up to the time of the first medical attendance and the course and special symptoms since are as follows:

Miss A., thirty-three years old, was a school-teacher by occupation. Her father died of heart disease, and her mother of tuberculosis of the lungs. She had a brother and sister who are both living and well. She had never been strong or rugged, but was always delicate, bordering continually on ill-health, and of a very nervous disposition. Menstruation began at fourteen and had always been very profuse, but quite regular. She had had most of the children's diseases, but had never had other severe disease. She had always been a hard student, and was a constant reader. During the last year, she had worked very hard at her school. She held a position in one of the public schools; and as she took a great interest in her work and was ever ready to do whatever extra work she was asked to do, her superior placed upon her a great amount of work. To accomplish this, she would sit up until one and two o'clock at night and arise early in the morning, and sometimes even going without her meals in order to get a certain amount of work done. By the time school closed in the spring she was tired out and very nervous. She could not sleep and was very excitable. About the second week in July, 1896, she went to the dentist and had a tooth extracted. There was some trouble about it; and for some reason, the dentist told her that she must be very careful or her gum would start to bleed and she might bleed to death. This frightened and worried her greatly, and she became even more excitable and nervous. On the night of the 21st of July she had a severe headache, and in the morning she found she could raise her eyelids with difficulty and that the light pained her eyes very much.

I was called to see her on the 22d of July, 1896. I found her condition as follows: She was of average height, delicately built, not very strong muscularly and with a very slight development of fat. She could move about the room readily and was not confined to her bed. Her face was pale and thin, but with a good intelligent expression. The skin on her neck and arms, pale or slightly anemic. There was no eruption, no edema and no scars to be seen. There was a slight moisture. The temperature appeared normal. The pulse was weak, soft and beating 90 per minute. The condition of the arteries was good. Respiration was normal, both in type and frequency. The most striking symptoms were the dropping of the eyelids, the inflamed appearance of the eyes and the general nervous condition of the patient. She complained mostly of her inability to keep her eyelids raised, of the pain which the light caused, and of a dull pain across the top of her head.

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[1] Read before the Rhode Island Medical Society, December 2, 1897.

On closer examination, the lungs were found to be normal. Inspection, percussion and auscultation showed that the heart was normal. The tongue was protruded quickly and straight, and was not coated. The appetite was fairly good. No great thirst, no vomiting and no diarrhea. Upon palpation and percussion, the liver, spleen and stomach appeared normal, and there was no evidence of new growths or disease in the abdomen. The urine proved to be normal on examination.

In regard to the nervous system: There were no abnormal involuntary movements of the muscles. There was no difference noted on the two sides of the face. The movements and appearance of the lips and nose were normal. The pupils were alike. She could wrinkle her forehead, pucker her lips, laugh, blow out her cheeks and stick out her tongue, moving it from side to side. The movements of her eyes were good. She could, however, raise her eyelids with difficulty. Her mouth and pharnyx appeared normal, and she could speak distinctly. She held her head and neck in a good position and without difficulty. There was complete control of the movements of her arms and legs. She had complete control of her bladder and rectum. She could write without difficulty. The sensitiveness of the skin appeared normal to the needle and to warmth and cold. Her muscular sense was good, as well as her senses of hearing, smelling and tasting. Her reflexes were slightly increased.

During the next few days, she grew rapidly worse It became almost impossible for her to raise her eyelids. She began to have double vision, and she experienced some difficulty in chewing her food, and in keeping her mouth closed. She was unable to sleep. She would occasionally have attacks of palpitation.

August 14th, she complained of difficulty of walking. She appeared on walking to balance her body on her hips, after the same fashion that a juggler balances a feather on his nose.

Up to the 2d of August, she had been able to get down stairs and lie on the lounge during the day. After this date, she remained in bed, being too weak to walk even a few steps. The muscles of her neck gave out, and she could keep her head erect for a short time only.

On August 14th, menstruation began, and all her symptoms increased in severity. This lasted for six days and was quite profuse. She began about this time to have difficulty in swallowing.

On August 31st, she had quite a severe choking spell, apparently some food had found its way into the larynx.

On September 7th, she had a very bad spell of difficulty in breathing. It lasted some fifteen minutes. She had another on the 11th.

On the 14th, I was called to the house in a great hurry. I found she had had another attack of difficulty in breathing, just as she was being raised to take some nourishment, and that while held in this upright position she had suddenly ceased to breathe. Her heart was just fluttering when I arrived. This lasted but a minute or two. She had died from a paralysis of the muscles of respiration.

The foregoing data are a few landmarks of the disease, showing merely an outline of its course. The other important symptoms appeared so gradually that no exact date could be given of their appearance or disappearance; and of these latter I will speak now more at length. First, in regard to her nervous symptoms. Her mind remained clear during the whole course of the disease. She was for the greater part of the time despondent, looking at the worst side of her case. She was very fretful, continually asking something to be done for her and never satisfied when it was done. She slept very little, averaging only two or three hours in the twenty-four. About once every week she would have an attack of severe pain in her head, and usually after the attack her symptoms would increase in severity. Her reflexes increased gradually during the disease. During the latter half, upon striking the patella-tendon, you would get not only a twitch of that leg, but even a greater one of the other leg. The paralysis seemed to begin with her eyelids and then work downwards. It did not, however, at any time appear to be a true paralysis. It seemed rather that the muscles were tired out, and with rest they could perform their functions once more. As evidence of this is the fact that the *continued* paralysis appeared only in those muscles which were obliged to be used constantly, such as the eyelids, the muscles of the eyes, the muscles of mastication and deglutition. There was also the fact that although there appeared no evidence of paralysis in the muscles of the extremities with the ordinary movements, yet when you called upon her to do certain movements for some time, they would be done rightly at first, but would grow gradually weaker, until at last they could not be done at all. This was seen in walking upstairs. She could go up two or three steps all right, but then she would begin to have difficulty, and before reaching the top would give out completely. In walking on the level, she would go half-way across the room all right, then the muscles keeping her body erect would gradually give out, and she would have the balancing appearance, which I spoke of above. Swallowing was also an evidence of this. She could swallow three or four times well, then she gradually lost power, and she would have to rest some time before attempting it again. After two or three hours' rest, all her symptoms would be better. She could open her eyes wide. She could close her mouth, and she could swallow without difficulty. This apparent paralysis would vary in severity from day to day. She would go sometimes one or two days with but little difficulty with any of her muscular functions. Upon my morning call on the day she died, I found her in the best condition since she had taken to her bed. She could open her eyes wide, she could swallow well and breathed without difficulty. During her sickness she did not lose much weight. Her muscles did not atrophy. The muscles of her tongue did not atrophy; there were no furrows or depressions; and the individual fasciculi exhibited no active fibrillary contractions. The lips did not atrophy, neither did they grow thin and wrinkled. Her temperature at no time went above 101°, and for the greater part was normal. The pulse-rate never exceeded 120 per minute and was generally between 90 and 110. She experienced very little pain, other than in her head. Her appetite remained good all the time. She never had any gastric troubles and her bowels were always regular. No time did she lose control of her bladder or rectum. No eruption appeared on her skin at any time.

After watching the case carefully for some time, the complexity of the symptoms gave me great doubts as to the diagnosis. I asked Dr. Gorton to see the case with me, which he kindly did. After going over the case thoroughly we came to the conclusion that it was a case of asthenic bulbar paralysis. The reasons for this conclusion were as follows:

From the fact that her organs of respiration, circulation and digestion gave no evidence of disease, we are brought directly to the nervous system as the location of her trouble. The ptosis, the disturbance in the functions of speech, of mastication and of deglutition give evidence of trouble in the neighborhood of the bulbar processes, while the continued clearness of the intellect, the lack of characteristic pain, of hemiplegia and other symptoms of cerebral disease lead us to confine our thoughts almost entirely to the different diseases of the structures at the base of the brain.

Acute and apoplectiform bulbar paralysis, due either to hemorrhage into the medulla oblongata and the pons or to embolism and thrombosis of the basilar artery, is more sudden in its appearance, and the duration of the disease is either but a few days, or, if it does continue, there exists a crossed hemiplegia. Then, too, acute or inflammatory bulbar paralysis is more sudden in its appearance and but a few days brings it to a fatal termination. Compression of the medulla, by new growths and the like, differ from the case in hand, in that when the medulla is compressed there are initial symptoms of irritation and a greater complexity of clinical phenomena, like sensory lesions and hemiplegia, and an asymmetry of certain symptoms.

Now let us consider progressive bulbar paralysis, which belongs to the group with progressive muscular atrophy, and amyotrophic lateral sclerosis, the last two differing from the first in the location of their lesion rather than in the lesion itself. In progressive bulbar paralysis the symptoms are very slow in development. There are mild premonitory symptoms, such as painful sensations in the back of the neck. Then, too, it is exceeding rare to find ptosis at first or at any time during the disease. Disturbance in the utterance of the letters in which the tongue plays an essential part is the first thing generally noticeable. The tongue atrophies and becomes flabby and thin, furrows and depressions come upon it, and often the individual fasciculi show active fibrillary contractions. None of these phenomena are seen in our case. At the same time with the change in the tongue, changes are taking place in the muscles about it. The lips become thin and stiff and are unable to be puckered so as to whistle. The muscles of mastication give out, and the jaw drops, which, added to the impairment of movement in the muscles supplied by the lower half of the facial, give to the expression a persistent lachrymose character. Then comes the trouble with the muscles of the pharynx and larynx, and great impairment in swallowing is produced, and the liquid ingesta are regurgitated through the nose, and the production of many sounds as *B* and *P* is impossible. Although we have in our case the difficulty in mastication and deglutition, yet it differs from the condition seen in progressive bulbar paralysis, in that in the latter, when the paralysis comes on, it is persistent, while in our case at any time with a little rest the muscles would do their work well for a short time. This characteristic holds good in all the affected muscles. It is not a true paralysis, as you find in progressive bulbar paralysis, progressive muscular atrophy and amyotrophic lateral sclerosis, but rather a tiring of muscles which rest restores to their normal condition. Then, too, you do not see in our case, as in the other three diseases mentioned above, an atrophy of the muscles. They remained about the same throughout the whole course of the disease. This weariness of the muscles was not confined to the muscles supplied by the basilar neuclei, but existed all over the body. It was a general condition, but was noticeable more in those muscles which kept continually in active service. It was due to this continued use that the paralysis seemed real in the case of the ptosis, the muscles of the eyes and of mastication. Could they have been put at perfect rest, they would have acted like the other muscles. So much for the motor symptoms. The reflexes show a difference. In progressive bulbar paralysis the reflexes are greatly diminished or even absent, while in our case the reflexes are greatly increased. Our patient's pulse never went above 120, while in the other diseases it reaches as high as 160 per minute. Progressive bulbar paralysis lasts several years, from two to five, while the duration in our case was not quite three months.

The diagnosis becomes harder when we consider pseudo-bulbar paralysis or glosso-labio pharyngea. This disease differs from progressive bulbar paralysis and simulates our case in the more sudden mode of onset, in the frequent remissions, and the fact that the muscles do not atrophy; yet it differs from both in its longer duration, its asymmetry of the paralysis, which is especially seen in the orbicularis oris, and in the fact that although there are remissions in the disease, yet they are not of the same character as in the case before us; that is to say, while the attack is on, there is a true paralysis, and no amount of rest will bring it back into condition. In this case, however, the remissions are of very short duration and are brought about by rest. Then, too, no cause for such disease could be found in the condition of the arteries or heart.

If we cannot place our case in any of the preceding groups of disease, where will we place it? We must find a class of cases which have as their characteristics a functional disturbance of the whole muscular system, which disturbance is apparently a tiring of the muscles by use, and which can be restored in some degree by rest, and a disturbance not accompanied by atrophy of the muscles. Up to the present time, only twenty cases of such a nature have been reported. Erb, in May, 1878, reported three cases, but it remained to Oppenheim to put forth the first exact description. Since then, cases have been reported by Eisenlorh, Wilks, Shaw, Goldflam, Senator, Hoppe, Remark, Strümpell, Jolly, Pineles, Mayer, Charcot and Marinesco, and Fajerztajn. In all making twenty cases. Oppenheim, from the fact that it was so like progressive bulbar paralysis, yet upon autopsy no pathological changes could be seen, gave to the class the name of "bulbarparalyse ohne anatomischen befund." This appellation did not give any suggestion of the characteristic muscular phenomena. Strümpell, to overcome this, called it asthenische bulbarparalyse, or asthenic bulbar paralysis. In Jolly's investigation into his cases, he found that the cause for the muscular disturbance lay for the most part in the muscles themselves, for unlike normal muscles when stimulated directly by the electrical current, the tonic contractions would last but a short time and the muscles becoming soon tired out, relaxed, even while the current was being applied, showing, as he says, some change in the muscular structure itself. He therefore called it myasthenia pseudo-paralytica gravis.

Whatever name may be given, they all have the same important diagnostic points: the ptosis, the disturbance in mastication, deglutition and speech, the peculiar phenomena shown in the muscular functions, the lack of atrophy of the muscles and the comparative short duration of the disease.

Of the cases which have come to autopsy, no pathological changes have been found.

As to what the etiology may be, it is uncertain; probably worry, excitement and overwork, coupled with a nervous temperament, play an important part.

One or two cases started with a bad cold.

Of the twenty-one cases reported, twelve died. Two of the others passed out of observation, but, from their condition, probably died. Only seven recoveries are reported.

The treatment consists of absolute rest, forced nutrition, light massage and electricity applied to the muscles, and general galvanism. Internally, strychnine, arsenic and phosphorus have been used.

No autopsy was allowed in this case; but I feel sure if one had been held, no pathological changes would have been found. From the course and symptoms of the disease, reasoning by analogy, we have a right to call this case one of asthenic bulbar paralysis.

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Medical Progress.

REPORT ON GENITO-URINARY SURGERY.

BY F. S. WATSON, M.D., BOSTON.

CATHETERISM OF THE URETERS IN THE MALE.

Meyer[1] describes the manner of catheterizing the male ureters; it is an extension to the male of the method used by Dr. Howard Kelly in the female.

The bladder is washed out and cocainized, and from five to seven ounces of clear fluid are introduced. The ureter cystoscope, containing the ureter catheter, is then passed; after the interior of the bladder is inspected, and the ureteral openings have been seen, the catheter is inserted for a distance of two inches into the ureter.

LITHOLAPAXY.

Richard Baker[2] publishes 204 cases of litholapaxy performed in India, in addition to the 200 already reported by him in the *Lancet* of October 10, 1896. These 404 cases furnish another example of the remarkable low mortality which attends the operation of Bigelow as it is practised in India by British surgeons upon native patients, it being in his last series 0.49 per cent. The cases are tabulated and summarized as follows:

Mussulmans	168
Hindoos	36
Males	200
Females	4
Ages under one year	1
One to three years	65
Six to ten years	36
Eleven to fifteen years	4
Sixteen to forty-five years	53
Forty-six to fifty-five years	28
Forty-eight to sixty-five years	13
Over sixty-five years	6
Average duration of operation	12 min. 19 sec.
Average weight of stone	2 drachms, 46 grs.
Average stay in the hospital	little under 2 days

The strikingly successful results of this operation in the hands of surgeons in India are probably to be referred to the enormous number of cases of stone which occur in that country as compared with others, and the greater technical dexterity gained thereby by the operators, and to the peculiar power of the native to withstand surgical operations. The same proportion of success cannot be expected to be reached elsewhere.

URETERO-PYELO-NEOSTOMY.

Bazy[3] reports two cases of large hydronephroses, in which, avoiding nephrectomy, he restored the free flow of urine through the ureter, in the first instance by resecting the ureter and implanting its distal end in the pelvis of the kidney. The kidney was reached by median laparotomy. The fluid was withdrawn from it by an aspirator, and its pelvis incised, the orifice of the ureter was found to be compressed by the distended pelvis, far up upon one side of which it took its origin. A catheter was passed into the ureter through the incision in the renal pelvis, and a portion of the ureter was resected; the free end was then slit upon one side slightly in order to make a larger entrance, and was sutured into the most dependent portion of the renal pelvis; the soft catheter was passed into the ureter through the wound in the pelvis, a hole being cut in that portion of the instrument which lay within the pelvis of the kidney in order to drain the latter. The wound of the renal pelvis was then sewed to the abdominal wound, the catheter passing out through the latter. The patient made a good recovery. The urinary fistula closed, and the restored ureter performed its function adequately. The second patient died.

TOTAL EXTIRPATION OF THE BLADDER FOR DIFFUSE CANCER.

Tuffier[4] gives the case of a man forty years old, who had had symptoms of dysuria, hematuria, and painful micturition for several years. Tuffier performed a suprapubic cystotomy, and found a diffuse cancerous growth occupying almost the whole of the interior of the bladder, but not extending beyond the organ, there was no glandular involvement discoverable. The operator succeeded in freeing the peritoneal investment of the bladder entirely from the organ without opening the peritoneal cavity. The ureters were cut off and implanted one into either side of the rectum, and ureteral catheters attached by a stitch in each ureter were led through the anus. The abdominal wound was closed except at its lower angle, through which it was drained. A urinary fistula established itself through this wound a few days after the operation. The patient made, however, an excellent recovery, and was able to resume his work. The date of the last examination of the patient after the operation is not stated.

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[1] Journal Cutaneous and Genito-Urinary Diseases, June, 1897.

[3] Lancet, September 11, 1897, p. 648.

[3] Revue de Chirurgie, May 10, 1897.

[4] Ann. des malad. des Org. Genito-Urinaries, t. xv, p. 130.

SARCOMA OF THE KIDNEY IN CHILDREN; A CRITICAL REVIEW OF THE PATHOLOGY, ETC., AS SEEN IN ONE HUNDRED AND FORTY-FIVE CASES.

George Walker, Baltimore, in this instructive contribution, summarizes and analyzes this large number of cases, and makes the following conclusions: Malignant tumors of the kidney in childhood occur most frequently either congenitally or within the first few years of life. That they are all of them probably embryonic in origin is evidenced by the fact that they contain distinctly embryonic tissue. While not being pure sarcoma, they resemble it in their most prominent features. They are rapid in growth, and are not attended with any distinctive systemic symptoms in the first half of their course; in the latter part of it they are accompanied by rapid and great constitutional disturbance.

They occur most frequently between one and two years of age. The left kidney is more often affected than the right. The disease occurs with about equal frequency in males and females. The average duration of life without operation is about 8.08 months; with operation it is 16.77 months.

Operative treatment, to be successful, should be instituted early; but even in the late cases an exploration should be made. The immediate operative mortality is 38.25 per cent.; the ultimate one between 74.32 and 94.53 per cent.; 5.47 per cent. are cured; and the period of living is lengthened by 8.08 months by operation.

RESECTION OF THE KIDNEY.

Bloch [5] operated upon a boy thirteen years of age who had pain in one kidney and hematuria for two and a half years. The lower end of the kidney was occupied by a circumscribed tumor (which subsequent microscopic examination showed to be malignant). He resected the lower half of the right kidney, suturing the stump. The wound healed promptly and nine months later showed no evidence of recurrence. Bloch reports ten other cases of resection from the literature of the subject, and considers the operation indicated in certain cases of urinary fistula, of trauma, inflammatory processes, and in benign tumors of the kidney which are circumscribed and not too large.

CYSTIC TUMOR OF THE BLADDER, CONTAINING CALCULI, SUCCESSFULLY REMOVED.

P. J. Freyer [6] describes the case of a man thirty-six years of age who had urinary symptoms for ten years, following a fall upon the loins. The principal symptoms were pain in the region of the right kidney, intermittent hematuria, pyrexia, and cystitis. For several years the bladder could not be emptied naturally. He passed two or three ounces by straining; the rest of the urine could only be passed by lying down or else had to be drawn by a catheter, the cystocope showed a tumor about the size of a walnut near the base of the bladder.

September 30, 1896, the bladder was opened by a suprapubic cystotomy, and a tumor of the size mentioned above was found attached by a thick pedicle near the orifice of the right ureter. The tumor was drawn upward, its pedicle clamped and divided, the stump was cauterized and the pedicle tied by two ligatures. The tumor was cystic, with smooth surface except at one point from which grew a small papilloma; within the cyst were two calculi, one the size of a small walnut, and the other the size of a pea. The patient made an excellent recovery, and twelve months after the operation was in perfect health.

The cyst was single-walled, composed of fibrous tissue, covered both inside and out by transitional epithelium such as is found in the bladder and ureters. It was probably formed by the lodgement of the calculi descending from the kidney in the lower part of the ureter, where it passes through the bladder wall. Under pressure from the urine they bulged the bladder and ureteral walls into the bladder; and subsequently this bulging, becoming narrower above, formed within the bladder the pedunculated tumor found at the time of operation.

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RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., AND WILLIAM D. HALL, M.D., BOSTON.

(Concluded from No. 2, p. 36.)

GONORRHEAL ARTHRITIS.

Weiss [22] observed a hospital attendant who had always been healthy. Five weeks after an accidental contamination of the conjunctiva with some urethral pus from a patient, which resulted in a violent purulent conjunctivitis, he experienced a severe pain in the right knee-joint and redness of the skin thereabouts. There was pain on movement, but no effusion into the joint, which, however, disappeared after a week to reappear in two weeks in the tibio-tarsal articulation. The patient never had an urethritis. In other cases which have been observed gonococci have been found in the joint effusion and afterwards cultivated.

HOLOCAIN.

Heinz and Schlösser [23] have together studied the muriate of a substance recently described by Täuber, of Berlin, as p-diathoxyathenyldiphenylamidin. It arises from the union of phenacetine and phenetidin, and is closely related to the former; it is a strong base with a melting point of 121°, insoluble in water but soluble in alcohol and ether. The muriate (holocain) is easily crystallizable, and neutral in reaction. It is soluble in hot water, less so in cold, and has a saturation of from one to two per cent. on cooling. A one per cent. solution caused no irritation to the conjunctiva of rabbits, five per cent., slight; whereas the powdered drug caused tears, swelling and redness of the conjunctiva. A 0.2 per cent. solution is the weakest which will produce complete anesthesia by a single instillation in rabbits, and with a one-per-cent. solution complete anesthesia comes on in fifteen seconds and lasts fifteen minutes. The anesthesia is produced by a paralysis of sensitive nerve endings. Upon the eye it has no effect other than the anesthesia. It is without influence upon the pupil, the mechanism of accommodation or the calibre of the vessels. It causes contraction of striped muscle, with subsequent loss of response to electrical stimulation; and to the lower organisms it acts as a protoplasmic poison. It energetically inhibits the growth of bacteria, and a 0.1 per cent. solution will delay fermentation and putrefaction, while a one per cent. solution is a powerful antiseptic. The cloudy appearance noticed during sterilization is due to precipitation of a small portion of the base by the slight amount of alkali set free from the containing vessel of glass during the boiling. This loss is infinitesimal and can be avoided by use of porcelain.

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[5] Centralblatt für Chirur., November 6, 1897.

[6] Lancet, November 13, 1897, p. 1246.

[22] Ueber Arthritis nach Conjuncitvitis blennorrhoica, Klin. Monatsbl., March, 1897.

[23] Holocaïn, ein neues Anestheticum, Klin. Monatsbl. f. Augenheilk., April, 1897.

Holocain is a powerful convulsive poison analogous to strychnia. An injection of .002 g. will cause increased reflex irritability in the frog, but no spasms; and in the cold-blooded animals there is also noticed a curara-like effect upon the motor-nerve endings, which is likewise noticed after large doses of strychnia. In the warm-blooded animals only the spasmodic appearances are at hand. The toxic dose for a medium rabbit is .01 g., and in five minutes there are convulsions with trismus, which soon become general. There is then a period of comparative quiet, followed by other convulsions.

The lowest anesthetic dose for rabbits is holocain 0.2 per cent., cocain 0.2 per cent., and eucain 0.5 per cent.; while the lowest toxic dose for rabbits of 1,500 g. is holocain .01 g., cocain .05 g., and eucain .075 g. A complete anesthesia can usually be produced by a 0.5 per cent. solution but a one per cent. solution is to be recommended. The effect is complete at the end of one minute and is at first accompanied by a sensation of smarting, which, however, soon ceases. There is also a slight redness of the conjunctiva of the bulb, which quickly disappears. The full effect of the drug lasts about ten minutes, and gradually passes off. Introduction of the one per cent. solution into the anterior chamber quickly rendered the iris and ciliary body anesthetic and was not followed by unpleasant after-effects. The effect on the surface of the cornea was not so noticeable as in the case of cocain; it only acts upon the nerve endings and not on the vessels, therefore does not affect the vitality of the cornea as does cocain. That it does not affect the pupil, accommodation or tension is an advantage. It is in itself an antiseptic.

RÖNTGEN RAYS IN OPHTHALMIC SURGERY.

At the meeting of the American Medical Association, June, 1897, in speaking of cases of his own, Dr. Hansell said that his method was to bandage a photographic plate to the side of the head and to arrange the Röntgen tube in front and to the nasal side of the eye at an angle of 45° and at about fourteen inches distance. Dr. Sweet described an apparatus consisting of two metallic points, to be placed in front of the eye at a known distance and at a known distance from each other, and a plate-holder to be fastened to the side of the head. The Crookes tube is placed in the horizontal line with the point which is opposite the centre of the cornea to the nasal side and thirteen inches from the eye. A second picture is taken with the tube placed at a point below the metal indicators. From these two pictures the exact location of the foreign body can be calculated. The bony wall of the orbit does not offer much resistance to the rays; the small focus tube is to be used; minute bits of metal can be indicated; ordinary landscape plates are sufficient; exposure is four minutes.[24]

HEMORRHAGES IN THE FUNDUS IN THE YOUNG.

Abadie[25] has noticed that the hemorrhages which frequently occur in the eyes of infants and young adults are often preceded by epistaxis and that an examination of the blood shows a diminution of the red blood-corpuscles. In this connection he does not consider those dependent upon Bright's or diabetes. He advises sulphuric lemonade, iron and ergotin, but has not succeeded well with quinia and the iodides. Those hemorrhages that are sometimes noticed in adults who show no other morbid symptoms are benefited by subcutaneous injections of mercurials.

RETINAL GLIOMA.

Greeff[26] believes that, because transverse sections of gliomata show a ring of well-colored cells around each vessel, which disappear when the growth breaks through the sclera, this peculiarity should be no reason for separating such tumors of the retina from similar tumors of the brain. The difference between the cells surrounding the vessels and those in other parts of the tumor is due to intra-ocular pressure preventing sufficient nutrition to certain neoplastic elements causing retrograde metamorphosis in those portions away from the vessels. The discovery of "spider cells" in the optic nerve and retina suggested that search be made for them in glioma. A Golgi-Cajal preparation of retinal glioma presents cells quite characteristically arranged. In addition to star-shaped cells with numerous and fine ramifications (true neuroglia cells), which compose the greater part of the neoplasm, there are branching cells which by their form resemble the large cells of the ganglionic layer of the retina. These latter are three kinds: (1) large cells, six or eight times as large as the "spider cells," with long dichtotomous branches and identical with the ganglionic cells of the retina; (2) smaller cells, round or polyhedric and distinguished from their analogues in the ganglionic layer as much by their ramifications as by their complicated form; (3) the smallest and most curious of all, which, on section, are found to possess numerous long filaments, which, at a certain place, have an enlargement resembling a cell with bright staining nucleus. These structures are distinguished from the radiating fibres of the retina by their complicated structure, being larger and having lateral ramifications. They resemble, on the contrary, the embryonic cells of the retina discovered by Cajal. In addition to these there are small nucleated cells without protoplasmic prolongations and identical to the neuroblasts of His. The normal retina contains the "spider cells" only in the nerve fibre and ganglionic layers; so probably glioma takes its origin in one of these layers, although, as has been well established by Cajal and others, cells peculiar to one layer may be found in another, as it is possible it may take its origin in any of the layers.

TOXIC IRITIS.

Hilbert,[27] after mentioning experiences of others with cases of iritis due to various causes, such as injudicious use of irritating ointments and collyria, the direct effect of micro-organisms or their derivatives, caterpillars, hair, etc., describes one of his own, in which a woman came to him on account of a severe inflammation of the eye which came on two days previously, after having applied the juice of the tithymalus cyparissias scop., one of the euphobiaceæ, to the upper lid in order to remove a wart. The reaction was quite severe, going on to hypopion, with deposits upon the membrane of Descemet and capsule of the lens; but the final result was satisfactory. From it is prepared ol. lathyridis, used as a drastic and for the expulsion of tapeworm.

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[24] Ophthalmic Record, July, 1897.

[25] Les hemorrhages du fond de l'oeil chez les jeunes sujets et les adultes, Soc. d'Ophthal. de Paris, April, 1897.

[26] Etude sur le gliome de la retine, Deutsch. med. Woch., 1896.

[27] Zur Kenntniss der Iritis toxica, Centralbl. f. prakt. Augenheilk., February, 1897.

SUPRARENAL EXTRACT.

Koenigstein[28] in a communication before the Medical Club of Vienna, regarding his experiments with an extract of the suprarenal capsules, said that he had noticed an elevation of the blood pressure. An anemia follows its application to the conjunctiva; while between twenty and thirty minutes after the instillation of a ten-per-cent. solution into the cul-de-sac the palpebral opening became smaller and the conjunctiva paler. The sensibility of the cornea remains, but after repeated use the pupil dilates, without, however, modifying its reflex activity. In all inflammatory affections of the eye an anemia followed its use, but the action is superficial being limited to the conjunctival vessels. It leaves the retina unaffected, does not penetrate to the anterior chamber, and acts by causing the smaller vessels to contract.

New Instruments.

A NEW HEAD-SUPPORT FOR CARIES OF THE SPINE.

BY ERNEST BOYEN YOUNG, M.D., BOSTON.

IN the treatment of spinal caries where the disease is between the mid-cervical region and the fifth dorsal vertebra, the position and support of the head is important; while in the upper cervical region fixation must be added to the two requisites already mentioned.

With almost every form of apparatus used for this purpose the weight of the head is borne at two points, the chin and occiput. The natural tendency of the head is to fall forward; and hence the greater amount of pressure comes upon the chin unless the head is thrown backward to an unsightly and uncomfortable degree. As a consequence of this and the thinness of the tissues over the jaw, sores are apt to result even in the most carefully fitted apparatus.

The principal objection is, however, deficiency of fixation; for if applied in such a manner as to fully carry out their intended purpose, the child is unable to open the mouth and the apparatus must be loosened during meals.

The tissues at the back of the neck and directly under the occiput are thick and not especially sensitive. It was with the idea of receiving the weight of the head on a cushion at this point, leaving the chin entirely free, that the writer devised this head-support, which is designed to be used with the Taylor brace.

The head-rest, as will be seen from the illustrations, consists of a padded U-piece which supports the weight of the head and is attached to the collar-post at a point directly under the occiput. Passing forward from the ends of the U-piece above the ears are two pads which fit closely to the sides of the head. A leather strap across the forehead attached to the ends of the pads holds the head firmly upon the U-piece. The pads prevent lateral motion; while the U-piece behind renders impossible the downward motion of the occiput which always accompanies all backward movements of the head. Forward motion is, of course, prevented by the strap across the forehead.

As is shown in Fig. 1, F is a brass or iron socket, prevented from twisting from side to side by a pin in the back of the collar-post, which slips into a slot at E. Through the upper part of this socket a U-shaped piece of steel wire, one-fourth of an inch in diameter, passes upward behind the ears, and at a level with the middle of the forehead makes a sudden bend and runs forward over the ears to a point about one inch behind the external edge of the orbit. The portions between A and H and G and D are flattened from side to side and curved to fit the head. Pieces of sole leather, one and a fourth inches wide, are attached to their inner sides extending slightly beyond the buckles for the forehead strap at H and D, and also slightly beyond the bends at G and A.

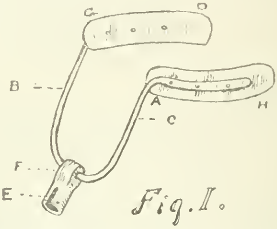

Fig. I.

From C to B the wire is padded with saddler's felt to any desired thickness and covered with leather. This padding should exactly fit the curve of the head.

It will sometimes be found of advantage to give the bottom of the U a curve with the concavity forward; as in heads without a prominent occiput this gives a firmer support. Care must always be taken that the support does not impinge upon the back of the mastoids or excoriations will result.

The forehead-strap is made of some pliable leather, and should be about one inch in width.

The best method of measuring for this apparatus is with some fairly pliable wire which can be accurately fitted and then removed without losing its shape; the machinist making the U-piece enough deeper to allow for padding to the exact shape and size of the pattern.

If accurately fitted, it will be found necessary in applying the support to first slip the forward ends of the side pieces onto the head and then swing the U-piece downward under the occiput before attaching to the brace. The head is then pulled back over the cushion, which acts as the fulcrum, and the strap adjusted to hold it in place. The upward thrust thus applied is regulated by raising or lowering the collar-post.

It is very important that the U-piece fits closely to the back of the neck, as is shown in Fig. 2, so that the pressure falls upon the muscles at the back of the skull; otherwise it is apt to cause occipital neuralgia.

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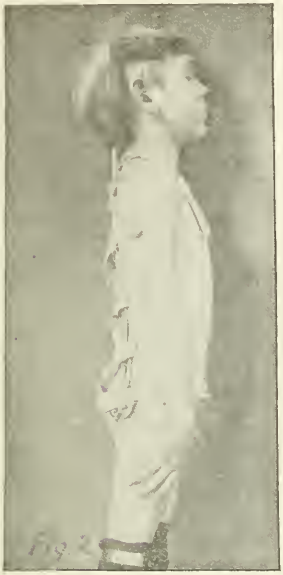
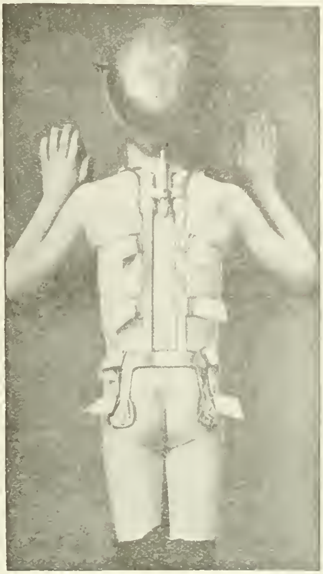
[28] Emploi de l'extrait surrénal en ophthalmologie, Ann. d'Oc., July, 1897.

This head-support is not well adapted to children with large parietal bosses. It is also unsuitable for cases where there is a lack of intelligent care, and hence is unfit for the average out-patient case. With the exceptions stated above and some which may arise from personal idiosyncrasies, there seems to be no contra-indication to its employment for the treatment of any case of spinal caries where it becomes necessary to control the head. For such cases it offers very satisfactory fixation, the comfort of freedom of motion of the jaw and simplicity and cheapness of construction.





The following cases are published through the courtesy of the staff of the Children's Hospital and the staff of the House of the Good Samaritan.

Case.	Age.	Sex.	Age of disease.	Seat of disease.	Deformity.	Torticollis?	Previous treatment.	Time of treatment with present apparatus.	Subsequent history.
1. E. T. R.	5 yrs.	M.	16 months.	4 and 5 dorsal.	Slight.	None.	Plaster jacket and chin support.	One and one-half years.	Doing well at present time. Has worn apparatus constantly since first applied.
2. K.M.M.	3½ yrs.	M.	6 months.	Cervico-dorsal.	Slight.	None.	Partial paralysis. Frame for 3 months.	One and one-half years.	Child in good condition at present time. Has worn apparatus constantly since first applied. Ambulatory treatment for 6 hours daily.
3. H.C.G.	7½ yrs.	F.	Unknown. Some mos.	Cervico-dorsal.	Slight.	Present.	Brace with Thomas collar tried without success.	One year.	Did well in hospital; but poor care outside made change of support seem best.
4. G. W.	2 yrs.	F.	Unknown.	High cervical.	Slight.	Present; not reduced by bed treatment.	Bed with head extension.	Four months.	Did not do well. Subsequent treatment not fully carried out.
5. K. S.	6 yrs.	M.	4 months.	Cervical.	Slight.	Present.	Deep cervical abscess. Recumbency for six weeks.	One year.	In excellent condition. Has worn apparatus constantly.
6. J. N.	10 yrs.	F.	4 years.	4-8 dorsal.	Much.	None.	Treated with plaster jacket and jury mast 2 yrs. Brace 1 year. No apparatus 1 year; paralysis at entrance. Bed treatment in hospital two and one-half months.	Six months.	Doing well when last reported, about six months after application of apparatus. Able to walk.
7. McF.	6 yrs.	F.	1½ years.	High dorsal.	Considerable.	None.	Brace and head support 1 year. Deformity increasing.	Five months.	In excellent condition. Has worn apparatus constantly.
8. M.A.H.	6 yrs.	M.	7 months.	3 and 4 dorsal.	Considerable.	None.	None.	Fourteen months.	In excellent condition. Has worn apparatus constantly.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. THE SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

REGULAR Meeting, Wednesday, October 27, 1897, DR. F. W. JOHNSON in the chair.

PATHOLOGICAL SPECIMENS.

DR. EDGAR GARCEAU showed a tuberculous kidney. The symptoms before removal were those of cystitis. The only sign was enlargement of the kidney of the affected side. Catheterization of the right ureter was possible, but not of the left, owing to a stricture. The right kidney secreted normal urine.

DR. JOHNSON: I have three specimens I would like to show:

One is a cyst of the vulvo-vaginal gland. The contents look very much like jelly. The cyst was dissected out without rupturing it, and is about the size those cysts usually are. They are not very common. I have known of only four or five. I think I have seen three.

This specimen is primary cancer of the ovary. The woman was three months pregnant when the operation was done. She aborted at the fifth month, and since then has been suffering a good deal of pain in the abdomen, with diarrhea and considerable emaciation. At the time of the operation the omentum was adherent to the ovary, and there were a number of cancerous nodules in the omentum, and one nodule in the parietal peritoneum in front of the bladder. The uterus, as far as we could see, was not involved at that time. This is the ovary from the other side, which was also diseased, the disease just beginning in it. This other is a very interesting specimen of its kind.

The next specimen is one of carcinoma of the uterus, where the cauliflower growth filled the vault of the vagina. That was removed by scissors, cautery and curette, and then, after thoroughly using the cautery, the vagina was disinfected and suprapubic hysterectomy done. After getting the uterus out, it was found to contain an ovum, and the specimen is a very pretty one on that account. The ovum can be seen, also the allantois and the beginning formation of the placenta. It is at the fundus of the uterus. She had been flowing several weeks before coming into the hospital, but pregnancy was suspected by Dr. Storer, whose patient she was. You can see the ovum very distinctly; of course, the alcohol has shrivelled it up some, and the allantois. The disease had got outside the cervix, involving the posterior vaginal wall, and had reached as far as the peritoneum posteriorly.

DR. M. STORER read a paper on

VULVO-VAGINITIS IN CHILDREN.[1]

DR. E. W. CUSHING: I think we have to thank Dr. Storer for this very valuable presentation of a very important subject. It is hard enough for women to suffer the serious consequences of gonorrhea, even when one may say it is their own fault; it is harder yet for innocent women to be infected; but to think of little children being infected is something cruel. I am persuaded Dr. Storer is right when he lays the blame of later suffering to occurrences in infantile life. I can recall a number of cases where young women have suffered from pelvic trouble, and have said they have always suffered so far back as they can remember, the condition becoming so serious as to finally require an operation; and on operation the remains of old salpingitis have been found on one or both sides, adhesions and tying down of uterus and tubes, causing retroflexion of the uterus. In these cases it has been plain that something has occurred in childhood to give rise to these conditions. Lawson Tait, I think it was, who first brought forward the theory that various exanthemata, such as measles and scarlet fever, as well as mumps, were liable to be complicated with salpingitis and adhesions of this kind. From what we know of the insidious spread of gonorrhea, I think it perhaps more probable that many of these cases can really be referred to a gonorrheal inflammation in childhood which has escaped proper observation. I do not suggest anything but praise for the valuable suggestions as to treatment. The alkaline solutions have been claimed recently by Fournier to be a specific for gonorrhea, and simple injections with bicarbonate of soda are in themselves very soothing and very healing. I am a trifle sceptical myself as to the effect of any local treatment. I have tried many things for gonorrhea, and I have seen cases where nothing seemed to do good while I know that many cases recover without any treatment. I think it depends more on the condition and constitution of the patients than on anything else. The light or red-haired, lymphatic patients are apt to do badly. The subject is one, I think, where a good beginning has been made; and it would be extremely interesting to keep records of some of those cases which have had gonorrheal symptoms when little, and see how they turn out when they grow up, and I presume that can be done as our knowledge increases.

DR. C. P. PUTNAM: The studies recently made on the causes of this affection by the writer and others are very interesting. But practically I have not found my cases so very difficult to cure. I have never been able to trace any case as leading to disease in adult life, though such a thing seems quite possible. Children thus affected generally get well reasonably fast if they are thoroughly treated with alkaline washes, especially borax, provided the patient's general condition is looked after too. This is certainly of the greatest importance. Local treatment may fail without general treatment. Whether such cases lead to a gonorrhea in older years is an interesting question, but I am not able to testify either on one side or the other; certainly it cannot be very common.

DR. BURRAGE: I have seen several cases of deformity of the genitals in young adults that could be explained only on the ground that the patients had had vulvitis in early childhood. I remember one in particular I saw about a year ago, where the nymphæ were practically obliterated and the clitoris was buried deeply under a curtain of tissue that was formed by the adhesion of the remains of the nymphæ, and there was entire absence of the hymen. The patient also had a prolapsed and inflamed ovary. I could not get any definite history of vulvitis in that case. I have seen two or three other cases of similar character. I think this ought to be taken into account as a possible sequelæ of the vulvo-vaginitis of little children.

DR. J. L. MORSE: I find I have fairly careful notes of 21 cases of vulvo-vaginitis in little girls between the ages of one and twelve, most of them between four and six. Bacteriological examinations were made in all, and the gonococcus found in 16. I have usually found it very hard to get at the source of infection. In these cases I found that the father was responsible in one case, the mother in one, the aunt in one, and an older sister in two, and apparently in all as a result of the child sleeping with the infected person. In another case I found a source of indirect infection through towels from some male boarders, who when accused of being the source of infection immediately left the house; in one of the five cases in which the gonococcus was not found, pin-worms were present, and seemed to be the cause of the irritation. Rachford has recently called attention to a new factor in the etiology of the simple form, considering the uric-acid diathesis to be a frequent cause of temporary and recurrent attacks of mild vaginitis.

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[1] See page 49 of the Journal.

As to the symptoms of vulvo-vaginitis in little girls, my experience has certainly not taught me to expect them to be as severe as Dr. Storer would lead us to believe. I have found it, as a rule, a very mild affection, which with a little cleanliness takes care of itself. The symptoms have been a moderate vaginal discharge and a slight vulvar irritation, the children usually being brought because the mother had noticed the discharge on the linen. The question of painful or frequent micturition was investigated in all the cases. Micturition was painful in nine and frequent in nine, not necessarily, however, in the same cases. In one case only did the infection seem to travel up the urinary passages and involve the bladder. In this case there was a mild cystitis which yielded very promptly to therapeutic measures.

The constitutional symptoms in my cases have, as a rule, been very slight. I have not made the careful vaginal examination which specialists would make; but in separating the vulva and investigating the vagina as well as I could, it seemed to me that the vagina was, as a rule, not inflamed. Pus could not be squeezed out of the vagina, and on wiping off the external genitals and introducing a cotton stick into the vagina it rarely showed any discharge.

As to the prognoses, I have found them to yield pretty easily to treatment. The only treatment necessary in many cases has been simple cleanliness. In cases that have not yielded very readily to treatment I have used the soft catheter introduced into the vagina with a solution of myrrh or 1 to 5,000 or 1 to 10,000 corrosive; and in one or two obstinate cases I have used a one-per-cent. solution of nitrate of silver.

I do not feel competent to speak regarding the end results of this affection in little girls because I do not see such cases late in life, but as far as I can tell from seeing them as children it does not seem to me probable that gonorrhea can be the source of much trouble in after life except in rare instances.

Dr. C. G. Cumston: I have some little experience with vulvo-vaginitis in little girls. In 1895 I published a clinical lecture on the treatment of gonorrhea in the female, and I believe the subject that was taken as the text for the lecture was a case of vulvo-vaginitis in a child, and I described at that time pretty thoroughly the method I used, namely, that of permanganate of potassium irrigations. The only objection that I see to Dr. Storer's treatment is that he uses the solution much too strong. From experience in the treatment of gonorrhea in both adults and children, I have come to the conclusion that permanganate of potassium 1 to 2,000 is as strong as you want to make it. Now if the permanganate treatment after daily injection of about three litres — I think that is better than a stronger solution and smaller quantity, and two or three litres of a tepid solution is a proper amount to give — and if at the end of twelve to fourteen days the gonococcus is still found in the discharge I usually follow the advice given by the immortal Ricord many years ago: when patients do not get well by injections or internal medication let them alone, and, as a rule, if you stop then, you find the discharge diminishes itself without treatment. And, then, balsams given internally have in my hands been very satisfactory.

Regarding complications of vulvo-vaginitis in children, I have had one interesting case occur the last year. A child aged ten had had a discharge from the vulva thirteen days when I saw her. I found the hymen intact. The discharge was very abundant, greenish-yellow, and contained a large number of gonococci. She was treated at the clinic daily with irrigations of permanganate. and the discharge became better, and she ceased to attend after ten days. She came back in a few days, and the mother said the discharge had been very slight, but the day previous the child had been feverish. I found the temperature 39.5° C., pain in the right knee, which was swollen and tender. The next day the joint increased in size, and I ordered four leeches, and after they dropped off to paint the joint with 20 per cent. ichthyol ointment. Three days later the left ankle became involved, and three leeches and ichthyol ointment again cut short the attack. I did not put the joints in splints for the reason that on one occasion, a few years ago, a young woman under my care had gonorrheal arthritis of the elbow, and I put her in splints and she had anchylosis, necessitating resection of the elbow-joint. I used massage and electricity, and the child did well. In three weeks she was up and about. I made blood-counts on the five days following rise of temperature, and there was leucocytosis for four days until the temperature began to fall. In this case the infection was traced to an older sister with whom the child slept.

Regarding the gonococcus in vulvo-vaginitis in little girls, I think it involves a serious question, namely, the medico-legal aspect of the case. In consulting a large number of authorities, among whom I may mention Steinschneider, Martin, De Amicis, Vibert, Koplik, Epstein, Cséri, Isreal, and those already mentioned by Dr. Storer, it would seem to me we should make a distinction between the gonorrheal and catarrhal forms of the disease; and from the reported cases the rule can be formulated that in the vast majority of cases there is no question of criminal assault, but it is an infection from some member of the family or use of contaminated toilet articles in the house where the child is. The catarrhal vaginitis, I agree with the essayist, is due to lymphatic constitution, scrofulosis; and those cases get well with general treatment rather than by local. The catarrhal types, for that matter, are clinically different in their symptoms and evolution from the vulvo-vaginitis produced by Neisser's organism.

I have never found argonin of any particular value excepting as a vesical irrigation in a four-per-cent. solution in gonorrheal and other inflammatory conditions of the bladder.

Dr. Storer: In regard to what Dr. Cumston said relative to the strength of solutions, I have felt that I had been using rather too strong solutions, and in the future I shall follow his advice. As regards treatment, I feel, as has been said by Dr. Morse and Dr. Putnam, that most of these cases will get well without energetic treatment; but I do think by treatment sequelæ which have been shown to occur quite often run a far better chance of being avoided. A number of mothers have promised to bring their children to me in ten or fifteen years to let me see whether sequelæ have occurred; but whether they will do so or not I don't know.

Dr. W. L. Burrage read a paper entitled

SOME RESULTS OF THE POSTURAL METHOD OF DRAINING THE PERITONEAL CAVITY AFTER ABDOMINAL OPERATIONS.[2]

Dr. Kingman: I am very sorry I did not know until this afternoon that this paper was to come up. I have had no opportunity to look up the cases in which I have used this treatment, and so have to speak simply from generalities. I read this article of Dr. Clark's when it came out, and it appealed to me favorably, but was unable to make use of the treatment until I returned from my vacation. I then asked Dr. Burrage if he had used the method and what his results had been. His answer was highly favorable, and since that time I have had occasion to use it in a number of cases, the results coinciding with those stated by him to-night. I have been particularly struck with the absence of pain. The patients seem to be vastly more comfortable, in my experience, when thus treated, entirely aside from the pain caused by the gauze drainage. I have had a predilection for drainage in cases where it seemed to me there was liable to be much oozing or where there had been extravasation of pus into the abdominal cavity and I always used it with the feeling that it increased the patient's chances of recovery, although adding vastly to the discomfort which she must experience. Now I regard as a boon the possibility of treating these cases with a perfectly satisfactory and sufficient drainage without the subsequent annoyance of a weak abdominal scar and the presence of gauze or tube to be removed.

One case I had a few days ago will serve to illustrate the value of this method. It was a case of apparently double extra-uterine pregnancy, which had been treated, through mistaken diagnosis, for three weeks as a case of indigestion. There had probably been repeated extravasations of blood, and yet she tried to perform her household duties, and a week before operation she did a washing. At the time of operation she was in bad condition, temperature 102.5° and pulse 130, and the patient's whole appearance was such as to warn the attendants that she was in great danger. She was cyanotic, had been fed upon morphine for several weeks previously, and was entirely unmanageable. After the operation about a pint and a half of saline solution was put into the peritoneal cavity, the abdomen sewed up, and she was put into the inclined position, the foot of the bed being raised 18 inches. The second night after operation she got out of bed, went to another bed and made herself as comfortable as possible there. The temperature the night after the operation was 103°, the next night 102.5°, the next morning coming down to 99°, and she was feeling quite comfortable. I can hardly believe from my experience of such cases in the past, where extensive violence was done in the pelvis and where there were decomposing blood-clots, that such a case without drainage could have made the satisfactory recovery that this woman showed, and I feel that the case goes far toward showing the value of this treatment.

Dr. Storer: I find notes of nine cases in which I have left the abdomen full of saline solution, but three of them were clean cases, in which no temperature was to be expected, and there was none. In six that had a possible focus of infection (four pyosalpinx and one extra-uterine), as most of them were before Dr. Clark's paper was published, I had no idea of establishing drainage particularly, and left the abdomen full of water merely to make up for a loss of blood and counteract probable shock, and did not elevate the foot of the bed unless shock was present. The fact that the temperatures averaged nearly a degree higher than in those Dr. Burrage has reported would seem to point to the value of elevation of the bed. But in spite of this I have a certain reluctance to believe that such extreme elevation is quite necessary. The position is not comfortable, as one can easily prove by trying it on one's self. I have thought absorption, once started, quite as rapid with the bed elevated only a foot as when eighteen inches, and those six inches make a vast difference to the patient.

Dr. E. W. Cushing: I hardly know what to say on this subject. I hate always to seem to be the doubting Thomas, but you will bear with me if I appear as the *advocatus diaboli*. In 1890 I read a paper before the International Medical Congress at Berlin, to show the advantages of drainage, and I found that, with their improvement in the technique and in the conditions of the operating-rooms in surgery, the Germans had been able to give up drainage. I was surprised to find that pus-tubes could be removed and treated without drainage. I remember J. Veit had a case of that kind where pus entered the peritoneal cavity, and said, "We will disgust Cushing by using no tube," and closed the wound without drainage, the patient recovering perfectly well. I then noticed how careful the surgeons were to leave no oozing, tying with catgut, and then cutting adhesions which we were used to separating with the fingers. That salt solution or plain water can be left in many cases in the abdominal cavity with advantage I found out long ago, and Price has repeatedly emphasized this fact. That raising the foot of the bed a foot or eighteen inches will cause fluids to run out of the pelvis I don't believe. Any one who wants to try that can do it on the cadaver, or try it with a patient in the Trendelenburg position. The spine has such a crook in it at the pelvis that the pelvis does not empty itself, therefore the question arises whether this postural method really amounts to anything, or whether the fact is simply that we are all improving our surgery and can do better work and get along without drainage in cases where we should have drained before. I am using drainage a great deal less than I used to, because I have more faith in the peritoneum and am doing better work. Drainage also is a very variable factor. The proper use of drainage is a fine art that cannot be always used, because the surgeons or the nurses are not thoroughly trained in the care of the glass tube; and if we use the Mikulicz packing or other gauze drainage I am confident that in itself will not drain unless the drainage-tube is carried down through the middle of it.

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[2] See page 52 of the Journal.

Iodoform gauze, in particular, will not drain the pelvic cavity, as the iodoform and soap stop up the pores of the gauze. I am in favor of using drainage as little as possible, and in a case of pus-tube, I don't think drainage is necessary merely because pus has been free in the abdominal cavity. I also believe in leaving some salt solution in the abdominal cavity in cases where there has been hemorrhage. I am open to conviction on the subject whether the elevation of the pelvis makes any difference or not. It may. It also may be that the improved results are due simply to better surgery and greater cleanliness, without any regard to the posture. We have to take these little openings in the diaphragm on trust, as it were, even if it seems strange the peritoneal cavity should drain from the diaphragm instead of the bottom of the pelvis. In the experiment on which this treatment is based the dogs were hung up by the heels, which, of course, would start all fluids towards the diaphragm. The question is, whether raising the foot of the bed eighteen inches will have any real effect; and this can only be determined by comparing many series of cases. The paper read to-night is therefore a laudable contribution to the study of a question which cannot be considered as settled as yet. I think the posture is not the principal part in this, but it is the good surgery, careful work and perhaps the leaving the salt solution in the abdominal cavity.

Dr. Johnson: Since Dr. Clark's paper I have used no drainage in any case and I have had a number of cases of pus-tubes, abscesses of the ovaries where rupture took place and the intestines were daubed with pus. In a large number of the cases the pus was sterile; in two cases streptococci were found; all were closed up tight. A pint of normal salt solution was put in the abdominal cavity and the bed raised eighteen inches. Every case got along beautifully. I have yet to see the case where I should use drainage. Perhaps one may come up. This specimen is a senile uterus, very small indeed, with a fibroid growing from it. The fibroid grew backwards and to the left into the left broad ligament. The patient was sixty, suffering from constant backache, an invalid nervously and physically, and almost insane. The left broad ligament was torn to pieces in getting the tumor out. The tumor was also adherent to the rectum. In that case I thought I should put in drainage because I feared I could not stop the bleeding sufficiently. I put in salt solution and closed the abdomen, and the result has been perfectly satisfactory. You can see that the fibroid is covered with adhesions, which all give an idea of the amount of tearing done in the left broad ligament and the consequent raw surfaces and oozing. Although there was considerable oozing, no trouble resulted from it. As to the position being uncomfortable, I have had only one or two cases where discomfort was complained of. Usually no complaint is made; and whenever the catheter is passed or the patient feels uncomfortable, the bed is lowered, the patient turned on the side, the back bathed, and then the bed again raised. Dr. Clark distinctly says the tipping up of the bed is not to drain the pelvic cavity. You tip the bed up, and thus start the current toward the diaphragm. If I had not read Dr. Clark's paper and believed thoroughly in the experiments they have been making at the Johns Hopkins Hospital I should have used drainage in a number of cases operated on since last spring.

Dr. Burrage: In reply to Dr. Cushing I should like to say I do not think it is intended to drain the pelvis by lifting the foot of the bed, but simply to start the current which is supposed to move in the direction of the diaphragm, and by lifting the foot of the bed it must help the current to move in that direction or toward what we think is the source of removal of the sepsis. I think, as regards drainage in general it is a great deal safer, if we can, to trust to the peritoneum rather than to nurses. There is a great deal of risk in putting in drainage except under the most favorable conditions, where the nurses have been trained in your especial methods, and even then, under the stress of circumstances they are likely to be careless. Therefore, it seems to me, the peritoneum may be more safely trusted, if it is in a fairly normal condition, to absorb the deleterious substances that threaten it. Dr. Clark does not go to the extent of giving up drainage entirely. He uses external drainage in general peritonitis, for here the absorptive powers of the peritoneum have been much lessened, also in cases of suture of the intestine where there is doubt of the line of apposition, and in appendicitis. I I think that practically covers the exceptions he makes

Dr. Cushing: There are two questions involved, one not using drainage, the other whether posture helps the matter any. That posture will start the current towards the diaphragm is absolutely theoretical. This question is one which is still open and subject to investigation. I do not mean to say it cannot be so, but simply that those who have drained will sometimes be surprised to see, if careful in their work, how well cases will do without drainage, even without this posture.

Dr. Burrage: This matter of intraperitoneal currents has been investigated by German observers and they have demonstrated the existence of the currents and have found that particles of carmine introduced into the abdominal cavity of a dog appeared more quickly in the lymph spaces of the diaphragm when the animal's hind quarters were raised than when the animal was kept in a horizontal position, tending to show that elevation of the pelvis affects the rapidity of absorption of foreign bodies in the peritoneal cavity.

Recent Literature.

Atlas and Essentials of Bacteriology. By Prof. K. B. Lehmann, Chief of the Hygienic Institute in Würzburg, and Dr. Rudolf Neumann, Assistant in the Hygienic Institute in Würzburg. With 63 chromo-lithographic plates, comprising 558 figures, and numerous engravings. New York: Wm. Wood & Co. 1897.

The most prominent and important portion of this work is the Atlas of Chromo-lithographic Plates. These are designed to show the morphology and cultural peculiarities of sixty-three species of bacteria and other micro-organisms. For the most part the figures are very satisfactory and represent fairly accurately the natural appearances.

The book will be of especial utility to teachers and laboratory students of elementary bacteriology.

An objectionable feature is the use of more or less new or unusual terms to designate certain bacteria. This serves no useful purpose and may cause confusion in the minds of students.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 20, 1898.

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MEDICAL REGISTRATION IN MASSACHUSETTS.

The report of the Board of Registration in Medicine for the year 1897 is in the hands of the printer, and will soon make its appearance at the State House as Public Document No. 56.

The report states that during the year 452 persons filed applications for registration, that 415 of the number have been examined, 323 registered, and 92, failing to pass an examination satisfactory to the Board, were refused registration. The number of persons not subject to examination registered during the period extending from the organization of the Board in July, 1894, to the first of the following January, is 3,776, and during the same period 618 were refused registration. Of the number registered 3,442 were graduates from medical schools authorized to confer the degree of "doctor of medicine," and 334 were non-graduates who had practised three years in the State prior to the passage of the law. Since January 1, 1895, when the Board began its function as an examining and licensing board, 1,444 applicants have been examined, 1,296 registered and 148 rejected.

After discussing at considerable length the medical situation in this State and the requirements for registration as compared with the requirements in other States, particularly in New York, New Jersey and Ohio, the Board submits its recommendations to the legislature in the form of an amendatory act, as follows:

Section 1. The examinations for registration as physicians or surgeons under the provisions of Chapter 458 of the Acts of the year 1894, shall be, in whole or in part, in writing in the English language, and shall be of a scientific and practical character, and sufficiently thorough to test the applicant's fitness to practise medicine. They shall embrace the general subjects of surgery, physiology, pathology, obstetrics and gynecology, practice of medicine, anatomy and such other subjects as the Board may determine.

Sect. 2. Authority to practise medicine in this Commonwealth under said Act, or the several later Acts relating thereto, shall be a certificate issued by the Board of Registration in Medicine, and it shall be unlawful for any person to practise medicine in any of its branches within the limits of this Commonwealth, who has not exhibited and registered in the city or town clerk's office of the city or town in which he resides or maintains an office, his authority for practising medicine, together with his age, address and place of birth; and the person so registering shall subscribe and verify, by oath before such clerk, an affidavit containing such facts, which, if false, shall subject the affiant to conviction and punishment for perjury.

Sect. 3. Nothing in this Act shall be so construed as to discriminate against any particular school or system of medicine, or to prohibit service in a case of emergency, or the domestic administration of family remedies; and this Act shall not apply to a commissioned medical officer of the United States Army, Navy or Marine-Hospital Service, in the discharge of his official duty; nor to a physician or surgeon from another State, who is a legal practitioner authorized by a State Examining Board to practise medicine in the State in which he resides, when in actual consultation with a legal practitioner of this Commonwealth; nor to a physician or surgeon residing in another State and practising medicine therein by authority of a certificate or license received after having passed a satisfactory examination in the several branches of medicine as required by a State Examining Board in the State in which he resides, whose general practice extends into the border towns of this Commonwealth, provided such physician does not open an office nor designate a place in such towns where he may meet patients or receive calls; nor to a physician duly authorized to practise medicine in another State called as the family physician to attend a person temporarily abiding in this Commonwealth.

Sect. 4. Any person who, not being then lawfully authorized to practise medicine within this Commonwealth, and so registered according to the law, shall hold himself out to the public as a practitioner of medicine, whether by appending to his name the title of Dr. or M D., or any other title or designation implying a practitioner of medicine, or attempting to practise medicine in any of its branches, within the limits of this Commonwealth, shall be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than $100 nor more than $500 for each offence, or by imprisonment in jail for three months, or both; and in no case where any provision of this law has been violated, shall the person so violating be entitled to receive compensation for services rendered.

Sect. 5. Any person shall be regarded as practising medicine within the meaning of this Act who shall append to his name the letters M.D., or shall assume or advertise the title of Dr. or physician, or any other title which shall show or tend to show that the person assuming or advertising the same is a practitioner of medicine, or of any of the branches of medicine, or who shall investigate or diagnose, or offer to investigate or diagnose, any physical or mental ailment or defect of any person with a view of affording relief, as commonly done by a physician or surgeon, or who shall prescribe for or treat a person for the purpose of curing any real or supposed disease, whether by the use of drugs or by the application of any other agency or alleged method of cure or alleviation or prevention of disease, or to operate as a surgeon for the cure or relief of any wound, fracture or bodily injury or deformity, after having received therefor or with the intent of receiving therefor, either directly or indirectly, any bonus, gift or compensation.

Sect. 6. After the beginning of the year 1900 no person on whom the degree of M.D. or its equivalent, has not been conferred by a medical school considered reputable by the Board of Registration in Medicine, shall be entitled to an examination.

The recommendations are based mainly on educational lines, and define more clearly than is done in the original Act, what under the law shall constitute a misdemeanor. In the present law the number of subjects on which the Board can examine applicants, is limited to five. In the recommendations, anatomy and gynecology, "and such other subjects as the Board may determine," are added to the list. It is also recommended that after the year 1900 no one shall be eligible to an examination on whom some reputable college has not conferred the degree of "doctor of medicine." Section 2 of the proposed Act requires the licensed practitioner to exhibit his certificate of registration and to record the same in the clerk's office in the city or town in which he practises, a reasonable requirment as a means of identification. The only new feature in Section 3 is the provision relating to practitioners in adjoining States whose practice extends across State lines. Section 4 defines more clearly than the old law the penalties of violation, and adds that no one who is not registered shall be entitled to receive pay for professional services. Section 5 states explicitly who shall be regarded as practising medicine within the meaning of the law. This the present law does not do in a manner considered by the courts to be sufficiently definite. The terms of the proposed section are nearly identical with similar provisions in the Acts in many of the other States, and is not aimed at any particular class of irregular practitioners. It applies to all alike who pretend in any public manner to practise medicine.

We cannot see that the proposed Act is likely to excite the opposition of any one who is not in sympathy with incompetent would-be practitioners. On the contrary, the purpose of the bill must be regarded as salutary and drawn with due care to existing rights. Its passage would greatly enhance the importance and effectiveness of the existing law, and therefore should meet the approval of the legislature.

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REPORT OF THE SURGEON-GENERAL OF THE ARMY.

According to this report, which has been recently issued for the year ending June 30, 1897, the health of the army during the calendar year 1896 was excellent, the admissions to sick report being practically the same as 1895, for which year the rate of sickness was the lowest on record.

The death-rate from all causes was 5.44 per thousand, much lower than the average annual death-rate for the previous ten years, which was 7.51 per thousand. The number of deaths was 148; 44 resulting from injury, and 108 from disease. The largest number of deaths from a single disease was 17 from typhoid fever. Heart disease came next with 13 deaths. There were 14 deaths from gunshot injuries.

In the past few years there has been great improvement in the sanitary condition of the colored troops, as shown by lessened rates of sickness, disability and death. The white troops have participated in this improvement, though these rates have not fallen so rapidly as those of the colored men.

Forty-seven cases of diphtheria were reported during the year, and 148 cases of typhoid fever, the larger number, 15, occurring at Fort Brady, Mich. This epidemic occurred in August, and was attributed by the medical officer to foul surface-water drunk on the return from a target-practice camp to the post.

No cases of cerebro-spinal meningitis occurred during 1896, but in April, 1897, one case was reported by Lieutenant E. L. Munson, Assistant Surgeon, at Fort Assinniboine, Montana, together with several other cases seen by him at that time among civilians in the neighboring country.

The Widal serum test was applied at the bacteriological laboratory of the Army Medical Museum at Washington, D. C., on 71 specimens of blood sent from various posts for that purpose. In 27 cases of well-defined typhoid fever, positive results were obtained in twenty-five. In 19 cases of well-defined diseases, not fevers, negative results were obtained. There remained 25 febrile cases in which the test was made. In 19 of these, in which the symptoms of typhoid fever were not characteristic, and which were classed as the so-called Florida fever or Texas fever, a positive result was obtained, and the writer of the report regards it as extremely probable that they were in reality cases of typhoid infection.

There were 2,087 cases of malarial infection, or 83.08 per thousand. The white troops suffered much more from this cause than the colored, the rate for the former being 89.16 per thousand, and for the latter 16.63.

During the year the Medical Department of the army reported 542 surgical operations, 142 of which were necessitated by injury and 400 by disease. Thirty operations for radical cure of hernia were performed during the year, making 79 for the last two years, and the histories of the cases followed as far as possible to date, gave only three recurrences.

The report on the sanitary condition of the army shows that the quarters of the men are in the main satisfactory. The new quarters at posts recently built are stated to be excellent from a sanitary point of view. At some of the old posts the buildings are said to be more or less out of repair, overcrowded, with inadequate ventilation and primitive methods for the removal of wastes. Nevertheless, it is pleasing to note that there is a steady improvement in hygienic conditions all along the line. The water-supply at a few of the posts is reported as unsatisfactory; but in the majority of instances it is good. It is pointed out that there is a well-marked coincidence between the prevalence of fever and the amount of field service performed by the troops forming a garrison. Post surgeons, in referring to the causation of low fevers in their commands, have frequently taken occasion to explain that these did not originate in insanitary conditions at the post, but were incurred by the men when absent on field service. As a remedy for this state of affairs the use of portable filters for troops when in the field has been suggested. The question of employing means to insure a purer milk-supply is raised at two of the posts, and, as these are located in country districts, such a proposition cannot be regarded as unnecessary. The experiment as to whether the five days' rations when spread over a period of ten days would be sufficient to keep men in proper health, was put to a practical test in April of last year when a ten days' march was made by troop E, First Cavalry, on emergency rations for five days. The result of this experiment went to show that although there was a loss of weight on an average of 2.935 pounds per man, yet that all the forty-six men who composed the troop were at the termination of the march in fine physical condition.

The report on bathing facilities states that a great deal has been done to improve the facilities of the men for bathing. With regard to Fort Duchesne, Utah, we cannot fail to agree with Lieutenant Flagg, Assistant Surgeon, who writes: "Bathing facilities at this post are unsatisfactory; ordinary wash-tubs are used, a hip-bath tub and a foot-tub for one troop, and one half-barrel for the other. In one troop the water is heated by means of a heating stove and copper boiler and a caldron stove. In the other, the water is heated in three oil-cans on a heating stove. The system is not conducive to cleanliness."

The report closes with a large number of statistical tables, which will be of interest to students of military sanitation.

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THE "PRACTITIONER" AND THE MEDICAL PROFESSION IN THE UNITED STATES.

In a recent editorial, entitled "The Social Position of the British Medical Profession," the *Journal of the American Medical Association* makes the statement that "the *Practitioner* has lately congratulated the British medical profession on the limited extent to which it suffered contamination from American medical science at the late (Montreal) meeting of the British Medical Association," and goes on at length to charge the British medical profession with flunkyism, etc., and to detract from the value of the meeting itself. Such statements as the following will serve to indicate the general tone of the article:

"The meeting in question was an excellent exhibit of how far philistinism has sunk British medicine beneath the level of American and Continental (European) medical science. The section work in the main would not disgrace a third-rate American medical society of the mutual admiration type."

"The contamination the *Practitioner* fears from the American medical profession is the infusion of self-respect which might destroy the flunkyism exhibited in the controversy over doorbell ringing and handshaking just quoted."

The statements in this very ungenerous, unfriendly and unsuitable diatribe are apparently based on the following sentence in the *Practitioner's* (October) editorial comparing the Montreal meeting with the International Congress at Moscow: "While the meeting of the British Medical Association at Montreal was being arranged there was some fear that the Britishers would be swamped by an invasion of Yankees. Care was taken to prevent this; but still one gathers from our American friends that the success of the meeting was mainly due to their presence in considerable force. However this may be, there can be no doubt that at Moscow the native and every other foreign element was swamped by the Germans, etc."

How little the editor of the *Practitioner* considered the presence of Americans as a contamination may be gathered from another sentence in the same article: "The presence in such large amount of an altogether new element in the shape of Canadians, British and French, and of 'United Statestians' — to use the convenient designation that has lately been suggested for the citizens of the great Republic of the West — gave the meeting the zest of a strange and delightful experience to those accustomed to see, year after year at these annual meetings, the same faces and to hear the same voices," etc. Of Dr. Osler, the editor says: "He proved that the race of scholarly physicians, whose extinction he deplored, has left at least one descendant worthy to stand by the side of any of them." The accomplished editor of the *Practitioner*, Mr. Malcolm Morris, is the last Englishman to be taken to task for depreciating the value of American medical science, of the contributions of which to medical and surgical progress he has always shown the liveliest appreciation.

In his leading editorial in the *Practitioner* of January, 1898, he says: "Many of the leading men in the several departments of medicine have promised to contribute original articles, and the editor also hopes to publish papers by American writers whose names are household words throughout the medical world." He also publishes an appreciative article on the "History of Medicine in America," based on Dr. Roswell Park's "Epitome of the History of Medicine"; and under the heading, "Heroes of Medicine," gives an excellent account of the life and work of James Marion Sims, "to whom," he justly says, "the surgical treatment of the diseases of women owes much of the progress which it has made during the last half-century."

The editor of the *Journal of the American Medical Association* would have done well to have chosen some other text for his attack on his professional brethren across the Atlantic, and singled out some other object than the editor of the *Practitioner*, if, which is to be doubted, such an attack were to profit any one.

A journal which assumes as the official organ of the American Medical Association to voice the feeling of the American medical profession might, it would seem, find more worthy subjects for comment, and treat them with more dignity.

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MEDICAL NOTES.

Pneumonia Transmitted by Parrots. — According to the Paris correspondent of the *British Medical Journal*, seventy cases of psittacosis (pneumonia transmitted by parrots) have occurred in that city and its environs since 1892.

The Passing of the Family Doctor. — The London *Lancet* has lately expressed its regret at the signs of the wasting prestige and influence of the medical profession. That looks as if the embarrassments that beset physicians in New York were operating in

London also. There seems to be some reason to anticipate a time when New York families will contract with a syndicate of physicians, comprising a complete set of the necessary specialists, for the supervision of the family health at a fixed annual price. — *Harper's Weekly.*

A New Editor for the "Columbus Medical Journal." — Dr. R. Harvey Reed has tended his resignation as president, editor and manager of the Columbus Medical Publishing Company, and Dr. J. E. Brown has been elected editor and manager.

She Took Too Many Pills. — An aged woman recently died from a too free use of pills composed of belladonna, strychnia and aloin, which she took, without medical advice, for the relief of indigestion. The pills were manufactured by a reliable firm of wholesale druggists.

Death at the Age of One Hundred and Eighteen Years. — The death is reported near State Road, Del., of Stephen Smith, colored, at the advanced age of one hundred and eighteen years. He is said to have been the father of 46 children by 11 wives, and to have had 108 grandchildren and 65 great-grandchildren.

Epithelioma in a Boy of Fourteen. — At a recent meeting of the Philadelphia Pathological Society, Dr. M. B. Hartzell reported a case of epithelioma in a boy aged fourteen years. The growth was on the face of the boy and had existed for two years. A portion was excised and the diagnosis confirmed by microscopic examination. The treatment, which consisted of forty per cent. pyrogallol and subsequently boracic acid, resulted in cicatrization of the ulcer. The extreme rarity of the affection in one so young was dwelt upon. — *Philadelphia Medical Journal.*

Artificial Oysters. — The municipal authorities of Paris are just now engaged in the suppression of an altogether novel form of food adulteration, which is assuming phenomenal proportions, according to the *New York Tribune.* Real oysters are expensive in Paris; and so, with the object of suiting slender purses, artificial oysters on the half-shell have been invented, which are sold at twenty cents a dozen, and they are so cleverly made, and look so nice and fresh, that, once lemon juice or vinegar has been added, they cannot be distinguished from the real article, especially when white wine is taken in connection therewith. The only genuine thing about these oysters is the shell, the manufacturers buying second-hand shells at a small cost, and fastening the spurious oyster in place with a tasteless paste. The municipal laboratory has not yet proclaimed the ingredients of which these bogus oysters are composed, but has announced that they are of a harmful character.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, January 19, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 103, scarlatina 26, scarlet fever 23, typhoid fever 11, measles 27.

The Boston Children's Hospital. — At the annual meeting of the corporation of the Children's Hospital of Boston on January 11th the report of the treasurer showed that the expense during 1897 had exceeded the income by nearly $12,000. The following-named officers were elected: President, Charles L. Young; Vice-President, F. W. Hunnewell; Treasurer, Joshua M. Sears; Secretary, Francis H. Brown; Managers, William Ingalls, Charles H. Fiske, E. V. R. Thayer, H. H. Hunnewell, G. P. Gardner, Frederic C. Shattuck, Oliver Ames, Clarence J. Blake, Gordon Abbott, Howard Stockton, W. B. Thomas, Henry Wheeler.

Compulsory Registration Refused. — Judge Holmes, in the Massachusetts Supreme Court, recently dismissed the petition brought by Michael Nolan, of Haverhill, asking for a writ of mandamus to compel the Board of Registration in Medicine to give him a certificate of registration. Nolan applied to the Board on December 10, 1894, setting forth in his application that he was a graduate of Vermont Medical College, at Rutland, in 1889, and that he had practised four years in Haverhill. In his petition to the court he claimed that he was a graduate of a legally chartered college having power to confer degrees in medicine, and therefore wrongly denied registration. The Board in its reply to the declarations of the petitioner asserted that the college named was a fraudulent institution, and under the laws of Vermont was not authorized to confer medical degrees; the judge ruled accordingly.

Maine Academy of Medicine. — The regular monthly meeting of the Maine Academy of Medicine was held on January 10th at the Maine Eye and Ear Infirmary building in Portland. There was a large attendance. Dr. Wedgewood, of Lewiston, the president of the Academy, presided. A number of new fellows were elected. Dr. H. S. T. Harris, Assistant Surgeon, U. S. A., stationed at Fort Washakie, Wyoming, was elected a Corresponding Fellow of the Academy. The paper of the evening was by Dr. G. W. Merrill on "Digestive Agents." Dr. Daniel Driscoll, of Portland, spoke on the natural process of digestion. Dr. Merrill's paper was also discussed by Mr. E. S. Everett, of Portland, Dr. F. L. Dixon, of Lewiston, Dr. S. C. Gordon, of Portland, Dr. J. F. Thompson, of Portland, Dr. S. P. Warren, Dr. Small, of Lewiston; Dr. Meserve, of Portland, and Dr. Elwell of the Togus National Home. The meeting was followed by a banquet.

Quincy Hospital.—The corporation of the Quincy City Hospital held its annual meeting at the residence of Dr. John A. Gordon, in Quincy, January 17th, and elected its board of trustees. The endowment fund now amounts to $35,655, of which $30,564 is invested in mortgages and real estate. The debt is $8,231, a decrease over the preceding year.

NEW YORK.

DEATH OF DR. ROBB. — Dr. William H. Robb, the most eminent physician of Montgomery County, New York, died at Selma, Ala., where he had gone for his health, on January 12th, at the age of fifty-four. He had for many years practised at Amsterdam, where he was universally esteemed as one of its foremost citizens. Dr. Robb always took a prominent part in the meetings of the New York State Medical Association. From the time of its organization he was deeply interested in the welfare of the Association, and in November, 1884, he was elected one of its Vice-presidents, and the first President of the Second or Eastern Branch, composed of the counties of Albany, Columbia, Fulton, Greene, Montgomery, Rensselaer, Saratoga, Schenectady and Schoharie.

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Miscellany.

A WRITTEN EXAMINATION IN PHYSIOLOGY.

A CORRESPONDENT sends to the *New York Sun* the following answers made by pupils about twelve years of age upon a written examination in physiology and hygiene, and vouches for their genuineness.

"The bones hold up the body and we could not walk without them."

"The stomach is a pear shaped bag furnished with skin."

"If it wasn't for the bones we would be like a caterpillar and couldn't walk."

"The stomach is a pear shaped bag. It holds the head, trunk and limbs and the head is a round ball on top the stomach. It holds the brain and the trunk, the chest and abdomen."

"The puls is the beating of an artery in the wrist, and we need the puls because then the Doctors can tell whether we are in poor health or bad health."

"Tobacco makes the hart beat eragler and weakens the hart."

"The liver can be felt below the ribes and it makes the bile."

"The pulse is a little thing in the wrist and it tells when a person is not healthy."

"The capilars are a net work of long capilars and they gragly be and unite with the veins."

"When we run and play and jump is called exercise. We need it to make the blood flow faster and brisker."

"The most important articles of diet are clothing, pure food, fresh air, exercise and potatoes."

"Gymnastic is an exercise. You do that with dumb poles."

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Correspondence.

PEDICULOSIS IN BOSTON'S PUBLIC SCHOOLS.

BOSTON, January 17, 1897.

MR. EDITOR: — The prevalence of pediculosis among the school-children of Boston and the efforts which are now being made to remedy this unpleasant state of affairs are exciting much discussion among parents and others concerned. It occurred to the writer that a statement of some facts brought out in connection with his duties as a medical inspector of schools would be of interest to the medical profession.

As is generally known, there has been for some years a system of medical inspection of public schools. Each school is visited daily by a physician appointed by the Board of Health, and to him are referred for examination any children who appear to the teachers to be sick or in need of advice. In the course of his duties there has come before the inspector in a haphazard way a sufficient number of cases of pediculosis to justify the suspicion that this disease was very prevalent and that nothing but systematic examination and treatment would be of any avail. It was, therefore, decided by the health authorities, in conference with the superintendent of schools, that a systematic examination of all primary and grammar school children should be made by the inspector of schools, with the exception of any children whose parents might object.

To each child that was found to be infected there was given to take home a printed notice of his condition with a prescription and directions for treatment which had been suggested by experts on this subject. The card reads as follows:

School.
Boston, 189
has been reported

by the Medical Inspector of Schools to be suffering from the presence of lice in the hair, and I am therefore obliged to request that the child be kept out of school for a few days until the disease is cured.

MASTER.

The following method of treatment for killing lice and nits is suggested by the Board of Health:

Wet the hair thoroughly for three hours with crude petroleum, of which half a pint may be obtained at a drug store. (*See accompanying prescription.*) Then wash the whole head with warm water and soap. Repeat this process on three successive days. The nits may then be removed by combing the hair very carefully with a fine-toothed comb wet with vinegar. Repeat the combing for several days until no more nits can be found. To make the treatment easier and more thorough, the hair may be cut short if there is no objection.

All the children in a family are likely to be affected, and should also be treated as above.

Brushes and combs should be cleansed by putting them in boiling water for a few minutes.

On a separate slip of paper is a prescription for eight ounces of crude petroleum, to be obtained at a drug store. This is usually retailed for ten cents. It is not injurious to the scalp, even when eczema is present and will destroy the life of nits as well as of pediculi.

The examinations were made, as far as possible, and the cards given out just before the Christmas vacation, thus giving the children nearly two weeks in which to clean up. The method of examination employed by me was to have the children file past me in turn without delay while I was seated by a window affording a good light. A movable blackboard, used as a screen, secured a considerable degree of privacy. The diagnosis of pediculosis was based simply on the presence of ova or "nits" in the hair as it is difficult or impossible to find the lice in all cases. The nits prove that there have been lice, and that there will be others unless preventive treatment is used. A teacher with a list of the children's names sat beside the examiner to keep the record. The children were classified in four groups. In the first no ova or pediculi were found; in the second there was a small number of ova, two or three to a dozen being readily found; the third group showed a considerable number of ova; the fourth group showed a very large number of ova and frequently of lice.

At the beginning of the next term all children, except those of the first group, were re-examined to note the result of treatment. Those children who still showed the presence of nits were, therefore, excluded from school; those under group two for two or three days, and those in groups three and four for a week. The exclusion of these children from the schools was done on the authority of the masters, who are directed in their printed instructions to exclude "uncleanly" children. On account of the large number of children who were found on the second examination not to be free from nits, and who would, therefore, continue to be excluded from school, it was decided by the masters, in view of the great difficulty which intelligent appearing mothers claimed to have in removing nits, that, for the present, all children would be admitted to school without re-examination on presenting a written statement signed by a parent to the effect that petroleum had been applied to the hair as directed on the cards.

As will be seen, the above plans require an enormous amount of work on the part of the medical inspectors, some of whom, like myself, have five schools, including some 3,000 children, under their jurisdiction. This work is cheerfully performed by the inspectors, in spite of the very small pecuniary compensation, in view of its great educational and hygienic value to the children themselves and to the community as a whole. I wish to testify to the great assistance received from Mr. Meserve, master of the Bowdoin School and from his teachers, through their willing co-operation and hearty approval. Some of the teachers had been themselves infected from their pupils as many as four times.

To give an exact idea of the prevalence of pediculosis, I present the result of my examination at the Bowdoin Grammar School on Myrtle Street, within two blocks of the State House. The ages of the children are from six to sixteen years. The great majority of these children come from respectable families, although there is a considerable element of the poorer class represented. They were all girls, except some fifty boys in the primary grade. The number of children examined in this school was 756, with the following result:

200 (26 per cent.) had no nits.
234 (31 per cent.) had a few nits.
269 (35.5 per cent) had a considerable number of nits.
53 (7 per cent.) had a very large number of nits.

A dozen or more of these children showed considerable eczema of the face or scalp and enlarged cervical glands resulting from this pedicular condition. These children all received their cards before the Christmas vacation. Some two weeks later a re-examination of 509 of them showed the astonishing and discouraging result of only 26 children free from nits. About a quarter of the whole number stated that no treatment whatever had been given them by their parents. The 483 who still had nits were at once sent home, with the result that the parents began treatment in dead earnest. There was undoubtedly considerable mortification felt by the parents and children on receiving these printed notices and on being excluded from school. Calm reflection, however, convinced most of them that the work was done in their own interest. Those who were found to have only a few ova were told that there was no blame attached to them, and that under the old *régime* their compulsory association with a few children in each room who were in a filthy condition made frequent infection a certainty; but it was hoped that such danger would be averted hereafter. A few parents were unreasonable and refused to be pacified. In some 30 or 40 families the mothers declared that the inspector had made a mistake. In all these cases but one the inspector showed the parents or children the nits which they had failed to find. In the solitary exception the child was not brought to the inspector until two weeks after the time at which he had declared that a few nits were present. In several cases children desired to return to school on the strength of a certificate signed by a physician to the effect that no nits or lice were present. These cases were referred to the inspector, who found that in each case ova were present. One woman, to make her case sure, sent her child back to school with certificates from four physicians, some of whom were connected with our best hospitals and dispensaries, and some with the poorest. Happening to be in the building when the child arrived with these documents, I found she still had nits, and, with her consent, took her to the Boston Dispensary, where Dr. Post and Dr. Hastings certified in writing that the child had nits. This illustrates the danger of giving certificates on the part of those who are careless or not sufficiently experienced. It is to be hoped that the medical profession will help rather than hinder this attempt to purify the schools from their plague of pediculosis.

Among the amusing protests received from parents was the following: A small boy whose head was found free from pediculi reported to his parents that the doctor had examined his head and found "nothing in it." The fond mother, understanding that her hopeful offspring had been declared an idiot, rushed to the master and protested against such treatment. The diagnosis was therefore transferred from the child to the mother.

Pediculosis was found to be more prevalent among the children whose parents were of foreign birth, and many of whom could not speak English. Nearly all the worst cases were among these. The remarkable fact appeared that the best record for freedom from pediculosis was held by the colored children, most of whom were very poor and lived in the vicinity of Philips Street. The explanation seemed to be that these children almost invariably have oil, vaseline, or some pomade applied freely to the hair to make it lie smooth and stay parted, and these substances proved disagreeable to the would-be guests. The colored children whose hair was dry had the usual proportion of pediculi.

A word more in regard to the ages at which pediculosis was most common. Of kindergarten children, whose mothers take entire care of their hair, less than half had pediculi. Of the primary children, ranging in age from six to twelve years, who are largely left to take care of their own hair, but who do not do it carefully, five-sixths had pediculi. Of the large girls, from twelve to sixteen years of age, nearly three-fourths had pediculi.

Edward M. Greene, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, January 8, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York . .	1,868,060	770	259	10.14	18.72	.13	2.99	3.12
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	474	161	14.70	15.96	3.15	6.93	1.26
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	185	56	8.10	9.72	1.62	4.32	.54
Boston . . .	517,732	208	55	7.20	14.40	1.44	2.70	.48
Cincinnati . .	405,000	112	—	7.14	18.69	—	6.23	.89
Cleveland . .	350,000	64	22	4.68	15.60	1.56	3.12	—
Pittsburg . .	285,000	100	42	20.00	18.00	8.00	2.00	—
Washington .	277,000	98	23	7.00	14.00	3.00	4.00	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Nashville . .	105,050	36	12	—	30.47	—	—	—
Worcester . .	105,050	37	13	8.10	13.50	2.70	—	—
Fall River . .	95,919	44	19	6.81	29.51	—	—	—
Lowell . . .	87,193	30	5	3.33	26.66	—	3.33	—
Cambridge . .	86,812	36	4	—	13.85	—	—	—
Lynn	65,220	12	—	8.33	—	—	—	—
Charleston . .	65,165	31	7	3.23	9.69	3.23	—	—
New Bedford .	62,416	21	9	4.76	23.80	—	—	—
Lawrence . .	55,510	24	12	16.64	16.64	4.16	12.48	—
Springfield . .	54,790	28	9	7.14	10.71	—	3.57	3.57
Holyoke . . .	42,364	12	5	25.00	8.33	—	8.33	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	13	3	23.07	7.69	15.38	7.69	—
Brockton . .	35,853	9	0	—	22.22	—	—	—
Malden . . .	32,894	7	1	14.28	14.28	—	—	—
Chelsea . . .	32,716	12	2	8.33	25.00	—	—	—
Haverhill . .	31,406	4	1	—	25.00	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	6	0	—	—	—	—	—
Fitchburg . .	28,392	9	2	—	11.11	—	—	—
Taunton . . .	27,812	17	3	—	—	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	1	40.00	—	—	20.00	20.00
Everett . . .	21,575	4	1	—	50.00	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	4	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,489; under five years of age 751; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 247, acute lung diseases 417, consumption 275, diphtheria and croup 93, typhoid fever 39, scarlet fever 37, diarrheal diseases 25, measles 22, whooping-cough 12, cerebro-spinal meningitis 10, erysipelas 3, malarial fever 3, puerperal fever 3.

From diarrheal diseases Philadelphia 9, New York 7, Fall River 3, Baltimore and Providence 2 each, Boston and Worcester 1 each. From measles New York 13, Pittsburg 5, Philadelphia 4. From whooping-cough Pittsburg 5, Philadelphia 3, New York 2, Baltimore and Boston 1 each. From cerebro-spinal meningitis New York 3, Boston and Holyoke 2 each, Lynn, Malden and Chelsea 1 each. From erysipelas New York 3, Boston 1. From puerperal fever Boston, Worcester and New Bedford 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,992,524, for the week ending January 1st, the death-rate was 24.9. Deaths reported 5,256; acute diseases of the respiratory organs (London) 702, measles 289, whooping-cough 150, diphtheria 88, fever 46, scarlet fever 37, diarrhea 37.

The death-rates ranged from 14 1 in Birkenhead to 37.4 in Norwich; Birmingham 24.8, Cardiff 18.1, Gateshead 15.5, Hull 19.2, Leeds 27.6, Leicester 24.1, Liverpool 27.1, London 27.6, Manchester 22.9, Newcastle-on-Tyne 21.1, Nottingham 24.0, Sheffield 22.4, Sunderland 19.1.

METEOROLOGICAL RECORD

For the week ending January 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ...2	29.96	16	23	9	61	29	45	N.W.	S.W.	12	12	C.	C.	
M...3	29.91	20	30	9	61	31	46	S.W.	N.W.	15	18	C.	C.	
T ...4	30.30	15	27	3	48	63	56	N.W.	S.E.	8	12	F.	N.	
W...5	30.08	28	40	15	87	62	74	W.	W.	9	11	C.	C.	.05
T ...6	29.98	38	45	31	78	71	74	S.W.	S.	8	13	O.	O.	
F....7	29.72	38	44	32	96	80	88	N.W.	S.W.	14	11	R.	C.	.19
S....8	29.68	40	49	31	70	76	73	S.	W.	10	17	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 8, 1898, TO JANUARY 14, 1898.

The leave of absence granted **MAJOR EGON A. KOERPER**, surgeon, Fort Crook, Neb., is extended two months.

CAPTAIN PETER R EGAN, assistant surgeon, is relieved from duty at Fort Hamilton, N. Y., and assigned to duty at Fort Hancock and the Sandy Hook Proving Ground, N. J., with station in New York City, and will make daily visits to and between those points until he shall be furnished with suitable quarters at Fort Hancock.

Leave of absence from or about February 1 to April 10, 1898, is granted **LIEUT.-COL. DAVID L. HUNTINGTON**, deputy surgeon-general, Surgeon-General's Office, Washington, D. C.

COLONEL DALLAS BACHE, assistant surgeon-general, will be relieved from duty as chief surgeon, Department of the Platte, on January 20, 1898, and will repair to Washington, D. C., and report in person to the Surgeon-General of the Army, to assume charge of the Museum and Library Division of his office to enter upon duty April 10, 1898, as professor of military medicine in the Army Medical School, to which he is assigned accordingly.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JANUARY 13, 1898.

CARTER, H. R., surgeon. To proceed to the Gulf coast and supervise post epidemic disinfection. January 4, 1898.

WHITE, J. H., passed assistant surgeon. To proceed to the Gulf coast for special duty. January 4, 1898.

MAGRUDER, G. M., passed assistant surgeon. When relieved by Passed Assistant Surgeon **W. J. S. STEWART**, to proceed to Birmingham, Ala., for special duty. December 31, 1897.

STEWART, W. J. S., passed assistant surgeon. Thirty days' leave of absence granted by Bureau letter of December 7, 1897, revoked, and directed to proceed to Memphis, Tenn., and assume temporary command of Service. December 31, 1897.

PETTUS, W. J., passed assistant surgeon. To assume command of Service at Norfolk, Va., in addition to duties as commanding officer of the Cape Charles Quarantine January 10, 1898.

WERTENBAKER, C. P., passed assistant surgeon. Granted seven days' leave of absence from January 9, 1898. January 7, 1898.

GARDNER, C. H., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon **W. J. PETTUS**, to rejoin station at Baltimore, Md. January 10, 1898.

HASTINGS, HILL, assistant surgeon. To proceed to Birmingham, Ala., and report to Passed Assistant Surgeon **G. M. MAGRUDER** for special temporary duty. January 8, 1898.

MCMULLEN, JOHN, assistant surgeon. To proceed to Chicago, Ill., and report to the commanding officer for duty and assignment to quarters. January 10, 1898.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 15, 1898.

KIDDER, B. H., medical director, detached from duty with the Medical Examining Board, Washington, January 21st, and ordered home on waiting orders. Retired, January 23d.

A. W. DUNBAR, passed assistant surgeon, detached from the "Vermont" and ordered to the "Nashville," January 15th; on arrival of "Nashville" on the European station ordered to the "San Francisco."

TALKS ON THE HISTORY OF MEDICINE.

Dr. David Hunt, of Boston, will give informal lectures on "The History of Medicine," by invitation of the Harvard Medical Alumni Association, at the Harvard Medical School on Thursdays, January 13th, 20th, 27th, at 8 P. M. The profession and the students of the Harvard Medical School are cordially invited to attend.

J. S. STONE, M.D., *Secretary.*

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, January 24th, at 8 o'clock.

Dr. R. C. Cabot will read a paper entitled: "Acute Pericarditis as a Cause of Hepatic Enlargement, with the Report of a Case." Drs. G. M. Garland, H. F. Vickery and G. G. Sears are expected to take part in the discussion.

Dr. G. L. Goodale will read "On the Treatment of Certain Forms of Cervical Adenitis by the Introduction of Medicaments into the Crypts of the Faucial Tonsils." For the discussion Drs. S. W. Langmaid and F. C. Cobb.

JAMES G. MUMFORD, M.D., *Secretary*, 197 Beacon St.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, January 26, 1898, at 8 P. M.

Papers: Dr. Wm. M. Conant, "Two Twisted Pedicled Ovarian Cysts, with Complications."

Dr. C. G. Cumston, "Remarks on the Pathology of Epithelioma of the Uterus."

F. W. JOHNSON, M.D., *Chairman.*
C. H. HARE, M.D., *Secretary.*

MEDICAL SOCIETY OF THE STATE OF NEW YORK. — The ninety-second annual meeting will be held January 25, 26 and 27, 1898, in the City Hall, Albany, commencing at 9.15 A. M. on the 25th and ending at 1 P. M. on the 27th

Business Committee: Willis G. Macdonald, Chairman, 27 Eagle St., Albany, Ernest Wende, Buffalo, B. Farquhar Curtis, New York.

OBSTETRICAL SOCIETY OF CINCINNATI.— At its annual election the Obstetrical Society of Cincinnati elected officers as follows: President, Dr. E. S. McKee; Recording Secretary, Dr. Wm. Gillespie.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Laryngeal Tuberculosis with Cupric Interstitial Cataphoresis, with Report of Cases; The Advantages of Direct Laryngoscopy in this Method. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprint. 1897.

The Earliest Recorded Discovery of Thermal Springs. By Prosser James, M.D., Late Lecturer on Materia Medica and Therapeutics at the London Hospital, and Physician to the Hospital for Diseases of the Throat, etc. London: John Bale, Sons & Danielsson, Ltd. Reprint. 1897.

Original Articles.

HEART COMPLICATIONS IN DIPHTHERIA.[1]

BY CLEON MELVILLE HIBBARD, A.M., M.D.,
First Assistant Resident Physician, South Department of the Boston City Hospital.

THE following observations are the result of a study of 800 consecutive cases of diphtheria in the South Department of the Boston City Hospital:

Pulse-Rate. — Observations on the maximum rate were made in 798 cases; the results were as follows:

Rate.	Recovered.	Died.	Mortality.
Less than 130	436	22	1.8%
130	114	22	16.2
140	85	19	18.2
150	24	16	40.0
160	18	23	56.1
170	1	7	75.0
180 and higher	1	10	90.9

In over half of the cases the rate did not exceed 130 per minute, and the mortality among these was less than five per cent. As the rate increased so did the percentage of death. Less than half of those whose rate was 150 or over, recovered. In other words, a high pulse-rate of 150 or more is prognostic usually of a fatal result.

Bradycardia. — In 23 cases the pulse-rate was as low as 60 per minute on one or more occasions. Among the 14 who were seventeen years of age or older there were no deaths, and only two had other cardiac symptoms. Of the six who were less than seven years, there were four deaths from heart and one from lung disease. Of nine who were less than seventeen years, all but one had had some other cardiac symptom.

Thus it appears that in diphtheria a transitory slow pulse in adults has no special significance; while in children, and particularly in young children, it is a symptom of cardiac trouble, often of a grave nature.

Irregularity of Pulse. — This was noted in 70 cases of this series; but this number cannot be taken to represent the exact frequency, as some cases were doubtlessly not recorded. However, it can be safely said that at least 10 per cent. of diphtheria cases have an irregular or an intermittent pulse some time during the course of the disease. It was observed generally in the severe cases of infection, and but six times in the mild attacks.

The time when it was first recognized varied anywhere from the day of admission to several weeks in the convalescence; often it was during the first few days that the patients were up, especially if they became fatigued. The duration lasted from a day to weeks. Excepting in the fatal cases, it usually disappeared in a few days if the patient remained quiet in bed.

The significance of this irregular pulse is shown by the fact that in over half of the cases where it was observed there were other heart symptoms, as murmurs, or the patient died of cardiac trouble, as from dilatation and heart paralysis.

An irregular or intermittent pulse was often noticed several days before the appearance of the systolic murmur at the apex.

The frequency of this irregularity in the fatal cases of diphtheria is seen in the statement that it was noted in one-fourth of them, which is surely too low a percentage. The mortality among these 70 cases, with an irregular pulse, was 31, or about 47 per cent.; in 19 of the 70 cases there was also an intermittency with nine deaths.

The cause of this arrhythmia is most probably due to certain changes in the vagus nerve interfering with the innervation of the heart or to local changes in the cardiac ganglia or the myocardium.

No record was kept of irregularities in the volume of the pulse. However, it was often noticed when the rate was rhythmical; and such variations in the volume are surely as common as in the time.

A weak pulse was more frequent than an irregular one, and was of about the same clinical importance as to the prognosis and the treatment.

A reduplication of the heart's second sound was observed in six cases. A systolic murmur at the apex was heard in four of these. Three of these six cases died. There were doubtless other instances of a reduplication that were overlooked. Still, one must consider this as a symptom indicative of a possible serious result.

Cardiac Murmurs. — All the murmurs heard in the children in this series were systolic in time, with the exception of three cases of chronic heart disease. The location was about equally divided between those heard loudest at the base and those loudest at the apex.

The basal murmurs, usually most distinct over the pulmonic area, were frequently heard on admission, continuing for a few days; or during convalescence, especially in anemic patients.

A systolic murmur at the apex was noted 57 times in this series. In another series of 252 cases where the hearts were examined almost daily a systolic murmur at the apex was heard in 28 patients. In other words, a systolic murmur at the apex with an accentuated pulmonic second sound, and often with some enlargement of the cardiac dulness is seen in about ten per cent. of diphtheria cases during the course of the disease. The time when it first appeared in 44 cases was as follows:

During first week of illness	9 cases.
" second " "	2 "
" third " ".	9 "
" fourth " "	5 "
" fifth " "	2 "
" ninth " "	1 case.

The duration of this murmur varied from one day to several months. In 24 cases where the heart was under observation until the murmur disappeared the time was as follows:

Within one week	10 cases.
" two weeks	6 "
" three "	5 "
" four "	1 "
" five "	1 "
" eight "	1 "

There were 15 cases in which the murmur was heard on discharge at the end of from five to sixteen weeks from when first observed, and in some of these cases it was heard two months after leaving the hospital.

The character of this murmur varied from a very soft blowing sound to a rough one. In some it could not be heard outside of the apex; in others it was transmitted into axilla or heard over the left back. In two cases it was musical. This character of the murmur appeared in one on the tenth day, and was still heard at the end of five months; the other on the thirtieth day, and disappeared in two weeks.

There is no special prognostic significance to an apical systolic murmur with an accentuated pulmonic second sound when the patient is kept quiet. The mortality among these cases having such a murmur was practically the same as for diphtheria cases in general. However, when there is associated with these signs marked enlargement of the area of cardiac dulness, that is in children, as much as two centimetres outside of the normal limit, the prognosis is usually fatal. In other words, the significance of this murmur depends entirely on the nature of its cause.

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[1] This paper will appear in the Medical and Surgical Reports of the Boston City Hospital for 1898.

The etiology of this murmur in diphtheria is probably due to a variety of conditions; possibly, but rarely, to an endocarditis from the diphtheria bacillus;[2] but generally to a relative mitral insufficiency. This inadequacy is due in all probability to an insufficient contraction of the cardiac muscle, or to a dilatation of the ventricle owing to changes in the innervating nerve or the myocardium itself.

If the murmur is due to only a slight weakness of the heart muscle, the prognosis is usually good, since the murmur generally disappears after a few weeks, providing the patient is kept quiet in bed. If the cause is from a dilatation of the ventricle the outlook is less favorable, and depends upon the degree of the dilatation.

To sum up — The great importance of this murmur is, that it informs the physician that there are some changes in the heart's machinery and that no extra strain should be put upon that organ; and it again informs him of the necessity of frequently determining the area of cardiac dulness in these patients to ascertain if there is any dilatation.

The treatment of these cases was, first of all, *rest in bed;* the patient was kept as quiet as possible in a recumbent position, usually, until the murmur had disappeared for a week. Then the child was allowed to sit up for a short while. The time of being up was extended if the murmur did not reappear, otherwise the child returned to bed. If the murmur persisted at the end of six or eight weeks and there was no dilatation, and the heart's action was regular, the patient was permitted to sit up an hour or less, daily, for a week. At the end of this time, there being no untoward symptoms, the time was gradually lengthened until the patient was up for the greater part of the day. In one instance it was four months before the patient could be up all day without ill effect on the heart. The medical treatment consisted usually in strychnia, alcohol, digitalis group and occasionally caffein.

A discussion of 22 fatal cases of diphtheria, where the cause of death was chiefly due to some cardiac trouble, as dilatation, thrombi, paralysis, etc., is not without interest. Below is a brief clinical record of these cases, with a report of the post-mortem examination, from the records of the Pathological Laboratory of the hospital, where these were obtained. In eight cases,[3] the pneumogastric nerve was examined by Dr. J. J. Thomas. As he has kindly given me the results of his findings,[4] these are also added. He used Marchi's method of staining.

No. 59. Boy, aged five years. Had measles and scarlatina. Admitted July 17th, after an illness of two days, with a moderate severe attack of diphtheria. There was nothing unusual in the course of the disease during the first week save that he was somewhat languid. On the fourteenth day the pulse was 130, irregular and weak. Cardiac dulness extended one and a half centimetres outside nipple line, and four centimetres to right of median line. There was a *bruit de galop* heard all over precordia, loudest at apex. The first sound over the pulmonic area was sharp and valvular. Vomited twice during the day; had a restless night. Next day had a partial collapse. Heart dulness one centimetre farther to both right and left, the apex beat in sixth space. A systolic murmur heard at apex. Pulse weak, irregular and intermittent. Complained of pain in right iliac region. No note of any paralysis. Died on the seventeenth day.

Post-mortem examination. Heart enlarged; weighed 120 grammes. All cavities much dilated and filled with post-mortem clots. Auricular-ventricular valves, especially the mitral, were dilated. Heart muscle yellowish and opaque. Congestion of lungs, liver, spleen and kidneys.

Pneumogastric nerve showed marked and extensive degeneration of a large proportion of the fibres, with considerable fatty change. Section of the floor of the fourth ventricle of the brain showed a moderate degeneration of the nerve fibres, while the cells were normal.

No. 63. Boy, aged three years. Had measles three months prior to admission. Entered hospital March 5th, with tonsillar and laryngeal diphtheria. Child improved rapidly and went home in eight days. Re-admitted in thirteen days on account of some laryngeal symptoms. Had then one-eighth of one per cent. of albumin with casts and fatty renal cells. Edema of ankles. On the thirtieth day had a collapse; pulse, which had varied between 110 and 130, was so rapid and weak that it could not be counted. A systolic murmur heard at apex. Died suddenly the same day. There was a nasal voice; he was rather dull and stupid during the last week.

Post-mortem examination. Heart enlarged, weight, 120 grammes. Valves and cavities normal. Slight bronchopneumonia and general acute lymphatic hyperplasia.

Pneumogastric nerve showed considerable numbers of degenerated fibres, with but little fat. Most of the fibres were, however, normal.

No. 79. Boy, aged three years. Admitted March 31st, after an illness of five days, with laryngeal diphtheria. He was intubed on entrance. The tube was removed twice, but had to be re-introduced at once. On the eleventh day in hospital coughed the intubation tube up and was dead in less than a minute. No note of any paralysis.

Post-mortem examination was practically negative save for slight hyperplasia of the lymph glands. Heart: weight, 65 grammes, normal.

Pneumogastric nerve showed marked degenerative changes of most of the fibres. There was considerable fat present in both the nerve sheath and the axis cylinder.

No. 105. Boy, aged five years. Had measles. Admitted July 19th, with diphtheria of two weeks' standing; was in a very septic condition. Pulse was weak, 78. He failed rapidly, and died the next day. No note of any paralysis.

Post-mortem examination. There was diphtheritic pharyngitis, tonsillitis, glossitis; congestion of lungs, spleen and liver with ascites and hydrothorax. Heart enlarged, weight 140 grammes. Left ventricle dilated; both sides contained clotted blood. Both mitral and tricuspid valves seemed somewhat dilated.

Pneumogastric nerve had rather a slight degeneration of the fibres, and only a moderate number of them were affected.

No. 117. Boy, aged twenty months. Admitted April 8th, with diphtheria of nose and throat of four days' continuance. Throat cleared up in four days. Pulse varied between 140 and 100. On the thirteenth day in the hospital he suddenly died. There was a profuse nasal discharge on the eleventh day. No post-mortem examination.

No. 171. Girl, aged two and one-half years. Admitted April 21st, with septic diphtheria of throat and nose after an illness of three days. She remained in a prostrated condition. Pulse varied from 110 to 130 and on the eighth day of illness fell to 80, weak in volume. Died on this day. No note of paralysis. No post-mortem examination.

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[2] Dr. R. M. Pearce, in his Bacteriological Report, mentions a case of acute endocarditis in a patient who died of diphtheria, measles and pneumonia, where the origin may possibly have been from the Klebs-Loffler bacillus. (See Medical and Surgical Report of the Boston City Hospital for 1898.)

[3] Nos. 59, 63, 79, 105, 325, 331, 363 and 534.

[4] A full and detailed description of this work is seen in the Medical and Surgical Report of the Boston City Hospital for 1898.

No. 247. Girl, aged five years. Had measles. Admitted May 8th, with septic diphtheria of nose and fauces. On the third day pulse fell from 120 to 72; it had been irregular from the first. Had a collapse on this day, and died in seven hours. No record of paralysis. No post-mortem examination.

No. 284. Boy, aged fourteen years. Admitted May 18th, with a severe case of septic diphtheria of eight days' duration. Albumin one-eighth of one per cent. Began to vomit on third day in hospital, and this vomiting persisted. He had a marked nasal voice and regurgitation. He was dull and lost weight from the first. Pulse was very weak; no murmur. He suddenly died on the fifteenth day of the disease. No post-mortem examination.

No. 316. Girl, five years old. Admitted May 27th, with a moderately severe attack of diphtheria. Pulse, 120, regular, and of good strength. On the fourth day pulse fell from 90 to 50, and was of poor volume. The child had been in a rather languid state since admission, would not sit up in bed. No paralyses were observed. She gradually failed, and died on the eighth day in the hospital. No post-mortem examination.

No. 325. Boy, aged six years. Admitted May 29th, with pharyngeal and nasal diphtheria of two days' continuance. During the first fortnight the throat cleared up. On admission, the heart area was normal, and a loud systolic murmur was heard at apex. Pulse varied between 120 and 70. The child took little interest in the affairs of the ward. The urine had a trace to one-eighth of one per cent. of albumin. There was paralysis of the palate. On the thirteenth day in the hospital the heart dulness had extended from one centimetre to the right of sternum to one centimetre to left of mammary line. Pulmonic second sound was accentuated. The second sound at the apex was reduplicated every ten or twelve beats. For a time the murmur disappeared. On the forty-first day the heart's dulness extended to two centimetres outside of nipple line. There was a soft systolic murmur at the apex; the reduplication was more constant. Died on forty-third day of his illness.

Post-mortem examination. Edema, congestion and some atelectasis of lungs. Heart slightly enlarged; weight, 115 grammes. Some hypertrophy, possibly, of left side.

Pneumogastric nerve had a very slight degenerative process, only a few fibres were affected, and rarely a few fat drops. Unfortunately none of the heart muscle was saved.

No. 331. Boy, eight years old. Admitted June 1st, with diphtheritic pharyngitis and some laryngeal symptoms of eight days' duration. On admission, heart-sounds and area normal. Pulse regular, varied for ten days between 70 and 100. Five days later he was noticed to be quite dull. His color was pale. Heart-sounds weak. Urine had one-eighth of one per cent. of albumin. Evidently losing weight. On the ninth day in the hospital there was a suggestion of a systolic murmur at the apex. He had a marked nasal voice. Two days later a faint murmur was heard. The first and second sound at the apex were of the same length. Occasionally there was a reduplication of the first or second sound. The action was irregular. Next day the radial pulse could not be felt. Heart beats were 134. He vomited some, and complained of pain in right knee and toe (the cause of this symptom was not evident). Patellar reflexes diminished. Extremities cold. Lips cyanotic. The following day, the fifteenth of illness, two hours before death, heart-rate was 200, and during inspiration would stop for three or four beats. A *bruit de galop* heard over the whole precordia.

Post-mortem examination. Heart enlarged, weight 155 grammes. Length from base to apex 13 centimetres; transverse diameter ten and a half centimetres. All cavities distended with blood. In the auricular appendages there were delicately mottled grayish white clots. Tricuspid valve would almost admit the tips of four fingers, and the mitral three. The left ventricle greatly dilated, walls averaging eight-tenths to one centimetre in thickness.[1] Valve curtain normal. There was also atelectasis of left lung and subpleural ecchymoses.

Pneumogastric nerve had a moderately but diffuse degeneration of the fibres with little fatty change. In the medulla the nerve cells were normal, but the fibres were quite diffusely degenerated.

No. 363. Boy, aged six and one-half years. Had measles, scarlatina, diphtheria and pertussis. Admitted June 10th, with septic diphtheria of nose and throat, and was in a prostrated condition. He began to vomit on the third day and later would retain nothing by mouth. Urine contained one-tenth of one per cent. of albumin. Child was restless, rolled and tossed about the bed. Heart action regular; no murmur was ever heard; pulse was weak; there was nasal regurgitation. During the last two days he was semi-conscious and died on the eleventh day of his sickness.

Post-mortem examination. Heart slightly enlarged; weight 105 grammes. Left ventricle slightly dilated; mitral valve readily admitted two fingers beyond the first joint. Wall from 0.5 to 1.2 centimetres thick. Other valves normal. The rest of the examination showed a diphtheritic rhinitis and tonsillitis, and acute general lymphatic hyperplasia.

The pneumogastric nerve had a moderately extensive degeneration of the fibres, the majority of which showed the presence of fat.

No. 369. Girl, aged five years. Had measles, diphtheria, pneumonia, and was just over scarlatina and chorea. The symptoms of the latter still persisted. Admitted June 12th, after an illness of three days with diphtheria of nose and throat. The urine had one-eighth of one per cent. of albumin with some fat (post-scarlatina). Heart on admission was regular, and there was a loud systolic murmur at apex, which persisted until death. Pulse varied from 130 to 140. There was a nasal voice. Patient appeared to gain some during the first fortnight, then was at a standstill until about three days before death, which was on the twenty-first day in the hospital. She died in a partial collapse, which lasted about twelve hours.

Post-mortem examination. Pericardial fluid slightly increased. Heart enlarged; weight, 115 grammes. Left auricular appendage contained an irregular, rather roughened, grayish opaque thrombus 1 × 1 × 2 centimetres. In left ventricle, on the anterior wall, was a thrombus 1 × 4 × 5 centimetres; both sides of heart contained considerable clotted blood. Atelectasis of lungs with edema and congestion. Chronic passive congestion of liver.

No. 377. Boy, aged nine years. Had diphtheria and scarlet fever at six. Has always been excessively fat; weighed 120 pounds on admission, June 12th. He had then a severe septic diphtheria of nose and throat of three days' continuance. Pulse was weak and heart-sounds were faint. Albumin one-eighth to one-fourth of one per cent. Began to vomit in a few days, and this continued during life with more or less persistency. On the fourteenth day cried out with pain, referred to cardiac region; this would last for eight or ten minutes. Had a marked nasal regurgitation and voice, and had also great difficulty in swallowing. Towards the end, retained no food by mouth. He failed gradually, and during the last three days was delirious. Frequent examinations of the heart showed only a feeble and irregular action, no murmurs. Area of dulness undetermined on account of excessive fat. Died on the thirty-eighth day of illness. No post-mortem examination.

No. 400. Girl, aged two and one-half years. Admitted June 21st, with septic nasal and faucial diphtheria with considerable prostration; sick three days. There were several ecchymoses on body. Pulse varied from 100 to

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[1] The normal length is 7.04 centimetres, breadth 7.44, thickness 0.86 for a child five to nine years old. (See Keating's Cyclopedia of the Diseases of Children, vol. xi, p. 790.)

120, and gradually became weak. Circulation poor, lips cyanotic, extremities cold. Child was languid, took nourishment poorly. Failed gradually from the first, and rapidly during the last two days. Died in a collapse on the ninth day of sickness.

Post-mortem examination. Heart enlarged; weight, 75 grammes. In the left ventricle, almost at apex, a yellowish, opaque, firm, rough thrombus one and one half centimetres in diameter, attached by a small pedicle two centimetres from apex to the intra-ventricular septum. Besides this old clot, there were considerable elastic, transparent, pale, post-mortem clots. On section, the thrombus appeared to be of a uniform consistency. Valves normal. Other findings. Diphtheritic tonsillitis and rhinitis.

Pneumogastric nerve showed rather extensive degeneration of the fibres, with but little fat. In the medulla there was a slight, acute degeneration of the fibres, while the cells were normal.

Section of the heart and thrombus showed a degeneration of the myocardium where the thrombus was attached.

(To be continued.)

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ACUTE DEGENERATIONS OF THE NERVOUS SYSTEM IN DIPHTHERIA.[1]

BY JOHN JENKS THOMAS, A.M., M.D.,
From the Pathological Laboratory of the Boston City Hospital.

The changes of the nervous system produced by acute infectious diseases are various, especially those produced by diphtheria. Various writers, since Charcot and Vulpian, in 1862, have described the changes in the peripheral nerves. These are usually of the parenchymatous type, consisting of a degenerative process, due to the presence of toxic products arising, in the course of the disease, directly or indirectly from the micro-organisms producing the disease. Nevertheless, the peripheral nerves undoubtedly show at times that an interstitial process has been added to the degenerative one. As regards the central nervous system, Klebs, Dejerine, Oertel, Buhl, P. Meyer, Krauss, Arnheim and Mendel all mention smaller or larger hemorrhages into the brain and spinal cord, and some of them describe processes which they considered to be a myelitis. Probably it is due to the effects of some such process as this, or to an inflammatory infiltration in the central nervous system that we see such diseases as multiple sclerosis following diphtheria, as the cases reported by Schönfeldt. More rarely we see vascular lesions of the brain, embolism, thrombosis or hemorrhage resulting in hemiplegia, as the cases reported by Henoch, Mendel, Jäckle, Auerbach, Edgren, Seifert, Donath, Apolant, Sharples, Sinkler, the writer and others. Meningitis has been described by Pierret, Dejerine and Barth. Whether this is from an infection of the meninges by the Klebs-Löffler bacillus, or due to infection with some of the other varieties of bacteria, so often found in the organs in cases dying of diphtheria, as by Wright, Frosch and others, will have to be determined by further investigations.

Thus we see that the changes produced in the nervous system by diphtheria are quite varied. The cases reported in this paper do not cover all the changes of the nervous structures in this disease, but show somewhat the extent of the acute degenerative changes produced by it. It is hoped that in a future paper some other points in the changes of the nervous system in diphtheria can be taken up, particularly the changes in the nerve cells, as shown by Nissl's stain. These investigations were begun with the intention of seeing whether or not degenerative changes were common in the pneumogastric nerves of cases dying suddenly from failure of the heart during diphtheria, or during convalescence. Later, examinations were made of other nerves of the central nervous system, and of the heart muscle. While the number of cases is small, it seems to be enough to warrant us in drawing a few general conclusions. For the clinical notes of these cases I have to thank Dr. C. M. Hibbard, of the South Department, and the reports of the autopsies and results of cultures have been abstracted from the records of the pathological department of the Boston City Hospital with the kind permission of Dr. W. T. Councilman.

The cases are as follows: The numbers in parenthesis refer to the numbers in the articles by Dr. J. H. McCollom and Dr. C. M. Hibbard.

Case I. Boy, about ten years. Had been ill three days on entrance. Voice weak. On fifteenth day vomited; shortly after became pale and restless, with rapid and very feeble pulse. After some hours became more quiet, but respiration was rapid and he was still pale, almost cyanotic. Respirations rose to 70. Pulse feeble, and died about five hours after onset of symptoms. The membrane at this time had disappeared. Diphtheria bacilli were found on the eleventh day, however. There was no note of paralysis.

Autopsy. — September 13, 1895. Boy, about ten years. Body length, one hundred and twenty-seven centimetres. Heart: enlarged and cavities dilated, especially the right auricle, which was filled with dark clotted blood; weight, 180 gm. On opening the left ventricle several round, organized, pea-sized or smaller thrombi were found surrounding the chordæ tendineæ. The cusps of the aortic valve were thickened and somewhat retracted, and along their line of closure there was a number of pin-point-sized grayish vegetations. No membrane in pharynx or tonsils. Anatomical diagnosis: endocarditis, chronic fibrinous endocarditis of aortic valve, insufficiency of aortic valve, general dilatation and hypertrophy of heart, chronic passive congestion of liver, kidneys and spleen, anemia and cloudy swelling of liver, acute splenic tumor, chronic passive congestion of lungs, acute mesenteric lymphatic hyperplasia. No cultures.

Microscopical Examination. Pneumogastric nerve: sections showed a most intense and extensive degeneration of nerve fibres. It was impossible to find a fibre which was not affected in most of its course. The amount of fat in the nerve sheaths and axis cylinders was large. Many nerve fibres were represented by a chain of larger and smaller fat drops, with here and there a grayish outline of the fibre visible. In places the axis cylinder could be made out, but when present it was swollen and beaded or broken, and in many fibres no axis cylinders could be made out, but only the beaded, irregular fibre, containing many fat drops, could be seen.

Case II. Girl, age two years. Was admitted with septic diphtheria. Pulse regular, rapid and strong. On the second day vomited. There was a discharge from the ears which ceased three days before death. On seventeenth day had a convulsion in the evening, and an hour and a half later clonic spasms, which continued for half an hour, when death ensued. The examination of the urine was negative.

Autopsy. — September 4, 1896. Clinical diagnosis: diphtheria. Slight congestion of the trachea. Heart: weight, 50 gm. (normal). Brain: normal. Anatomical diagnosis: chronic pericarditis, general lymphatic hyperplasia, subacute splenitis. Cultures: heart, sterile; liver, staphylococcus pyogenes aureus; spleen and kidneys, sterile.

Microscopical Examination. Pneumogastric nerve: many fibres were seen which were grayish in color, granular and swollen, with swollen and beaded axis cylinder. In a few of these fibres there were fat drops. About half of the fibres seemed affected. Sections of the obturator nerve showed the same changes to be present in this nerve, but to a more marked degree. Almost all the fibres were affected, and fat globules were present in large numbers. Anterior crural nerve: here there were similar changes affecting a large majority of the fibres, but fat, while present, was not seen in such amounts as in the obturator nerve. Lumbro-sacral cord: these sections showed an extensive degeneration. Most of the nerve fibres were affected to a greater or less extent. The amount of fat showed considerable variation. In places it was present in moderate amount, while in other places almost every nerve fibre showed the presence of numerous fat globules.

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[1] This paper will appear in the Medical and Surgical Reports of the Boston City Hospital, for 1898.

Case III. Boy, age six years. Admitted with diphtheria. At first there was albumin in the urine, which later diminished to a mere trace. On twelfth day, vomited. Pulse became weaker and more rapid, and the child died on the thirteenth day in collapse. There was no note of paralysis.

Autopsy. — September 11, 1896. Heart: weight 135 gms. Left ventricle dilated. Mitral valve insufficient. Foramen ovale patent. Brain was normal except for increase of fluid in the ventricles. Anatomical diagnosis: open foramen ovale, general ascites, follicular enteritis. Trachea, larynx, etc., normal. No cultures.

Microscopical Examination. Pneumogastric nerve. Cross-section: few fibres showed replacement of axis cylinder or myelin sheath by fat. Almost all showed a brownish discoloration, and in many myelin sheaths the grayish ring was irregular and of varying thickness. Some fibres were much swollen. The axis cylinders had lost their refractive appearance, and sometimes had entirely disappeared. Longitudinal sections: there were a few fat globules on the nerve sheaths and inside them. The sheaths were stained grayish, and were very irregular, striated and granular in appearance. The axis cylinder, when present, was grayish in color and much beaded. Many of them were broken into short masses, some normal in color, others stained gray. In many cases the axis cylinder could not be made out. Phrenic nerve: changes similar to those seen in the pneumogastric nerve were found, but less marked, and only about half the fibres seemed affected. Splanchnic nerve seemed perfectly normal. Semi-lunar ganglion showed no marked fatty changes of fibres or cells. Heart: the muscular fibres of the heart had lost in part their striations, though in most of them longitudinal striations could be seen. Some of the fibres had a homogeneous appearance. Very rarely fibres were seen containing fat drops, and occasionally one containing a vacuole. Many of the small blood-vessels were dilated, and filled with blood, and there were occasional hemorrhages into the connective tissue about the blood-vessels. Here and there throughout the connective tissue, sometimes in the neighborhood of a blood-vessel, there were infiltrations of small, round lymphoid cells, with round, deeply staining nuclei and little protoplasm. There were also occasional larger cells, with less deeply staining, granular nuclei and more protoplasm. Similar areas of infiltration were seen here and there in the muscular substance.

Case IV. Woman, age sixty-one years. Admitted with septic laryngeal and faucial diphtheria, bronchopneumonia, asthma and cardiac disease. She had been ill two days. She had vomiting. Cultures from the throat showed pure diphtheria bacillus growth. The clinical diagnosis of diphtheria in all cases was made only after examination of cultures from the throat. She had some difficulty in breathing (asthma). Pulse regular. On the third day after admission she had a sudden collapse. Respiration very rapid. Very cyanotic. Pulse very weak. She had had a nasal voice, and regurgitation of fluids through the nose.

Autopsy.— February 22, 1897. Clinical diagnosis: diphtheria. Tonsils enlarged and reddened; in places covered by small patches of grayish-white, rough pseudomembrane, which could be easily removed, leaving a red surface. Beginning near the tip of the epiglottis, a thick, dirty gray membrane extended through the larynx and trachea into the bronchi. This membrane could be easily removed, leaving a rough, red, angry surface. The membrane could be followed in the bronchi of the lung beyond the fourth bifurcation, as far as the bronchi could be recognized and laid open. On section of the lung there were seen in the small bronchi small white dots of membrane, which could be removed with forceps, bringing with them membrane extending into the bronchioles and forming a perfect cast of the air vessels. Heart: weight, 330 gm. Much pericardial fat. Heart muscle flabby, brownish-red color. On the surface of the papillary muscle, here and there, were yellowish spots in marked contrast with the darker heart muscle. In frozen sections the heart muscle was seen to contain small accumulations of fat in extremely small droplets. The valves and cavities otherwise normal. Coronary arteries dilated, tortuous, with walls irregularly thickened in places, and calcareous. Anatomical diagnosis: diphtheritic tonsillitis, laryngitis, tracheitis, and bronchitis, edema of lungs, fatty myocarditis, arterio-sclerosis, acute splenic tumor, acute parencymatous degeneration of liver and kidneys, fibroids of uterus, chronic peritonitis. Cultures: right lung, lower lobe, abundant Klebs-Löffler bacillus. Liver and kidney, colon bacillus. In lung, liver, spleen and kidneys there was also an organism which grew in raised bead-like colonies, which stained faintly with Löffler's methyl-blue stain, but well with fuchsin and carbol-gentian violet stains. It was oval, or rather elongated, in form, with a suspicion of a capsule. Reddened litmus milk. Not motile.

Microscopical Examination. Pneumogastric nerve: sections stained by Marchi's method showed marked degeneration, scarcely any of the fibres being free from changes. These varied considerably in degree, from grayish discoloration and granular appearance of the nerve sheath and axis cylinder to disappearance of the latter and replacement of it, and of the myelin sheath to greater or less extent by fat drops. The fibres least affected appeared granular and beaded, and the axis cylinder even in these fibres could not always be distinguished.

Case V. — Girl, about two and one-half years, was admitted with septic laryngeal diphtheria, and had had seven hemorrhages. She had been ill for six days. The pulse was very weak. The child was intubed at once, but did not breathe any better, so the tube was removed, and she died almost immediately.

Autopsy. — March 2, 1897. Clinical diagnosis: diphtheria with hemorrhage. Heart: weight, 75 gm. Valves and cavities normal. Trachea and bronchi down to the third division of the bronchi showed a firm, well-formed membrane which was stained with blood. The bronchi were filled with blood. The membrane was very well marked in the larynx and area around the epiglottis, where it had become slightly separated. The membrane extended up over the pharynx and tonsils, and slightly inwards over the tongue. The origin of the hemorrhage could not be found. Anatomical diagnosis: acute diphtheritic tonsillitis, laryngitis, epiglottiditis, tracheitis and bronchitis with hemorrhage, acute broncho-pneumonia of right lung, with hemorrhage, acute swelling of liver and kidneys, acute lymphatic hyperplasia, acute splenitis. Cultures: trachea, many Klebs-Löffler bacilli; lung, liver and spleen, streptococci and Klebs-Löffler bacilli; kidney, many Klebs-Löffler bacilli.

Microscopical Examination. Pneumogastric nerve: the sections showed a considerable amount of degeneration, and the presence of a moderate amount of fat in the nerve fibres. Many of the myelin sheaths were granular, irregularly swollen and broken. The axis cylinders were much beaded and broken. Fully one-half of the nerve fibres showed changes, more or less marked.

Case VI (3). Boy, age two years. Admitted with laryngeal diphtheria, and lived two days. Died of broncho-pneumonia. No heart symptoms. Pulse varied between 145 and 175. No paralysis noted.

Autopsy. — March 15, 1897. Clinical diagnosis: diphtheria. Heart: weight, 80 gm. Valves and cavities normal. Pericardium normal, except that it contained about 20 c. c. of clear fluid. Trachea as far down as the bifurcation and the larynx showed a firm, grayish membrane, which in some places was separated from the trachea, and showed beneath a newly-formed membrane. The epiglottis, on its under surface, was covered with membrane. The pharynx showed small spots of this same membrane, and the tonsils showed excavations which were lined with this same membrane. Anatomical diagnosis: acute diphtheritic tonsillitis, pharyngitis, epiglottiditis, bronchitis and laryngitis, acute broncho-pneumonia of upper and lower lobes of right lung, general acute lymphatic hyperplasia. Cultures: right lung, upper and lower lobes, streptococcus; liver, streptococcus (pure); spleen, streptococcus; kidney, an organism resembling the pneumococcus, occurring in short chains, but not the streptococcus; right middle ear, few streptococci.

Microscopical Examination. Pneumogastric nerve: sections from this case showed a considerable number of fibres affected. They were swollen and granular in appearance, and in the greater part of them fat globules could be seen in some part of their course. The axis cylinders in the fibres most affected were absent, and in others were swollen and beaded.

Case VII (63). — Boy, age three years. Was admitted March 3, 1897, with diphtheria, and went home in eight days. Thirteen days later was readmitted with some symptoms of laryngitis. Nine days later, or on the thirtieth day from the first admission, the pulse, which had varied between 110 and 130, became more rapid, and so weak it could not be counted, and the child died in collapse. He had had a nasal voice.

Autopsy. — April 3, 1897. Clinical diagnosis: diphtheria. Tonsils and pharynx normal, except that the tonsils were very much enlarged, and granular. The larynx was normal, the epiglottis was covered with a whitish membrane, which was quite firm, and required some force to remove it. This membrane covered only the epiglottis, and did not extend through any part of the larynx. The mucous membrane of the larynx was hyperemic, otherwise normal. Heart: weight, 120 gm. Valves and cavities normal. Brain: weight, 1,390 gm., normal. Anatomical diagnosis: diphtheritic epiglottiditis, acute broncho-pneumonia of upper lobe of left lung, hydrothorax, hydro-pericardium, general acute lymphatic hyperplasia. Cultures: lung, streptococci; liver, abundant streptococci, one colony of Klebs-Löffler bacillus; spleen, negative; kidney, sterile.

Microscopical Examination. Pneumogastric nerve: sections showed the presence of a considerable number of fibres which were stained gray, and of which the myelin sheath was irregular, swollen, granular and broken. The axis cylinders could usually be distinguished, but they were swollen, beaded and broken. Fat drops were few in number. The greater part of the fibres showed no changes.

Case VIII (78). — Boy, age nine months. Admitted with diphtheria of the nose, cultures being positive, after an illness of seven days. Lived six days. No paralysis noted.

Autopsy. — April 7, 1879. Clinical diagnosis: post-diphtheritic cardiac paralysis. Brain: weight, 880 gm. Vessels of pia injected, otherwise brain was normal. Tonsils, pharynx and larynx normal. On the under surface of the epiglottis, near the base, on the right side, there was a small patch of grayish-yellow membrane, beneath which the mucous membrane was rough and red. On the other side the mucous membrane was rough and of a dull red color. Trachea normal. Heart: weight, 50 gm. Valves and cavities normal. Anatomical diagnosis: diphtheritic epiglottiditis, constriction of esophagus, broncho-pneumonia and bronchitis, general lymphatic hyperplasia. Cultures: right lung, upper lobe, streptococcus, and abundant Klebs-Löffler bacillus; liver, Klebs-Löffler bacillus and streptococcus; spleen, streptococcus (pure); kidneys, streptococcus; right middle ear, abundant streptococcus, few Klebs-Löffler bacilli, and two colonies of staphylococcus pyogenes aureus.

Microscopical Examination. Pneumogastric nerve: sections showed marked degenerative changes. Most of the fibres contained fat drops, some of them in large numbers. The nerve sheaths did not show any marked granular changes, but were much swollen and broken. The axis cylinders were absent in many cases, being replaced by drops of fat. In other fibres they appeared beaded, or were fairly normal.

Case IX (79). Boy, age three years. Admitted after an illness of five days, and lived ten days after admission. The child had laryngeal diphtheria, and was intubed. He coughed the tube up, and died suddenly. No paralysis noted.

Autopsy. — April 11, 1897. Child, of apparently one and one-half years. Tonsils, pharynx, larynx and trachea normal. Heart: weight 65 gm. Valves and cavities normal. Pericardium normal. Brain: slight edema of pia, otherwise normal. Anatomical diagnosis: acute general lymphatic hyperplasia, acute splenitis, toxemia (?). Cultures: heart blood, streptococcus; liver, streptococcus; spleen, streptococcus; kidney, few streptococci.

Microscopical Examination. Pneumogastric nerve: sections showed marked degenerative changes of most of the nerve fibres. The nerve sheaths were grayish in color, granular and swollen, and showed the presence of considerable fat. The axis cylinder was often absent, and when present was usually beaded or broken, and replaced by fat drops.

Case X (331). Boy, age eight years. Had been ill for ten days when admitted. For ten days the pulse varied between 70 and 100. On the tenth day the pulse rose to 134 and became weak. He vomited. Extremities were cold. There had been a marked nasal tone to the voice, and the knee-jerks were diminished. On the thirteenth day of his stay in the hospital, and the twenty-first day of the disease the face became pale, the lips cyanotic, while the pulse rose to 200, and became intermittent, and the child died.

Autopsy. — June 13, 1897. Clinical diagnosis: diphtheria. Heart: left ventricle greatly dilated; mitral orifice admitted tips of three fingers; weight, 155 gm. Pharynx, trachea, etc., normal. Brain: weight, 1,250 gm. Much fluid beneath the pia. Brain substance rather moist. Spinal cord, normal. Anatomical diagnosis: dilatation of heart. Cultures: sterile.

Microscopical Examination. Pneumogastric nerve: sections showed a diffuse degeneration of nerve fibres of moderate intensity. The myelin sheaths were stained gray in color, and were much swollen, while many were broken, but few showed any granular appearance. In many instances the axis cylinder could not be made out, but in others it was swollen and beaded. Fat globules were rare. The sciatic nerve showed about as extensive degeneration as the pneumogastric, but fat was present in moderate amounts. The anterior crural nerve showed similar changes, but affecting almost all the nerve fibres and more intense, while fat was present in the nerve structures in large quantities. Spinal cord: the membranes of the cord were normal. The nerve roots, both anterior and posterior, showed extensive degeneration. Many of the nerve fibres showed the presence of fat drops in, or replacing the myelin sheath. In many of these degenerated fibres the axis cylinder had disappeared, sometimes being replaced by a fat drop, while at other times no sign of it could be seen. In the white substance of the cord there was a moderate diffuse degeneration of nerve fibres. In many cases the axis cylinder was replaced by a drop of fat. In others the myelin sheath was represented by a complete or broken ring of fat with empty centre, or containing a swollen axis cylinder. Again, the nerve fibre was represented by a large drop of fat replacing both sheath and axis cylinder. This degeneration was found in all parts of the white matter, but was somewhat more extensive in the posterior columns. In the gray matter of the cord the blood-vessels appeared dilated, but no hemorrhages were found there or in any other part of the cord. Occasional degenerated fibres showing fat drops were seen throughout the gray matter. The nerve cells of the anterior horn showed practically no changes; there was no fat present in them. In a few cases the nucleolus stained poorly and was irregular in outline. Occasionally a cell was seen which appeared shrunken. In a few cases the processes were separated from the cell body — probably an artefact. The nerve cells of other parts of the gray matter appeared normal. The neuroglia did not appear increased. Sections of the medulla at the upper part of the pyramidal crossing showed the same diffuse degeneration of the nerve fibres. The nerve cells appeared normal. Sections of the pons showed a marked degeneration of the fibres of the superior cerebellar peduncle with the presence of much fat. The fibres of the formatio reticularis showed a slight diffuse degeneration with a small amount of fat. There was a marked degenerative process in the root of the fifth nerve with a large amount of fat. Sections of the cortex of the brain were practically normal, although occasionally a fibre was seen which showed the presence of fat.

(*To be continued.*)

REMARKS UPON THE PROPER SURGICAL TREATMENT OF TUBERCULOUS BONE DISEASE.[1]

BY ARTHUR TRACY CABOT, A.M., M.D.,
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The surgical treatment of tuberculosis of bone is a subject about which it is difficult to generalize, for the varying conditions of the patient and the part affected often call for a corresponding variation of the plan of treatment.

A tuberculosis is an infective process against which the tissues strive to protect themselves with very various degrees of success in different parts of the body and in different persons. The process by which this protection is obtained is mainly by the formation of a wall of connective tissue, more or less dense, about the tuberculous mass, shutting it in and preventing its spread through the tissues. When this protective effort is of sufficient power to successfully resist the tuberculosis, it does so by thoroughly encapsulating the process and, in that case, the masses of bacilli, cells and the waste products of the cells are compressed within a slowly contracting capsule and undergo cheesy degeneration until, finally, they may even be changed to chalky concretions.

The success of this limiting effort on the part of the tissues depends in a considerable degree upon the vigor of the individual, so that in tuberculous disease of bone (as is well known in tuberculous disease in the lung) a decided improvement in the surroundings and habits of the patient may bring about a cessation of the process.

In many cases of bone tuberculosis the surgeon's reliance must be upon this power of nature to limit the process and must be directed wholly to the patient's general condition with the added benefit of rest to the diseased part, which our back-braces, hip-splints and other fixative apparatus provide.

The numberless cases of recovery from joint tuberculosis in children attest the effectiveness of nature's cure.

The most that we can hope from operation in tuberculosis of bone is the removal of a local focus which is acting injuriously in two ways: first, by interference with the functions of the bone involved; and, second, by the general infection of the system with poisonous products elaborated at the seat of disease.

Tuberculosis of bone is generally a secondary process following some deeper infection. Its removal therefore is, as it were, only palliative and leaves somewhere the primary focus untouched. This primary focus is usually situated in the lymphatic system; not uncommonly in the glands connected with the respiratory or digestive organs. Commonly, also, this primary focus of the disease is well encapsulated, so that when the active and more serious focus of the disease is removed the patient's return to health is gratifying and often long enduring.

It is interesting now to consider what degree of thoroughness we can obtain in the removal of these local tuberculoses. By the amputation of a limb above the seat of disease the removal of the local focus is thoroughly accomplished. Occasionally, a localized tuberculosis can be entirely dissected out with a considerable margin of healthy tissue around it. When this can be done without bringing the tuberculous parts in contact with the healthy, of course that will constitute a thorough removal. This is rarely possible in tuberculosis of bone on account of the difficulties of the deep dissection; and almost invariably the parts about are more or less infected with the bacilli during the process of removal. In operation upon joints this is particularly true; for the infected synovial membrane is often very difficult of removal, as it dips in between the ligaments and the surrounding muscles and must be dissected away piecemeal. During this slow dissection the freshly wounded surfaces are in constant contact with the tuberculous material.

Fortunately the tissues are able to dispose of a moderate dose of the poison, so that a removal that is approximately thorough answers almost as well as if it were absolutely so. It is probable that microscopical amounts of tuberculous material which are left behind are actually destroyed and removed by the tissues. Larger portions are encapsulated and it is interesting to note that these operations, which are followed by thoroughly satisfactory healing, often leave behind them little foci of tuberculous material buried in the cicatricial tissue.

A case which well illustrates this fell under the writer's notice in 1879. The subject was a middle-aged colored woman who had been operated upon by Dr. R. M. Hodges several years before, and he made a thorough resection of the elbow-joint for tuberculosis. The healing had been satisfactory and, at the time the patient fell under the writer's observation, the false joint was entirely free from any signs of disease, healing having been accomplished several years before and having left a thoroughly useful flail-like joint.

The patient was very thin, so that examination of this joint was easy, and no sign of disease about it could be detected. She shortly died of pulmonary tuberculosis, and examination of the elbow was made. Contrary to expectation, a number of little collections of cheesy material were found in the cicatricial tissue making up the false joint. None of these showed the slightest reaction about them and seemed to be in an entirely quiescent condition.

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[1] At a discussion of the subject of "Bone Tuberculosis" in the Surgical Section of the Suffolk District Medical Society, November 3, 1897.

Accepting then the position that in these cases the surgeon's operation is necessarily incomplete and that nature must even afterwards do much to accomplish the cure, it is plain how important it is for the surgeon to do all in his power to improve the patient's general condition and to so arrange his operation as to obviate a long confinement in bed, if possible.

The removal of tuberculous material must be as thorough as it can possibly be made, the bony focus being always hunted up and entirely removed. Where possible, a considerable surrounding portion of healthy bone should be removed with it. This is usually accomplished in resections of the knee and elbow, and also in those cases of disease of the hip in which the tuberculous process is confined to the head of the femur. When, however, the pelvic bones are also implicated, this is more difficult of accomplishment.

When tuberculosis attacks bones in their continuity where it is impossible to remove considerable portions of the bone without seriously interfering with the functions of the part, surgeons usually resort to curetting for the removal of the diseased portions. As these portions are softened, they can usually be quite thoroughly removed with the sharp spoon, and the harder consistency of the surrounding healthy parts gives us considerable help in determining when the diseased portion has been thoroughly removed.[2] After such an operation it is not uncommon to see the surface curetted remain in a carious condition for some little time. This is due to a death of the surface of the bone bruised by the instrument. And in some cases the presence of the tuberculous process reinfects the bone and leads to a continuance of the tuberculosis.

In the carpus and tarsus this recurrence of tuberculosis is almost certain to occur. This is doubtless due in part to the comparatively ill-nourished condition of these bones. Surrounded as they are by cartilaginous joint-surfaces, their periosteal envelope, through which they receive nourishment, is comparatively scanty. It is usually well, therefore, to wholly remove any of these bones that are diseased.

In the wrist the functional result after a removal of many of the carpal bones is usually not good, but in the ankle these operations, when undertaken in the young, give excellent results.

This brings us to speak of the effect of age upon our treatment of tuberculous lesions of bone. So great is this effect that we might almost say that the success of treatment in cases of tuberculosis, other things being equal, is in inverse ratio to the age; that is, the older the patient, the worse the prognosis.

It is often a nice question of judgment whether, in a certain patient, to choose a partial operation, as the removal of the diseased tarsal bones, for instance, or to give up any attempt to save the joint and accomplish a thorough removal of the tuberculous parts by amputation.

This same question as between a partial operation and amputation also arises in cases much exhausted by the disease, and many patients will recover after an amputation, which enables them to quickly leave the bed, who would succumb to the long suppurating process following extensive resection of tuberculous parts.

After-Treatment. — The importance of getting patients quickly out of bed and out of doors has been dwelt upon. The local treatment should, I think, consist in giving the parts absolute rest and, if possible, applying gentle, even pressure over the whole seat of disease. In some cases when removal has been very thorough, a complete closure of the wound may be adopted; and some cases of resection will do well when the wound is wholly closed or where only a slight dependent opening is left for drainage for a short time. In other cases, where, owing to the difficulties of the operation, removal of the tuberculous parts is less complete, this opening is made not only to provide drainage but to afford access to the parts for subsequent treatment, with the hope of enabling and assisting the tissues to throw off the tuberculous process. This may be done by leaving the bony cavity widely open and packed with gauze, or, in case of a joint, by carrying through it large wicks of gauze.

We have in iodoform a substance which has, in a measure, a specific effect upon tuberculous material. It seems to act by stimulating the tissues to an adequate resistance to the tuberculous material left after operation. In a case of an extensive cavity iodoform is generally applied in the form of iodoform gauze or by the means of setons, which are very useful in the ankle- and wrist-joints. When we have considerable sinuses which it is difficult to reach in the application of gauze, iodoform oil affords a good means of applying the drug to the deeper parts and often excellent results are obtained by its use.

Even after healing has been accomplished, it is usually important to protect the parts from motion for a considerable time by the application of apparatus, as, if motion is allowed, the disease is apt to reappear.

Sometimes in connection with the tuberculous process in bone we have very large abscesses in the soft parts. When all parts of these abscesses can be reached and thoroughly curetted, it is not uncommon to obtain a complete closure of the greater part of the abscess by stitching its walls together with deep buried stitches, and, if this can be accomplished, it is the best method of bringing about a cure.

In many cases, however, this thorough curetting is not possible, notably in cases of psoas abscess.

The danger of interference where the operation cannot be thorough is that, if large portions of tuberculous material are left, the infection of the denuded parts which have been curetted rapidly takes place, and this new invasion of the freshly wounded tissue is often accompanied by considerable hectic fever, so that the patient is rather worse off instead of being improved by the attempt at thorough operation.

There is also considerable danger of infecting the parts with other organisms beside the bacilli and thereby bringing about a fever from infection by other pus organisms. In those cases, therefore, where the whole abscess cannot be thoroughly treated, it is wiser to make a small opening, large enough to allow of the discharge of the tuberculous cheesy masses which exist in these abscesses, and to then be content with the injection of iodoform oil and thorough drainage.

The gradual contraction of the walls of the abscess by reason of the cicatricial tissue surrounding it and, also, by reason of the intra-abdominal pressure in cases of psoas abscess, usually brings about a satisfactory condition of improvement, although absolute cure of one of these abscesses is extremely rare.

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[2] Dr. Nichols's observations just recounted to us show how important it is to remove a margin of seemingly healthy bone with the diseased.

THE SURGICAL ASPECT OF THE PATHOLOGY OF TUBERCULOSIS OF THE BONES AND JOINTS.

BY EDWARD H. NICHOLS, M.D.,
From the Sears Pathological Laboratory of the Harvard Medical School.

The following description of the relations to surgical operations of the lesions found in tubercular disease of the bones and joints is based chiefly upon a series of observations made during the past two and a half years. This paper is a preliminary report of those observations. Over one hundred tubercular joints, including specimens of nearly every bone and joint of the body, have been carefully examined macroscopically and histologically. Many of the joints were obtained from operations for the removal of the disease. A considerable number was obtained from autopsies, and in these cases the whole joint with portions of all of the bones entering into the articulation were obtained. A considerable number of specimens of tubercular disease of the spine has been examined. Much of the material was from the Children's Hospital, but the writer is indebted also to the surgeons of all of the general hospitals in the city for material obtained from operations. Many of the latter specimens were from adult patients.

Etiology. — The direct cause of the chronic disease of the bones and joints called "tubercular" is the tubercle bacillus. This fact has been proved by many observations. The essential lesion, the "miliary tubercle," is constantly present in the affected bones and joints, and is precisely like the miliary tubercle found in other tubercular lesions. The tubercle bacillus also is found in the affected bones, joints, adjacent soft tissues and abscess contents.[1] If bits of the affected bones, joints, soft tissues or abscess contents are inoculated into susceptible animals, those animals invariably die of general tuberculosis. If tubercular material be injected into the joints of animals, those joints are destroyed by a chronic disease which has the gross and microscopic appearance of the so-called "tubercular" human joints.

Predisposing Causes. — Congenital tubercular disease of the bones and joints is not proved, but a few reported cases make it seem possible that such cases may occur. Injuries of moderate severity favor the development of tubercular joint disease, while severe injuries are seldom followed by such disease. This probably is because slight injuries cause an inflammatory exudation in which the tubercle bacillus may find conditions favorable for its development, while in severe injuries it is possible that the process of repair is so active that the bacillus is destroyed, even if it obtains entrance into the injured tissues. Sprains of joints are particularly liable to be followed by tubercular disease.

Entrance. — The tubercle bacillus obtains entrance into the body as in any other tubercular diseases, through the lungs, intestines, or, rarely, the blood. In most cases of tubercular bone or joint disease seen at autopsy other older tubercular foci are found, usually enlarged and caseous bronchial or mesenteric lymph glands, although sometimes the joint lesion is the only evidence of tuberculosis that is found.

Minute Anatomy. — The tubercle bacillus enters the body and causes a proliferation of certain cells. This new formation is called a miliary tubercle. The miliary tubercle contains no blood-vessels, and the centre soon becomes necrotic and caseous. In bone, when visible to the naked eye, the tubercles appear as small circular areas, with a yellow caseous centre, surrounded by a purplish-red zone of granulation tissue. Similar secondary tubercles appear about the original lesion, due to dispersion of the bacilli. By the fusion of adjacent tubercles, more or less extensive irregular areas of yellow caseation and softening are formed, surrounded in turn by other and more recent miliary tubercles.

Anatomy in the Bones. — Tuberculosis of bone usually starts in the epiphysis of the affected bones, while osteomyelitis begins generally in the shaft. This fact is of value in differential diagnosis. Miliary tubercles form in the manner just described. The adjacent tubercles fuse and a yellow cheesy mass is formed, surrounded by miliary tubercles. About the tubercles there is an absorption of the supporting beams of bone. In the cheesy mass may be bits of friable necrotic bone. This cheesy mass softens, so that at length an irregular cavity is formed, surrounded by single and fusing tubercles. These tubercles extend for a considerable distance beyond the visibly diseased area, so that in operations upon tubercular bone it is necessary to remove tissue far beyond the obvious seat of the disease in order to remove all of the affected tissue.

Sometimes there is thickening instead of absorption of the supporting beams of the bone, while between the beams there is caseous tubercular tissue. Thus a large mass of bone may become necrotic while retaining its shape, so that a "sequestrum" is formed.

Sometimes in the shorter long bones the marrow and shaft are destroyed, while the periosteum continues to produce cortical bone. Thus the diameter of the bone increases, while the centre is entirely tubercular. In this way a "spina ventosa" is formed.

Anatomy in the Joints. — Most text-books state that tubercular disease of the joints may begin primarily in the synovia, or may be secondary to a tubercular focus in the bones of the joint. The writer has examined over one hundred tubercular joints during the past two and a half years, and has never seen a case of primary tubercular disease of the synovia. Specimens of nearly every joint in the body have been seen, in which it was obvious that the primary lesion was in the adjacent epiphysis. The process in the bone was always more extensive, and caseation was more marked than in the joints. Two cases simulated primary tubercular disease of the synovia, for when those joints were opened there was a general miliary tuberculosis of the synovia, with no visible connection with disease in the bones, but when the bones were sawed open an extensive area of caseation was found in them. Primary tubercular synovitis may occur, but it must be exceedingly uncommon. No claim of the existence of such disease is of value unless every bone entering into the articulation is opened and examined to a considerable depth. Since tubercular disease of the synovia is generally, perhaps always, secondary to tubercular disease of adjacent bone, the removal of tubercular synovia, as recommended by certain writers, is harmful, for the original focus of the disease of the bone is untouched, and the danger of general tubercular infection through fresh wounds is increased.

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[1] The detection of the bacillus in the diseased soft tissues is comparatively easy, but the detection of the bacillus in diseased bone is difficult, and frequently impossible. The writer believes that this difficulty is due to the fact that bone, to be examined microscopically, must first be decalcified in dilute nitric acid. The prolonged soaking of the bony tissues in dilute nitric acid to remove the lime salts in some way interferes with the staining reaction of the tubercle bacillus. This has been demonstrated upon soft tissues which were known to contain the tubercle bacillus in large numbers. If such specimens were soaked in five-per-cent. nitric acid for more than two days it was impossible to stain the bacilli.

The disease of the joints begins generally, if not always, in the epiphysis of the adjacent bone. By the formation, extension and fusion of tubercles it extends toward the joint. Finally it breaks into the joint at some point, frequently at the site of attachment of some ligament, sometimes by direct perforation of the cartilage. The tubercle bacilli are set free in the joint and are diffused throughout the synovial fluid. Circumscribed miliary tubercles appear upon the surface of the synovia. These tubercles fuse and form irregular tubercular ulcers of varying sizes. The joint is filled with a fluid varying from serous to purulent. Tubercular granulations extend with a thin advancing edge from the synovia over the surface of the cartilage. Beneath this granulation tissue the cartilage is destroyed and the articular surface is eroded and pitted. Large masses of cartilage may be separated from the bone, so that the head of the bone is partially destroyed, and subluxations may occur.

Cold Abscess. — The tubercular process is at first confined to the bones and joints. By extension of the tubercles the process may involve the adjacent soft parts. By fusion and caseation of adjoining tubercles large areas of caseous softening or "cold abscesses" may be formed in the periarticular soft tissues. The contents and walls of these abscesses differ from those of ordinary infectious abscesses. They contain no pyogenic cocci unless secondarily affected. They do contain serum, much caseous material, perhaps friable bits of bone, and numerous leucocytes, of which many are necrotic. Sometimes the tubercle bacilli may be found microscopically, but, if they cannot be demonstrated, inoculation of the contents of such abscesses into guinea-pigs invariably produces general tuberculosis in these animals. This fact may be of value in making a differential diagnosis. The wall of the abscess consists of tubercular and not of granulation tissue. Hence the partial removal of the lining, or "pyogenic membrane," of tubercular abscesses is harmful, for generally only a part of the tubercular material can be reached, and the partial removal opens blood-vessels and increases the danger of general tubercular infection. These tubercular abscesses extend, not necessarily downward, in the line of least resistance, but by extension of the tubercular process. Such an abscess may open into the hollow viscera, or upon the surface of the body through sinuses whose walls are tubercular; rarely into the large blood-vessels. Under the latter circumstance sudden fatal hemorrhage may result. Small abscesses may be absorbed and replaced by fibrous tissue; larger ones may remain quiescent for years, or their contents may become calcified.

Repair. — The tubercular process may be self-limited, and repair may be brought about by the formation of fibrous tissue, which replaces or partly encapsulates the tubercular tissue. If this fibrous tissue is formed between adjacent joint-surfaces, fibrous anchylosis results; but such fibrous tissue may become calcified and converted into true bone, producing bony anchylosis. Often caseous tubercular masses are included within the fibrous tissue, showing that the repair is not complete. This fact explains the "lighting up" of tubercular joints supposed to be cured.

Tuberculosis of the Spine. — In the spine the process is modified by certain anatomical peculiarities. The process begins generally in the anterior part of the body of a vertebra, but never in the intervertebral disc. The disease appears to extend from one vertebral body to another along the fibrous tissue in front of the spinal column. As the tubercular process extends the bodies soften and can no longer sustain weight, so that the upper and lower surfaces of a body are pressed together, or a comparatively sound body crushes into a softened one. This produces a projection of the spine, or a "knuckle," posteriorly, and a concavity anteriorly. If the process affects the laminæ there may be a lateral bowing. The intervertebral discs may be destroyed if the disease in adjacent bodies is extensive.

Spinal Abscess. — No spinal abscess may form, but in most cases of Pott's disease seen at autopsy an abscess is found, although it may be small, high up, and unsuspected during life. If the abscess is high up it may press upon the trachea or the recurrent laryngeal nerve and cause dangerous obstructive symptoms. The abscess generally descends and appears in the iliac, lumbar or femoral region.

Knuckle. — The shape of the knuckle depends upon the activity of the process; if the process is active the angle is acute, but if healing has begun the angle is rounded.

Pott's Paralysis. — Complete paraplegia may occur during the course of tubercular disease of the spine. Mere angular deformity can never diminish the calibre of the bony canal sufficiently to produce pressure upon the cord. About one case in fifty of paraplegia is due to direct pressure of a projecting fragment of bone upon the cord. Generally paraplegia is due to a tubercular peripachymeningitis produced by extension of the tubercular process from the bodies or [illegible] vertebræ. The pressure of this tubercular tissue upon the cord is sufficient to cause the paralytic symptoms. Sometimes this pressure is sufficient to cause a complete degeneration of the cord.

SUMMARY.

Many observations prove that tubercular disease of the bones and joints is caused by the tubercle bacillus.

Injuries of moderate severity favor the production of the disease.

In the bones the disease begins in the epiphysis, and is more extensive than appears on gross examination. Hence in operations for removal of the disease a considerable margin of apparently healthy bone must be removed.

Tuberculosis of the joints is generally, if not always, secondary to tubercular disease in the epiphysis of an adjacent bone.

Abscess formation is due to extension of the tubercular process to the soft parts. The contents and wall of the tubercular abscess are different from those of infectious abscesses. Partial removal of the abscess wall is harmful.

Repair is caused by the formation of fibrous tissue, which replaces and partly encapsulates the tubercular tissue. Repair may be incomplete. Fibrous tissue may produce fibrous anchylosis, or the tissue may become ossified and lead to bony anchylosis.

Paraplegia in Pott's disease is rarely due to direct bony pressure. Usually the pressure is caused by tubercular peripachymeningitis. Rarely the pressure causes degeneration of the cord.

THE CONSERVATIVE TREATMENT OF TUBERCULAR JOINT-DISEASE.[1]

BY E. G. BRACKETT, M.D., BOSTON.

WHEN the possibilities of the extension of tubercular processes in bone are considered, the outlook appears so doubtful that nothing but radical measures would seem to be of avail; and were it possible to always definitely remove the whole of a tubercular process, this measure would receive general support, but the difficulty of definite localization of the focus in early stages, when this should be attempted, as well as the impossibility of determining the limits of the affected tissues, prevents this measure from being one of surgical certainty. The value of conservative treatment of tubercular joint-disease cannot be estimated by theory, unless the theory be substantiated by clinical facts, as shown by the results of cases having undergone this method of treatment; and a consideration of this method of treatment must, in a brief communication, consist of simply a statement of the object to be gained, for which this method is used, the means employed to obtain this end, and an illustration of what results may occur when this has been successfully carried out. It would not be claimed that the method would always meet with success, but that success may be expected in a large majority of cases when the conditions are properly complied with, and that the cure by this means is attended with much less destruction of important structures, than when attempted by early removal, which must include much healthy bone, in order to insure complete eradication of even a small area of infection.

The conservative method depends upon the cicatrization in the tubercular process, which at some stage of the disease walls off the affected portion. It is known that if bone is placed under proper conditions it will heal, and for this it is necessary that the diseased part should be kept in a condition of physiological rest, which would vary according to the locality of the disease. The simple placing of a patient in bed as a treatment for any joint-disease, and particularly for a disease of the hip, or the spine, is not the treatment for a diseased joint, for the principle of the conservative treatment is the rigid enforcement of rest, and protection from bruising of the two joint-surfaces, adapted in its detail to each particular joint. It must be borne in mind that the freedom, which to a normal joint is physiological, becomes in a diseased one a source of actual trauma and constant irritation. For the purpose of illustration, the disease of a hip may be used as representing the type of the severe form of disease, and one difficult to treat.

The object of the treatment is to protect the diseased joint-surfaces from all such irritation as may be in its respective stage injurious, until the process of repair is complete. The injury which may come to the diseased joint may be considered as that either of mobility, giving friction of the diseased surfaces, or pressure, or, what is still more harmful, the two combined, and must be prevented by the removal of all natural use and weight-bearing of the limb. In addition to this is, however, the great intra-articular pressure, which comes from the spasm of the powerful thigh muscles, driving the head of the femur against the acetabulum. Examinations of specimens show that the evidence of disease is usually most extensive in the upper part of the acetabulum, the place where most of this pressure would be exerted. Therefore in the thorough treatment of disease in this location there must be rest to the part by immobilization, avoidance of jar and bruising, and the removal of pressure from the muscular spasm.

These indications which are met with in a diseased joint must be treated in the most thorough manner, demanding a continuance of the utmost care for a long period of time, and may be considered under the heads of immobilization, traction, and the removal of weight.

The immobilization must be complete, not only for voluntary movement in the normal planes of motion of the joint, but also all involuntary motion must be guarded against, such as would be occasioned by the child turning and twisting, both when awake and asleep. For this reason, it is not sufficient that a child be simply placed in bed, when this method of treatment is to be used, but must be so secured, as for instance in early cases during recumbency, by the use of the frame, to which the child can be properly strapped, that all injurious motion may be prevented, and attention given to the child's wants without disturbing the rest to the joint.

The traction of the limb to overcome the pressure from the spasm of the muscles must be sufficient to prevent the unusual pressure of the head of the femur against the acetabulum, and must be constant for all such time, as the need of this part of the treatment is evident. This traction must be carried on in the line of deformity of the limb, must be continuous, both when it is applied by the weight during the recumbent and by the apparatus during the ambulatory treatment.

The necessity for the removal of pressure by weight-bearing lasts longer than either that of immobilization or traction. During the ambulatory treatment this is accomplished either by the use of crutches, while the traction splint is worn, or later by the apparatus used as a walking splint, as an ischiatic crutch, transferring the weight to the tuberosity of the ischium.

Three types of cases can be used to illustrate the results of the method of treatment when carried out carefully, and which represent not different types of disease, but cases of different grades of severity.

CASE I. Boy, six years old. At the beginning of treatment presented symptoms of pain, occasional night-cries, slight deformity, slight atrophy, limitation of motion and limp. No spasm while limb was at rest. Treatment carried out by the removal of weight, by crutches, and a high sole. This treatment continued for one year, when all signs of joint disease had subsided. Treatment was then omitted, child allowed the gradual use of the limb with no return of symptoms.

CASE II. Boy, eight years old. Early symptoms of pain, night-cries, limp, deformity, spasm, and limitation of motion. Treatment by traction in recumbency, followed by ambulatory treatment, with splint and crutches. An abscess developed later, which was opened, and discharged for some months. Treatment continued for three years. At the time of last examination, flexion in 90 degrees, abduction one-half, rotation one-third. Limb strong; patient walks with a slight limp.

CASE III. Boy, eight years old. Early symptoms of pain, spasm, night-cries, slight deformity, and limitation of motion. Early treatment in this case was not constant. Later, child entered hospital for an abscess, which was opened. Treatment continued by recumbency for some weeks, later by ambulatory treatment, with traction, high sole and crutches. During the next three years several abscesses formed, with many remissions of symptoms of pain, with increasing deformity and spasm. At the end of five years the child had motion to nearly 90 degrees, rotation nearly normal, abduction one-half, shortening one inch. On the upper part of thigh and buttock are scars of six or seven sinuses. General condition at the time of last examination excellent.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, November 3, 1897.

The first two cases illustrate the abortive influence of the conservative treatment of cases carried out carefully and successfully during its early stages, in which the result of both cases was good. The third case represents one, in which, as the early treatment was not thorough, but by the later continuance of the conservative treatment, the tubercular process subsided, and cicatrization so far was carried on that the joint became a useful one, and thus illustrates the possibility of cure after the disease has become extensive, as is shown by the long continuance of the process and the many abscesses. The treatment by conservative methods, although it requires time and patience, has the advantage that the cure is obtained with the least destruction of bone. When compared with the operative treatment in this respect, it is seen that the loss of substance is much less, and the possibility of a joint mobility is greater. If the attempt is made to remove the disease by operative measures, it must be by the loss of considerable bone substance, or the thorough eradication of disease cannot be expected.

Clinical Department.

A CASE OF DISLOCATION OF THE LOWER END OF THE TIBIA FORWARDS.

BY WILLIAM H. DEVINE, M.D., SOUTH BOSTON.

THIS form of dislocation is so rare that I thought a report of a case might be interesting and instructive.

J. H., aged twenty, occupation milkman's helper, family history excellent, is a strong, vigorous adult, who has been accustomed to same work for several months. The work consists of carrying milk-cans in both hands from the team and delivering at doors. On the morning of December 17th, at 4 o'clock, he alighted from the team with cans of milk (about six quarts) in each hand; he stepped from the footboard, placing his left foot on the step of the team, and then jumped to the ground. On touching the right foot to the ground, he felt pain in the ankle and fell; he was unable to move his ankle. By the aid of his partner he hobbled to my office, a short distance.

On uncovering the leg I first noticed a large prominence over the lower end of the tibia. On examination, I found that there was a complete dislocation of this bone at the lower end. By extension of the ankle, with pressure downward on displaced bone, it was reduced without much difficulty. Side-splints were applied, and the patient removed to his home. Dr. M. F. Gavin later confirmed the diagnosis of dislocation of the tibia forwards. About a week after the accident a plaster dressing was applied; this remained for a few weeks. In about six weeks after the injury the patient was able to resume his work, and at present the function of the joint is apparently normal.

In this case there was no fracture, there was no disturbance in the relations of the bones and joint excepting between the tibia and the astragalus, the former being pushed forwards, and of course torn away from the fibula.

E. M. Moore, in the "Reference Handbook of Medical Sciences," gives the best description of this: "This form of luxation is an exceedingly rare one, and the different cases often vary much in degree. The tibia is sometimes carried forward a short distance only, but it may, however, be carried so far that, instead of resting partially upon the astragalus, it may leave it entirely and stand upon the instep. As in lateral luxation, the fibula is apt to give way above the ankle, and the displacement is sometimes complicated with a fracture of the end of the tibia. The deformity is striking; the heel projects, the lower extremity of the tibia overhangs the instep, and the motion of the ankle is lost. The reduction is effected by flexing the leg upon the thigh, then drawing upon the foot in the line of the tibia."

Bryant's "Surgery" mentions a condition something like the case reported, but both tibia and fibula are dislocated forwards: "Sir Astley Cooper calls this, dislocation of the foot backwards. It is usually caused by the violent propulsion of the lower end of the leg-bones forwards, when the foot is fixed, and is readily recognized by the shortening of the anterior surface of the foot and the proportionate elongation of the heel, with some pointing of the toes, as well as prominence of the lower end of the tibia. At times, the fibula is fractured and the point of the bones carried forwards with the astragalus. This accident is rare, it being more common to meet with fracture of both malleoli, and displacement of the foot and broken fragments backwards."

Hamilton says: "This dislocation may be produced by a violent extension of the foot upon the leg, as, for example, when, the foot being engaged under a piece of timber, the body falls backwards to the ground; or when, the leg remaining fixed, a heavy weight descends on the front of the foot, the foot resting upon an inclined plane; by a blow on the back of the tibia, or possible even by the toes being brought violently in contact with some firm body. The fibula is generally broken on a level with the articulation, the malleolus internus also in some cases, and still more rarely a fracture occurs through the posterior margin of the articular surface of the tibia. Symptoms: The length of the foot in front of the tibia is diminished, while the projection of the heel is correspondingly increased; the toes are turned downwards, and the heel drawn upwards and fixed in this position; the end of the tibia may generally be distinctly felt in front of the astragalus; the extensor tendons of the toes are sharply defined, while the tendo-Achilles is curved forwards, and tense."

This injury can be distinguished from dislocation of the astragalus backwards; in this displacement the body of the astragalus is felt behind the ankle, and the absence of its head from normal position easily recognized.

In my case the tibia was displaced forwards; the other bones preserved their connection and relations to the foot.

The rarity of the injury, and the complete dislocation of the lower end of the tibia, and the absence of any sign of a fracture or injury to any other part of the joint, and its complete restoration of mobility are the chief features of the case.

It is easy to understand the rarity of this luxation when we consider that in order to produce it the anterior, lateral and inferior tibio-fibular ligaments must be ruptured. Any force causing this would naturally be expected to throw the fibula forward with the tibia and possibly fracture one or both bones.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

REGULAR Meeting, Wednesday, November 3, 1897, DR. H. L. BURRELL in the chair.

ORAL COMMUNICATIONS.

MR. McGRATH: On invitation of Dr. Goldthwait, I have brought specimens of bone which are the upper extremities of a case which came to autopsy at the Long Island Hospital last summer. These are the arms of an old woman who had been at the hospital a number of years on account of a disability resulting from the deformity of the arms and from chronic rheumatism. There is very little known of her history. She was probably at least sixty years old. The only point of interest that was determined from her story is that at the age of three, during an epidemic of variola, she was vaccinated with virus taken from another child, and following that she had small-pox and, as she expressed it, blood poisoning. After that time her hands and arms did not grow. She finally succumbed, in August last, to an attack of diarrhea. On examination there is in the right arm a complete anchylosis at the elbow-joint. I might mention first the fact that there was very evident disparity in the length of the humerus of the right and left sides, the right being about three centimetres longer than the left. The position of the bones is extreme inward rotation and supination. The anchylosis is complete. The bones are considerably deformed; the ulna is bent posteriorly. The left arm shows with respect to the humerus a bowing inward of the humerus and a partial anchylosis of the left elbow-joint. Whereas on the right the forearm is very much shortened, on the left it is nearly normal, but the humerus on that side is shortened so that the combined length on the two sides is about the same. It seems as though there was a balancing on the left, the forearm being longer than the right, and on the right the upper arm longer than the left. The position of the bones of the left arm is not unlike that on the right side, the forearm being in a position of extreme rotation and midway between supination and pronation.

DR. S. E. PALMER: This specimen is from a woman fifty-three years old who came to the dispensary last spring, and on examination I felt what I thought was a fibroid — a perfectly solid mass pressing down in the vaginal vault. It seemed a part of the uterus. She had practically no symptoms except those of some slight pressure on the bladder and rectum which were readily relieved, and I encouraged her, thinking it was a fibroid retrogressing after the menopause, to have nothing done and gave general treatment. She came back this fall, thought she felt worse and complained of symptoms of pressure on the bladder and rectum. When I opened the abdomen this hard mass came easily into view. There were very few adhesions to the sides of the pelvis; when these were separated, this thing fell off from the Fallopian tube — nothing to tie off, nothing to sew up. It was attached to the Fallopian tube by the merest thread. She had had the menopause about eight years before. She had no children. I thought it was an infantile uterus. The tumor is filled with hair and there are two teeth inside. The interesting points were the lack of symptoms and the calcareous degeneration of the walls.

DR. J. E. GOLDTHWAIT showed some drawings illustrating deformities of the spine resulting from osteo arthritis.

THE TREATMENT OF TUBERCULAR DISEASE OF BONES.

DR. E. H. NICHOLS considered "The Pathology of the Disease in its Relation to Treatment."[1]

DR. A. T. CABOT'S subject was "The Operative Treatment."[2]

DR. E. G. BRACKETT spoke of "The Non-operative Treatment."[3]

DR. GOLDTHWAIT: My only suggestion would be to emphasize what Dr. Cabot has already called attention to, the difference in the treatment that is necessary in children and adults.

In children conservative treatment undoubtedly gives the best results, but in adults, in a large number of cases, operative interference is necessary. If the joint trouble can be checked without operation, the period necessary for the protection of the joint is shorter in adults than in children, as the bone in the younger cases is softer and more liable to injury.

DR. BURRELL: There are one or two questions I should like to ask Dr. Nichols: First, is it possible where there is tuberculosis of the head of the femur to thoroughly eradicate all of the diseased tissues? Second, is there any way by which diseased tissues may be differentiated from normal tissues macroscopically?

DR. NICHOLS: I have not seen enough joints where I could see both the head of the femur and the pelvis to be sure about the disease. I am inclined to think the disease often starts in the pelvis rather than in the head of the bone because after a number of excisions there has been in the head of the bone very little tubercular disease in cases where there have been abscesses and a very extensive tubercular process besides; and from seeing the other joints I am inclined to think that the original focus was in the acetabulum. In such a case I think it would not be possible to get it all out. I remember one knee where the patient came to the out-patient department with acute symptoms lasting about a week, where it was subsequently found that the only tubercular local focus was a very small area, not so large as a penny, at the junction of the epiphysis and shaft in the tibia. She afterwards died of general miliary tuberculosis. If you had known where the process was in that case you probably could not have gotten all of it out.

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[1] See page 81 of the Journal.
[2] See page 79 of the Journal.
[3] See page 83 of the Journal.

Dr. Burrell: Put it another way. Is it possible, in an operation, to tell macroscopically the limits of the disease?

Dr. Nichols: Surely not at the time of operation, and I think oftentimes not even after the bone has been dried a considerable time.

Dr. Burrell: When and where should the surgeon stop?

Dr. Nichols: The tubercular process is oftentimes one-half inch beyond what you can see, and I don't know how much farther.

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MASSACHUSETTS MEDICO-PSYCHOLOGICAL SOCIETY.

H. C. BALDWIN, M.D., SECRETARY.

Regular Meeting Thursday, November 18, 1897, **Dr. E. Cowles** in the chair.

Dr. J. W. Courtney read a paper entitled,

A CLINICAL AND PATHOLOGICAL REPORT OF A CASE OF FRACTURE OF THE SPINE IN THE CERVICAL REGION, WITH SOME STATISTICS ON FRACTURES IN THIS REGION.[1]

Dr. Bullard: I have been very much interested in the paper of Dr. Courtney, and I think he has brought forward very clearly a good many of the conditions we find in fractures of the cord. I have paid special attention to that subject for some years, and have seen at the City Hospital 15 or 20 cases of laminectomy. I may say that in no one of those cases have we found any pressure of the bones upon the cord; on the contrary, the cord has been perfectly free, so far as could be told, in every case. I have long believed that in most of these cases of fracture of the spine followed by the ordinary symptoms of paraplegia and paralysis of the bladder and rectum we had rather a crush of the cord than any other injury of the cord, and that the crush was produced by the sudden driving forward or backward of a vertebra which then slipped back into place, because in most of these cases no dislocation was found. The only autopsy which I remember at the City Hospital, in addition to this one, was made a year ago, and in that case there was a fracture of the mid-dorsal region, and the cord was found to be crushed and disintegrated for a space of about four inches.

In regard to the question of the total loss of knee-jerk in lesions in the cervical or upper dorsal region I am not able to form a definite opinion. It is generally stated, and the mass of neurological testimony seems to be, that it implies a total transverse lesion. I have among my records one case which lived three months after a fracture in the mid-dorsal region, with total loss of knee-jerks. In this case there was nearly total severance of the cord. I don't think that it is proved that total loss of knee-jerks in a high spinal fracture necessarily implies a fatal termination.

In favor of the operation of laminectomy it might be stated that the operation when done under proper conditions and by skilful surgeons is not a very dangerous one, and that there is always a possibility that there may be a continued pressure on the cord from bone or from hemorrhage, and that the results which are obtained when the patients are not operated upon are not so favorable but that we should be led to do something for improvement. I think there is little doubt that in most of these cases we have a destruction of the cord.

Dr. E. W. Taylor: At Dr. Courtney's suggestion and with his permission I thought it would be of interest to show a specimen taken from one of the cases at the Massachusetts Hospital, not long since. It was a good deal talked about in the papers, and it is of considerable interest on account of the apparently slight character of the lesion and yet the completeness of the transverse destruction. This was the case of the trapeze performer at Keith's theatre, a young English woman who had recently come to this country and in her first performance fell in attempting to do some difficult acrobatic feat and struck in such a way in the net that her back was broken, to use the common expression. She went to the Massachusetts Hospital and was operated upon; death resulted, whether assisted by the operation or not must remain an open question. One of the surgeons at a clinical meeting expressed the hope and belief that in all probability there would be a favorable result from the laminectomy. I believe there have been none at the Massachusetts Hospital in the last few years.

This lesion is of interest from various points of view. In the first place, it is in the cervical enlargement, and is insignificant in external appearance. There is no evidence whatsoever of hemorrhage having existed extra- or intra-durally, and that, so far as I have been able to observe in a number of cords I have had the opportunity of examining, is usually the case. Hemorrhage, as a possible excuse for interference, seems to play a comparatively small part. You see at the upper portion a faintly bluish area which is the only evidence of disturbance on this posterior aspect of the cord. Unquestionably, however, the symptoms pointed to the fact that there was a transverse lesion; and from this, associated probably with the shock of the operation, the patient died. It is below the emergence of the phrenic nerve, so that there was no absolute reason for immediate death. The cord has been hardened in formalin and the consistency of the normal and crushed portion is much the same. Palpation at the time of operation could, however, have conveyed little information of the true state of affairs. On section there shows at the point of lesion very much what is, I believe, usually the case, that is, a hemorrhage or softening in the cord itself. The lesions here are very interesting. At the point of the greatest destruction is a complete disintegration of the cord. Above that, at a distance of one and a half inches, is simply a small hemorrhage of the type van Gieson has described, a tubular hemorrhage lying in the posterior column. Below that point, at an equal distance, there is no visible lesion macroscopically.

A similar condition I have noticed in another case. It was operated upon by Dr. Harrington, and showed at the operation absolutely no extra-dural hemorrhage and no hemorrhage within the dura. The post-mortem examination showed almost complete disintegration of the gray matter of the cord with a great deal of hemorrhage in its substance. It appears that in these lesions, whether the result of fracture or dislocation, whether or not the bone springs back into place, the chief damage done is in the cord itself, and naturally that makes the outlook for operative interference very much less hopeful than if the hemorrhage were outside the cord.

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[1] See No. 2, p. 29, of the present volume of the Journal (January 13, 1898).

Dr. Knapp: I remember, a number of years ago when Dr. Burrell was studying a large number of specimens of fractured vertebræ from the Warren Museum, he pointed out to me how in some cases the spinal canal was not at all affected, while in others the fracture must inevitably have caused a complete crush of the cord, and in few cases was there probability of simple pressure. Many of these cases I think show the mechanism which Dr. Courtney has spoken of — the sudden movement of the vertebræ when they break destroys the cord, and then the fragments spring back into place, leaving apparently a patent canal. My own experience with laminectomy would lead me to agree with Dr. Bullard, that the chances for benefit in case of probable fracture are extremely slight. I have as yet failed to see any case where laminectomy did any good either in the cases where there was total paraplegia or where the symptoms were such as to show that there was only partial impairment of the cord's functions.

The question of the loss of knee-jerk is one of distinct importance, but it seems to me as yet it is by no means a settled question. Kocher, in his recent work on injuries of the spinal column, accepts Bastian's theory, that in cases of distinct transverse lesion of the cord we get loss of knee-jerk; and from the cases as they have been analyzed I think we may accept that statement fully. I think there is no case which will bear close criticism where there has been a complete transverse lesion of the cord in which the knee-jerk has been retained; but it is still a question, I think, whether we can argue the case the other way round, whether finding a case presenting paraplegia and anesthesia without a knee-jerk we can say that there must be a transverse lesion of the cord.

I remember a case not long since which I will give for what it is worth, which I was asked to see by one of the surgeons at the City Hospital. I have forgotten the precise location of the lesion, but it was either in the lower cervical or upper dorsal region. There were the ordinary symptoms of paraplegia and anesthesia pointing to a definite level in the cord with complete loss of knee-jerk. I was asked with reference to a laminectomy. I advised against it. From the loss of knee-jerk I thought the chances were that there was a complete transverse lesion of the cord. With a certain amount of the *furor secandi* of the surgeons they urged the question of laminectomy very strongly, and wanted to know what harm it would do. They seemed to think it was a trivial matter to operate. I said I did not think it would do any material harm, but I was equally positive it would do no good. They said, "Might not there be one chance in several thousand it would do good?" I said, "If you want to take that chance, well and good." They did, and the patient died a few days later. They found no pressure upon the cord, no dural hemorrhage. The cord in that region, so far as it could be determined by the macroscopical appearances and by gentle palpation, seemed perfectly normal. Unfortunately no autopsy was made. There was certainly nothing in the appearance of the cord at the site where the lesion occurred that indicated anything in the least out of the way.

Dr. Bullard speaks of a case which to his knowledge lived some two months where there was complete loss of knee-jerk after probable transverse lesion. Some years ago I saw a very interesting case where there was a transverse lesion concerning which there can be no doubt. A little darkey of eight or ten was playing in the street and was struck by an electric car in the back; he was carried to the Massachusets Hospital, where fracture was found. They did laminectomy, removed the various fragments of bone, and saw somewhere in the upper dorsal region, about the third or fourth dorsal, the cord absolutely cut in two, and they put it back again as well as they could; but there was no question about the transverse lesion because the two ends of the cord were clearly exposed to view. I saw the boy a considerable number of months afterward. The case came up for trial, and I was asked by the lawyer to see him, and that must have been in all probability a year after the accident. The boy was at the Home for Incurables, in Dorchester, lying on his belly. The skin of his legs was smooth and shiny. He had had bed-sores all over him, but owing to skilful nursing they had healed up. Of course, it goes without saying that there was an absolute paralysis, absolute anesthesia, absolute loss of power over bladder and rectum. The arms, I think, were entirely free. They had him on a sort of frame, so that they could turn him over sometimes on his back, sometimes on his belly. He used his arms in playing, would stick his head up like a turtle, was bright as a dollar. The case was tried and settled; and something over a year later Dr. Osgood told me the boy was still at the Home, bright and happy; so that a complete transverse lesion of the cord in the upper dorsal region is not necessarily fatal.

Kocher, in his recent work, speaking of the complete transverse lesions in the cervical region points out clearly that anything above the fourth cervical must necessarily be speedily fatal, owing to the fact that both phrenic nerves must be paralyzed; below that a complete lesion will usually prove fatal in about five days.

Dr. Courtney's case brings up another point of distinct interest with reference to the distribution of the anesthesia. It is a somewhat singular thing that the anesthesias in these cases of injury to the cervical or lumbar region have, so far as I have had the opportunity of studying them, always followed the so-called spinal types which were described originally by Thorburn and from the physiological side by Sherrington and others, and have since been worked out by Starr, Head and others; and this case of Dr. Courtney's from his description is probably of the same type. That distribution seems to be found whether we are dealing with a complete transverse lesion, as in Dr. Courtney's case, or in the cases where there is injury of the more external portions of the cord or of the spinal roots.

I will pass around these two rough diagrams of distribution of the anesthesia in two cases of injury, one a case of unilateral dislocation and the other a case of fracture of one of the cervical vertebræ with slight dislocation and not any serious impairment of the cord. Curiously enough, on the other hand, in the cases of disease of the cord arising from other causes — such as syringo-myelia, tabes and some of the forms of myelitis — that distribution of the anesthesia is by no means so frequent; and the explanation of it is certainly of interest, although no satisfactory explanation has yet been brought forward. Chipault some time ago advanced the theory that where we had this so-called spinal distribution, as shown by the diagrams of Thorburn and others, we had to do with an injury of the spinal roots, and where we had a distribution more segmental we had to do with a lesion of the central gray matter of the cord. That seems to be distinctly untenable, but yet no theory has been advanced to explain these curious variations in the distribution of the anesthesia in spinal disease.

Dr. Walton: My experience coincides fully with that of Dr. Bullard and Dr. Knapp with regard to the inefficacy of operation in these cases. I have not yet seen a case, either under operation or at the autopsy table, in which the bones continued to press on the cord; and even if the bones were found so pressing, I should hardly expect relief from operation after the cord had been once crushed. The case of this unfortunate young woman is a very fair example. I was called to the hospital the evening on which the accident occurred to give an opinion with regard to operation. She was perfectly bright, and able to tell the story of the fall. She dove head first from a height and turned a somersault into the net, but landed so as to bend her neck instead of landing on the back. She had the symptoms which have been so well described to-night — loss of knee-jerk, if I remember aright, complete loss of motion in the legs, and partial in the arms, with complete numbness up to a certain point on the trunk. There was obviously complete crush of the cord. There seemed to me no hope from operation. The pressure from the bones had probably been relieved, or if it had not, the damage was done and the cord disintegrated. I advised against operation, though stating it was a hopeless case, and operation was justifiable if the surgeon desired it. When I am asked, "Is there not one chance in ten thousand?" I generally answer "Yes"; but there is also one chance in ten thousand that the case will get well spontaneously, and the operation do harm rather than good. I have never yet seen a case, however, in which operation did any harm, and in this case the operation probably had no effect whatever on the cord. The crushing was done at the time the neck was bent.

With regard to Dr. Putnam's question as to secondary degeneration, the operation was done the next morning, if I remember rightly, and she died within, I think, three days, too soon I suppose for any secondary degeneration to be evident. The operation was decided on by the surgeon, on the basis that it probably would not do any harm, might possibly do good, and that the case was hopeless without it.

I have seen one or two rather curious coincidences in connection with these cases. One was that of two young men in an open carriage, the seat of which was loose. The horse starting up suddenly, the seat went off backwards, both young men fell, the neck of each was broken, and both died. Another curious experience was that of a man brought into the Massachusetts General Hospital, with the neck in the characteristic position of unilateral dislocation, one ear lowered and the head rotated. The whole neck was stiff, so that it was considered there might be a dislocation rather than a fracture; but the post-mortem showed that the cause of the rigidity was an old anchylosis of all the vertebræ in the cervical region, the spinal column being broken across just as if it were a pipe-stem without any reference to anatomical landmarks, broken into two pieces sharply and the cord crushed, jammed and stretched. This reminds me of the importance of going into the previous history in such cases. It is sometimes difficult to get an accurate history. Perhaps in this case the rigidity had come on so gradually that his friends would not have specially noticed it. In case of cervical Pott's disease in children, the head is sometimes in the characteristic position of unilateral dislocation; I suppose because in the dorsal region the configuration of the chest decides the antero-lateral curvature, whereas in the neck the direction of least resistance is as likely to be lateral. I remember two such cases with history of recent trauma in each; all inquiry failed to elicit any history of deviation of the neck prior to the accident, and dislocation was seriously considered; but the character of each case and the constitutional condition of the patient caused suspicion of Pott's disease, and more careful inquiry elicited the fact that they did have some irregularity before. Neither of these cases were complicated by lawsuit.

Another point of interest to me is the fact that in this case of Dr. Courtney's there was practically no deviation or irregularity to be felt in the spinous processes. I understood Dr. Courtney thought possibly there was slight lateral motion, but that another observer failed to find it. I remember a case in which the line of anesthesia did not extend as far as in this case, and it was supposed that the fracture was in the upper dorsal region. The most careful examination failed to disclose any irregularity whatever in the spinous processes in the neck or elsewhere, excepting, curiously enough, that the normal irregularity between the third and fourth dorsal spines was considered pathological. I refer to the fact that the fourth dorsal spinous process dives down more vertically than the preceding ones (which are comparatively horizontal); the space between the third and fourth spinous processes is then normally perhaps one and a fourth inches as opposed to one inch or less between the second and third. Fortunately the case was not operated on, or else possibly the mistake would have been made of operating at that point. The post-mortem examination showed that the break was in the lower cervical region and that the bones were fractured, but held in position, apparently by the ligamentum nuchæ.

With regard to the possibility of spontaneous recovery, I have here the picture of a man who fell ninety-one feet from the top of a mast, catching the leg in the rigging on the way down and dislocating the hip. He then struck the deck and injured the back. He was nine days without medical attendance. There was incontinence of urine, but the rest of the history is unsatisfactory, though he states there was no trouble with the bowels, and no loss of sexual power. In two and a half months he got about on crutches. The accident happened twenty-three years ago. There is now a large prominence to the left of the median line in the lumbar region, about which opinions differ as to whether callus takes part in its formation, or whether it is the remains of other hyperplastic processes not involving the bony structure. The outlines of this prominence, together with the history, tend to throw out simple lateral curvature, although there was a lateral compensatory curve in the upper dorsal region, causing the left shoulder to droop. The fall was certainly sufficient to have broken the back, but the convalescence was rather rapid for fracture. The fracture, if there were one, probably involved only the cauda equina, which would naturally escape the serious results following crush of the spinal cord. The man when I saw him was quite active, and even jumped on a street-car in motion.

Dr. Putnam: I am very much interested in this excellent paper and the discussion that it has given rise to. I will speak of one point. As regards the question of the degeneration of the posterior columns, I would like to ask whether there was upward degeneration of the anterior tract, motor tract?

Dr. Thomas: Yes; there was a little degeneration above the lesion in both posterior and lateral tracts, but not as marked as below the lesion in either tract. It was greater in the posterior tracts below the lesion than above. In the lateral tracts it was also greater below the lesion than above, as one would expect.

Dr. Putnam: I should like to suggest, as a partial explanation, that the vitality of the posterior tracts seems to be very much less than that of the antero-lateral tracts, or, at any rate, for some reason they are more prone to become diseased. In the great majority of cases of toxic disease of the spinal cord, like those that occur in malnutrition and pernicious anemia, and from ergot poisoning, it is the posterior tracts that suffer the most. It seems to me that this principle of greater vulnerability is one which is not applied quite as often as it deserves in neural pathology.

Dr. Knapp: One word about the knee-jerks. Some years ago I reported a number of cases where there was temporarily a loss of knee-jerk in cases of distinctly cerebral type, where it seemed to me probable that the cerebral irritation had produced the loss of knee-jerk.

Dr. Putnam: I think we should almost all of us be inclined to bear out that opinion.

Dr. Bullard: I have a case in which it (loss of knee-jerk in severe injury) did not occur. A patient with fracture of the spine was admitted to the hospital, June 13, 1894. I saw the patient immediately. The knee-jerk was present on the right, and probably on the left, though not marked. She died in three days. There was no autopsy. It was a very severe lesion, and I think there is no doubt it was fracture of the spine, but no absence of knee-jerk.

Dr. Walton: Dr. Bullard's experience would not contradict the fact that the knee-jerk is generally wanting in such cases. My experience would lead me to look for its absence in at least the majority of cases.

Dr. Meyer: How long after death was the autopsy made?

Dr. Courtney: Four days.

Dr. Meyer: That, of course, will complicate the question of findings with the Marchi stain considerably, and it also may explain to some extent why the lower parts of the cord were more affected than the upper ones. Those which are next to the intestinal canal are probably more affected than the ones farther away from the principal foci of putrefaction. This is all the more probable since the Marchi specimen shows the black dots without any typically systemic distribution all through the white matter. I should like to say with regard to the degeneration of the posterior columns that that question is not at all solved, what the relation is between the posterior tract of Flechsig and the so-called comma tract. I may mention a case which Dr. Wright of the Massachusetts General Hospital gave me for examination. I am sorry he is not here to report it himself. The conditions were these, if I remember correctly. I am not sure whether it was a case of simple compression or of fracture; the patient lived four months, and there was absolute compression of the cord in the lower cervical region, most probably between the eighth cervical root and the first dorsal, and there was not a solitary fibre left within the compressed area. The comma tract was degenerated; the tract of Flechsig was not degenerated. It seems from the digest of the question that Bruce made, that the tracts have to be regarded as of intra-spinal origin rather than the continuation of dorsal roots. It is rather interesting, especially with regard to the case of Hoch, that this case of Dr. Wright's did not show any degeneration of the Flechsig area.

I should further like to say something about the absence of knee-jerk. Some weeks ago I had the opportunity, through the kindness of Dr. Baker of Worcester, to make an autopsy on a case of cerebellar tumor I had seen in consultation before death. The patient had, among the typical symptoms, absence of knee-jerk; and we made the diagnosis of tumor of the cerebellum, which proved to be correct. For the sake of study of the secondary degeneration I advised removal of the spinal cord, and found infiltration of all the spinal ganglia in the lumbar region, and infiltration of the whole lumbar cord and cauda equina; so that the absence of knee-jerk could have a double cause. Of course, the primary idea was that it was an absence of knee-jerk due to cerebellar tumor; and if it had not been for the hunting for secondary degenerations, we would not have found the lesion of the reflex segment. That possibility would corroborate Oppenheim's advice to examine the whole of the nervous system. Further, I should like to say that in future autopsies it would be exceedingly desirable that not only the cord should be examined, but also the Deiter's nucleus and the cerebellum, since with the Nissl method we can show changes in the cells the fibres of which have been destroyed within four, five or six days after injury and the question of the relation of the Deiter's nucleus could at last be attacked. Also it is perfectly astonishing that with the frequency of such lesions, we have, to my knowledge, only two or three cases in which Gower's tract has been followed to its termination.

With regard to the fatal character of these lesions, it is very interesting that animals stand removal of the spinal cord, with proper care, to such an extent. Golz and Ewald have removed the cords of dogs, almost the entire cord, and kept the animals alive; and it seems to me with the smallness of the lesion we are not dealing so much with the consequence of disturbance of tracts as shock, that it is to say, a general disturbance. This is of importance for the question of operation.

Dr. Kingman: In the Rhode Island Hospital we have had four cases. One of them died, two were not relieved, and one improved. The one improved can now walk, and comes to the doctor's office. We favor the operation.

Dr. Baldwin: I have been very much interested in the subject of this paper. I have seen in the past two years five cases of fracture of the spine in the cervical region at the level of the sixth and seventh roots. One of the cases was a conductor pushed off his car. He lived for eleven days. There was an autopsy, and no pressure was found on the cord. The cord at the level of the sixth cervical root was disintegrated. The other cases died within forty-eight hours. One case, Dr. Walton will remember, was a case where it was a question of operation, and the advice was against operation. The patient died within twenty-four or forty-eight hours. I have seen two cases, one a stab in the neck in the cervical region, and the other a hemorrhage of the cord on one side at the level of the eleventh cervical root, the result of a fall. There was complete absence of motion on one side and of sensation on the other, and the knee-jerk was absent completely on one side but came back within a few weeks. These two cases left the hospital practically well.

Dr. Thomas: At the City Hospital since the refrigerating apparatus has been used we have done autopsies four days and more after death and found no degeneration of the nerves. I don't think these were putrefactive changes, for although they were diffuse, they were more marked in some parts than others.

Dr. Knapp: I don't know whether Dr. Prince thought that I meant from what I said that laminectomy was not a serious operation. I certainly regard it as such in spite of some of our surgical brethren. I recall one case of laminectomy in a man sound and healthy, which was done for the purpose of section of the posterior roots — Abbey's operation for obstinate amputation neuralgia — and the man died on the table.

In this case of Dr. Courtney's, the changes in the anterior cells have suggested to me an explanation of certain cases which I suppose we have all seen, cases where the probable diagnosis is transverse myelitis with more or less complete paraplegia, and anesthesia up to a certain level of the cord with the customary bladder symptoms. In a certain number of these cases I have found on electrical examination that there was little or no faradic reaction of the paralyzed muscles. I never fully understood why this was, on the theory that we had to do with ordinary transverse myelitis, but the changes which Dr. Thomas has found in the anterior horns all the way down the cord would perhaps suggest that in some cases changes may occur in the anterior horns as result of the transverse myelitis and thus lead to loss of faradic reaction.

Dr. Walton: I hope I was not understood as intimating that laminectomy was a trivial operation. I think I did say I had never seen it do any harm. I should not want to go on record, however, as regarding it lightly. At the same time, I think it is far less serious than operations on the brain. The operation of laminectomy, even when followed by penetration of the dura mater, certainly does not compare in danger with the corresponding operation on the brain.

Dr. Courtney: In conclusion, I should like to speak of two points: First, in connection with the surgery of these cases it is important to remember that we are dealing with diaphragmatic breathing, and that, consequently, the patient is seriously threatened by the ether before the knife touches him. Secondly, the results of experimental cutting of the cord in animals are in nowise analogous to those from the crush caused by fracture. Where the cord has been carefully divided with the knife it has been found that the reflexes were only temporarily abolished, a fact which seems to explain their return in Dr. Baldwin's case. The conclusion is that it requires a violent crushing to do the mischief.

Dr. Webber: I have seen it stated lately that degenerated nerve fibres give rise to a toxin, colin, which is closely allied to muscarin in its action. May not this or other toxin have something to do with the reflexes not returning? A cut has much less degenerated nerve fibre; with the crush there would be a great deal of degenerated nerve fibre, producing more toxin and thus giving rise possibly to many of the symptoms.

Dr. Putnam: It appears to me, also, that the toxic substances formed through the disintegration of the diseased nerve tissues may possibly cause some of the general symptoms and some of these secondary changes taking place in other parts of the cord.

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Recent Literature.

Essentials of Bacteriology. By M. V. Ball, M.D. Third edition, revised. Philadelphia: W. B. Saunders. 1897.

This little book is one of the series of "Question compends" published by Saunders. It is evidently written with the aim of supplying medical students with the material for passing written examinations in elementary bacteriology. That it must be reasonably successful in this is shown by the appearance of a third edition. It is not a satisfactory presentation of the subject, however, and it cannot be recommended to those who wish to acquire some knowledge of bacteriology.

Manual of Pathology. Including Bacteriology, the Technic of Post-Mortems, and methods of Pathologic Research. By W. M. Late Coplin, M.D., Professor of Pathology and Bacteriology, Jefferson Medical College, etc. Two hundred and sixty-eight illustrations. Philadelphia: P. Blakiston & Co. 1897.

This work is an amplification of the author's lectures on pathology in the Jefferson Medical College, for the students of which it seems to be primarily designed. That it is a students' book is apparent by the lists of questions at the end of each chapter.

The volume is divided into three parts:

Part I is entitled "Technic" (!), and includes directions for post-mortem, histological, urine, and sputum examinations. The great defect of this part is the utter inadequacy of the space devoted to the subject of histological methods. This defect is the more prominent when it is considered that the book, according to its preface, is submitted to the public as a manual for the laboratory.

The chapter on the methods of blood-examination is good, but the remaining chapters of the part are mediocre.

Parts II and III deal with General and Special Pathology. While both of these parts are fairly well provided with good illustrations, they suffer much from condensation. This is especially apparent in the chapter devoted to bacteriology, in which the attempt is made to include the subjects of technical and descriptive bacteriology in ninety odd pages of rather large type.

We do not think that this book can take the place of other and better books devoted to the same subjects, even among beginners. Its range of subjects is too wide and its size is relatively too small for it to be of much utility to students and others outside of the author's institution. The printing and the paper are excellent, but the style of binding is not attractive.

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THE TREATMENT OF OBESITY.

A paper "On the Treatment of Obesity," in which he embodies his experience in the management of this common affliction, was contributed recently (October 30, 1897), to the *Bulletin Général de Thérapeutique*, by Prof. Albert Robin.

In answer to the question, "Who are obese?" he lays down an abstract rule applicable to adult males — women with their thinner, lighter skeletons should weigh somewhat less. Every person has a normal weight in kilogrammes represented by the number of centimetres which exceed the metre in his height. Thus a man of one metre and 70 centimetres (five feet six and a half inches) in height, ought to weigh 70 killogrammes or 140 pounds. A woman of the same height should weigh 125 or 130 pounds. There is excess whenever the weight much exceeds this approximative norm.

With regard to the pathogeny of obesity, there seems to be general agreement (1) that it is hereditary and diathetic; (2) that as a malady it essentially consists in a retardation of nutrition, that is, of the oxidation-processes of the economy whereby ternary or quaternary compounds are rendered fit for elimination. But Le Gendre has shown that there is such a thing as obesity due to excess of assimilation as well as to want of disassimilation; and the importance of this subdivision is emphasized by Robin, who points out that patients coming under this head require special treatment. For instance, the dry-diet treatment can only do good in cases where there is exaggerated nutrition. This method, advised by Œrtel and Schweninger, consists in withholding drinks as far as possible, allowing the patient no liquid with meals, and but a sparing amount two or three hours after eating. In patients obese by fault of dissimilation drinks should be permitted rather than withheld, as promoting the oxidation of the economy.

In the treatment of obesity, the dietetic regimen plays the principal part, the medical treatment being only accessory. The regimen which Robin advocates is based on Voit's experiment, in which it was found that dogs fed exclusively on lean meat became lean, with augmentation of urea and extractives in the urine; fed on a mixed diet of starches, fats and flesh, they rapidly increased in weight and the amount of urea in the urine diminished.

Robin's diet tables prescribe five meals during the day. For breakfast, a raw egg at 8 o'clock, 20 grammes (two-thirds of an ounce) of lean meat or lean fish, the whole eaten *cold* and *dry* — this condition is emphasized, that the patient ***must eat his meat cold;*** cold meat may be consumed in greater quantity than hot meat without causing increase of weight; ten grammes (one-third of an ounce) of bread; one cup of hot tea without sugar. At 10 o'clock, two raw eggs, five grammes (one-sixth of an ounce) of bread, 150 centimetres (five ounces) of wine and water, or tea without sugar are allowed. At noon, cold lean meat *ad libitum*, but no bread; a little water-cress or salad salted and flavored with lemon juice; of raw fruits, 100 to 150 grammes (three to five ounces) for dessert, and for drink, may be taken, with this meal, one or two tumblerfuls of water, or water simply reddened with a little wine. One quarter of an hour after dinner a cup of weak tea not sweetened and at 4 p. m., a cup of weak tea not sweetened, and nothing else are allowed. At 7 p. m., the same repast may be taken as in the morning at 8 o'clock, and a little more lean fish or meat may be added, which the patient may eat warm; the whole quantity must not exceed 100 grammes (three and one-third ounces).

As will be seen, this regimen leaves the patient two good meals a day in which he may eat pretty freely; only azotized substances, however, and green vegetables being allowed. Bread is as far as possible suppressed, but a moderate amount of gluten bread may be permitted.

As for the general hygiene, exercise in the open air is insisted on; this may consist of a walk of half or three-quarters of an hour after each meal, that is, five times a day. It is difficult to get patients to comply with this requirement, for the corpulent have a horror of much walking. The time spent in this exercise, should be gradually increased from half an hour to three-quarters of an hour of brisk walking after each meal, and all the influence of the physician should be exerted to enforce this regulation. If the patient be a female, a carriage ride, with a walk in the country may be the utmost that can be exacted. In case the patient lives in the country and has a garden, a little exercise in the garden after meals with a hoe or other implement, or, at least, a promenade, must be enjoined.

Hydrotherapy followed by frictions, in a word, everything which stimulates the functions of the skin — vapor-baths, massage, etc. — may be enjoined.

Sleep should be regulated as well as diet. Sleep during the daytime should be absolutely interdicted. The patient should go to bed at 11 o'clock p. m. and rise at 6 a. m. during the summer, and at 7 a. m. during the winter — not more than seven hours of sleep for the adult and eight hours for the child.

Robin thinks it possible to obtain sufficiently good effects from regimen without having recourse to any kind of medicine. He would not recommend thyroidin; though this remedy has sometimes given good and rapid results, the indications for it are still uncertain and apply only to certain cases. Moreover, it is far from being always a safe therapeutical agent, as grave accidents have happened from its use. Iodide of potassium has doubtless been given with benefit, but the doses required to cause rapid emaciation are large, and the effects on the tissues and especially on the glands are frequently disastrous. *Emaciation*, Robin justly says, is a bad designation of the end to attain; the subject ought not to *emaciate*, he ought to cease to grow fat, and he should aim to transform his obesity into simple *embonpoint;* iodide of potassium, like other so-called "alteratives," produces a rapid emaciation with all its inconveniences.

The natural mineral waters have a great reputation in the treatment of obesity, but their effects last only with the season, as they are at best only a simple adjuvant of the hygienic regimen. The best of these are the waters of Marienbad in Austria, of Sautenay and of Brides in France. The sodic-chloride waters give excellent results in obesity from nutritive failure, being excitant of the nutritive processes.

Robin presents several tables, from cases in practice, illustrative of the good effects of this regimen, and closes with the somewhat disheartening remark that, "In most obese persons the diminution of weight is always slow and never attains the normal; there is a natural tendency to corpulence and all that regimen can do is to bring about and maintain a tolerable situation."

We do not see that much is added hereby to previous literature and previous experience on this subject. In the treatment of this condition it is eminently true that what is one man's medicine is another man's poison. We ring the changes on albuminoids, carbohydrates, fats, fluids, exercise, and as a result get Banting, Ebstein, Œrtel, Œrtel-Schweuinger, Yeo and Robin. The end of the circle brings us round again towards the starting-point. The very differences in the *régimes* show that some patients reach better results under one and others under another. The skill and service of the practitioner lie in the selection or modification of the method for the individual case, and in the enforcement of its application, and the latter is by no means the easier part of his task.

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PEDICULOSIS IN THE PUBLIC SCHOOLS.

The new direction in which the Boston Board of Health has been working, as shown by the communication from Dr. E. M. Greene in the last issue of the Journal, is certainly a practical one and has already well proved its usefulness.

It is probable that but few of the interferences on the part of the Board of Health will be more productive of that personal cleanliness which underlies the most effective sanitary administration than this crusade against this vulgar but not insignificant parasite.

Though pediculosis or phthiriasis is now a filth disease controllable by means so simple as crude petroleum, it has not always borne so mild a character. Medical history tells us that King Antiochus, the Dictator Sylla, and Philip II of Spain, succumbed to the disease; and the older physicians are said to have found in the appearance of the parasite in the course of some of the acute diseases an encouraging critical sign.

Perhaps no better illustration can be found of the useful work of the school inspectors than this effort to secure the heads of the properly kept children from these invasions from the heads or headdresses of their less carefully guarded neighbors. It would have been impossible to accomplish the same useful result, on any large scale, by any of the ordinary agencies of the schools, and the city is to be congratulated upon the possession of a board of health which maintains a successful quarantine on the one hand, and gives a lesson in elementary personal hygiene on the other.

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MEDICAL NOTES.

Malarial Fever is said to be now unusually prevalent in the lower Mississippi Valley on account of the subsidence of the great floods.

"The International Medical Magazine." — Beginning with the new year Dr. Henry W. Cattell retires from the editorial management of this journal, being succeeded by Dr. Walter L. Pyle.

The English Typhoid Epidemics. — The total number of cases of typhoid fever during the recent epidemic at Lynn is reported to have been 449, with a death-rate of just under 10 per cent. The Maidstone epidemic was much larger, there having been 1,889.

Tuberculin T. R. no more (?) — It is announced (*Medical Record*) that the manufacture of Koch's T. R., the new style of tuberculin, has been abandoned. Koch's paper describing his wonderful extract was published on April 1, 1897, less than ten months ago.

Yellow-Fever Serum — Dr. Sanarelli has sent some yellow-fever serum to Surgeon-General Wyman, of the Marine Hospital Service, and to Dr. Doty, health-officer of the port of New York. Concerning this serum, Dr. Sanarelli writes that he cannot offer it as a sovereign remedy for yellow fever, but believes that the serum would prove efficacious whenever administered during the early stages of the disease.

The Senn Medal. — Those members of the American Medical Association intending to compete for the medal offered by Dr. Senn for the best essay on some surgical subject, are requested to forward the typewritten copies of contributions before March 1, 1898. Address, J. McFadden Gaston, M.D., Chairman, Atlanta, Ga.

The Editorship of the "British Medical Journal." — The assistant editor, Mr. Dawson Williams, is mentioned as a candidate for the position left vacant by the death of Mr. Ernest Hart, and Dr. Robert Saundby, of Birmingham, it is said, would not be disinclined to take the post if offered to him. The remuneration is £500 per annum, with liberty to draw payment for articles up to a specified amount, in Mr. Hart's case, it is said, to £1,000.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, January 26, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 33, scarlet fever 18, measles 13, typhoid fever 7.

The Boston City Hospital Club. — The Annual Dinner of the Boston City Hospital Club will be held at Young's Hotel at 7 p. m., on Wednesday, Feburary 2d.

The Health of Boston. — The Boston Board of Health issues a summary of the deaths in Boston during 1897, with the principal causes, as compared with those of 1896, which speaks very well for the health of the city during the past year. The annual death-rate is less, and the total deaths are less for 1897 than 1896, while the population is larger. We print some of the items from this creditable summary:

	1897	1896
Total number of deaths from all causes	11,154	11,634
Population (estimated)	528,912	516,305
Annual death-rate per 1,000 inhabitants	21.08	22.53
Total number from zymotic diseases	1,806	1,985
Percentage of deaths from zymotic diseases to total mortality	16.19	17.06
Total deaths of children under 5 years	3,708	4,055
Percentage of deaths under 5 years to total mortality	33.24	34.85
Total number of deaths from diarrheal diseases, under five years	475	642
Total number of deaths from diarrheal diseases, all ages	522	713
Percentage of deaths from diarrheal diseases to total mortality	4.68	6.13
Cholera infantum	400	575
Cerebro-spinal meningitis	185	21
Diphtheria	411	516
Measles	21	27
Scarlatina	136	121
Typhoid fever	173	162
Yellow fever	1	
Phthisis pulmonalis	1,289	1,328
Pneumonia	1,236	1,387

NEW YORK.

Death of Dr. Van Keuren. — Dr. Cornelius Van Keuren died at his home in New York at the age of sixty years. He was born in that portion of the city formerly known as Greenwich Village, and here he passed the greater part of his life. At the outbreak of the Civil War he joined Duryea's Zouaves, and did not leave the army until the close of the war. Later, he studied medicine, and in 1874 was graduated from the College of Physicians and Surgeons, New York. He early received an appointment on the Board of Police Surgeons, and in October last was retired with a pension.

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Miscellany.

THE POLITICAL RESPONSIBILITY OF THE PHYSICIAN.

In a recent editorial upon the shortcomings of medical men in regard to neglect of the duties of citizenship, which their training in medicine and in particular their knowledge of sanitary service render them especially fitted to perform, the editor of the *Journal of the American Medical Association* makes a timely appeal to the profession:

"We owe," he writes, "a duty to our fellows, and of all men the physician is his brother's keeper, and his responsibility as a citizen and voter is correspondingly heightened. As individuals we feel this responsibility, but as a collective body we are apt to be remiss and forgetful in this regard, and evils that we could prevent are allowed full play. The interest of a physician in good government is something more than that of merely a good citizen; he is himself a guardian of the public in their nearest and dearest relations, and as such he has it as his duty to do all in his power to protect his charge from all evil legislation or vicious maladministration of salutary laws. In the matter of direct sanitation alone, the value of medical knowledge in the forming and execution of the laws and municipal regulations, ought to be sufficiently evident to require no demonstration.

"The fact that the gradual reduction of the rate of mortality in New York City from 25.18 to 20 in the last three years, saved 3,758 lives in 1895, 7,736 in 1896 and 9,920 in 1897, a total of 21,414 lives, is due to better government and closer attention to sanitation. If such a saving of human life can occur in one case, it can in others, and if it is to be brought about elsewhere, or generally, it will have to be through the co-operation of enlightened medical opinion acting on official ignorance and stupidity. So-called practical politicians are too generally ignorant and indifferent in regard to these matters, and the community as a whole can act intelligently only under medical supervision and advice. A sanitary issue is almost, if not altogether, an unknown thing in our politics, and when it occurs, it is handled, as a rule, along party lines and with all the disadvantages that such a course involves. Our legislatures are made up of lawyers and professional politicians without other visible means of support, together with a sprinkling of farmers and others who, though well meaning and generally honest, are apt to be prejudiced and misled on all matters that are without the limited range of their knowledge. If there are any physicians they are few in number, and, as a rule, have not the influence that they should exert, even in matters that fall directly within their professional sphere, and in regard to which they should have a predominant voice. In the French Chamber of Deputies there have generally been a number of physicians, and while the leading parts that some of them have taken may not have always reflected the most credit upon them, in medical questions they have often combined, and we do not hear of their inactivity when unintelligent legislation on medical and sanitary matters is proposed. In the British Parliament legislation in these matters is not left uninfluenced by professional action and information.

"There is no reason why these conditions should not be attained in this country nor why, in our State legislatures especially, there should not be a working representation of the medical profession, who, in all matters involving their special professional knowledge and the public health, should act together for the best interests of the community without regard to party lines. Were this the case, we might expect a beneficial reaction upon the profession itself; there would be less recognition of quackery and more appreciation of genuine scientific medicine on the part of politicians and the public, and with this a more satisfactory status socially as well as politically."

THE DIFFICULTIES OF THE GENERAL PRACTITIONER.

THE *Lancet*, in a recent editorial review of the subjects which have occupied professional thought during the past year, sets forth a few unpleasant facts with regard to the general practice of medicine as a profession, as follows:

> "We have," writes the editor, "during the year, given a larger amount of space than usual to the discussion of the many subjects of vital interest which fall under the head of medical politics. We hope that in the near future practical developments will follow upon the sense now deep-seated in the medical profession that there are crooked matters which could be set straight by resolution, by, perhaps, a little self-sacrifice, and above all, by union. The general practitioner has as a whole class fallen, we regret to think, upon ill times. His work has grown no lighter, his responsibilities are no less exacting, but in many directions his remuneration has decreased. He is suffering in part from the overcrowding of the profession, in part from the competition of unqualified persons and lay associations, in part from the faulty administration of certain great medical charities, and in part from the rampant prevalence of quackery, which enjoys in this era of our civilization an immunity that is as perilous as it is astounding. Quacks there have ever been and quacks there will ever be; but never, we believe, in the history of the world have the mendacious statements of the charlatan enjoyed such credit or his worthless wares been bought so cheerfully and so universally at such exorbitant prices as now at the end of the nineteenth century. . . .
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> "That we shall attempt to point out the paths leading to a better condition of things, as we have attempted in the past, goes without saying, but it is equally certain that nothing will be done unless the profession unites to work out its own salvation. We have placed before our readers many examples of hospital abuse. The modern developments of the out-patient department cheat the sick, cheat the honorary medical officer, cheat the general practitioner, and cheat the charitable public alike. This is the view which all medical men should keep prominently before the large public with whom they are in intimate relation. We have told and are still telling the Battle of the Clubs. The Medical Aid Association is in many places and in many of its workings a name for a scheme by which medical services are undersold to the public, who, thereby, obtain all the disadvantages which attend purchase in a shoddy market, while the advantages are reaped neither by the medical man whose position is exploited nor by the suffering poor in whose cause the association claims to work. This, again, is the view which medical men should enforce upon their numerous neighbors."

Obituary.

WILLIAM HENRY THAYER, M.D.

DR. WILLIAM HENRY THAYER, whose death at Lanesboro, Mass., on December 22, 1897, was noted in the JOURNAL, was born in Milton, Mass., June 18, 1822. He was educated at Chauncey Hall School, of which his father, Gideon Thayer, was the founder and for a long time the head-master. He graduated at Harvard College in 1841, and studied medicine under the preceptorship of Dr. Henry I. Bowditch, and later at the Harvard Medical School, from which he was graduated in 1844.

He practised his profession for five years in Boston and thence moved to Newton. During his practice in Boston, from 1844 to 1849, he was physician to the Boston Dispensary, was connected with the Massachusetts General Hospital and also with the Boylston Medical School. He was Professor of Theory and Practice of Medicine in the Vermont Medical College from 1854–55, and in the Berkshire Medical Institute from 1859–63.

He later moved to Keene, N. H., where he remained till 1862, when he became surgeon in the Union Army, where he remianed till the close of the war, when he was mustered out, having attained the rank of medical director. In 1866 he settled in Brooklyn, N. Y., where he acquired a large practice and had an enviable reputation.

He was a member of numerous medical societies, including the Massachusetts, New Hampshire, Vermont and Connecticut Valley Societies, and the New York State Medical Association, and was at various times orator, librarian and president of the medical society of the County of Kings. He was one of the organizers of the Brooklyn Pathological Society.

Dr. Thayer was married in 1845 to Ellen Handerson, of Boston, and had four children, three of whom survive him, one of them, Abbott Thayer, having gained distinction as an artist.

In 1892 he was obliged to give up the practice of his profession on account of deafness, and removed to Lanesboro, where two of his daughters had their home. There he spent the last years of his life in the enjoyment of an outdoor life and of the company of his children and grandchildren.

Correspondence.

[Special Correspondence.]

A LETTER FROM PRAGUE.

PRAGUE, January 15, 1898.

MR. EDITOR: — On Monday, January 10th, the German University of Prague opened its doors once more after a practically enforced vacation of six weeks. At the beginning of December lawlessness was practically supreme in Prague. For three days the city may be said to have been in the hands of the rioters. The few policemen were utterly unable to cope with the mob. The windows of the Chemical, of the Anatomical, and of the Pathologico-Anatomical Institutes of the German University were all smashed in. The rioters effected an entrance into the Pathologico-Anatomical Laboratories, especially the department of the Professor of Legal Medicine, and did a great deal of wanton damage. The Pathological Museum with its cases and valuable preparations suffered, perhaps, the most.

All this because the buildings bore the hated name "German," and because a deluded people thought that demonstrations of this kind would make clear to the Austrian Imperial Government their determination to stand no tampering with the official rights as to language granted them in the early spring. Not much personal violence was attempted. Two or three of the houses of well-known medical professors at the German University were stoned. On the streets the windows of stores on which were signs in German were the object of attacks; and these sometimes extended to their proprietors. It is a comical sight now on many streets to see the German words of signs roughly painted out, while sometimes the corresponding Bohemian Christian names have been substituted for the German ones.

After three days a declaration of martial law and an importation of Austrian troops restored peace. In the meantime it was thought best to give a vacation at the German University, so as to keep the students out of harm's way; and this has continued until the present week. It looks now as though the trouble was over, for the time being at least, though it is still thought advisable by the university authorities to keep special details of soldiers guarding the various laboratories. On Sundays and holidays, when the presence of large numbers of the laboring classes on the street might prove the occasion for further riotous demonstrations, these guards are strengthened.

It is not the first time there has been serious trouble between the Cjechs (Bohemian Slavs) and the Germans in Prague, but it is the first time matters have gone so far as this. Just before the end of the year a meeting of the German students and professors was called down at Eger, near the Bavarian boundary, to discuss the question of the removal of the German University of Prague, the oldest German university, by the way, in Europe, to some town situated among a distinctly German population. Reichenberg and Aussig held out inducements to come to them. It was pointed out that just five hundred years ago the German students left Prague and founded the University of Leipsic because they were denied equal rights with their Bohemian colleagues.

It is not so easy to move a university in these days as in the fifteenth century, however. Above all, money is needed; and that, under present political conditions in Austria, comes rather slowly and sparsely for educational purposes. Another difficulty is, that to abandon Prague now would look too much like ignobly withdrawing before the hated Slav enemy and giving up the fight for German rights in the city. The sentimental patriotic idea had almost more weight than any other, and so it was resolved that the German University of Prague should remain where it is.

The recent excesses are to be deeply deplored; but such things inevitably occur where a people is deeply stirred by questions of national and racial interest. Several years ago Marion Crawford said of Prague: "It is the focus in which are concentrated the hottest if not the brightest rays from the fire of regeneration kindled within the last half century by the Slavonic race. There is an ardent furnace of life hidden beneath the crust of ashes; there is a wonderful language behind the national silence." For some years now the wonderful language has come out of the national silence. In fifteen years the Cjeckish University of Prague has grown to be one ot the great universities of Europe. Its medical department, founded scarcely thirteen years ago, has over eight hundred students, and a faculty among whom such names as Horba, Cjewski, Hlawa and Janischik are representative of the calibre of the men. Unfortunately the national fire smouldering beneath the ashes of accumulated years occasionally (as in this case) bursts forth destructively. To an American, however, the Slavish movement can scarcely fail to appeal sympathetically. A nation is seeking an outlet for its energies, is striving to find its development, and that in the only way that it can properly come — through its own language and literature. It makes, perhaps, exaggerated claims for what it has already accomplished and for the future that is in store for it; but the medical world saw with surprise during the Moscow Congress the marvellous progress that the Russian Slavs had made in scientific medicine; and the prospects there are for a still more brilliant future. To visitors to the Congress I think the promise that there is a great future in store for the Slavs is clear.

To her medical men almost more than to any other class in the community, the Cjeckish cause owes the best elements that have come to the fore with Cjeckish development. They have been, and the Bohemian University of Prague has been, turning out nearly one thousand of them a year for ten years — the great propagators of patriotic sentiments among the people, the guardians of the fires of national feeling. The present state of affairs is, then, of special interest to the profession all over the world.

There is, besides, an interesting medical question, though it is, perhaps, more distinctly an ethnological one, bound up in the progress of the present Slav movement. It is the question of the development of a people at the expense of another, and the other issue of the exhaustion of the terrain of a nation's evolution after she has reached a certain phase of her development. Everywhere here in Central Europe where the Teutons come in contact with Slavs or Huns they are losing in prestige. German, which was so common on the Russian confines twenty-five years ago, is scarcely heard there now. In Hungary, German has practically disappeared before the Oriental tongue of the young and vigorous nation, whose capital is the most enterprising town in Europe, and whose people delight in nothing so much as comparison with Americans. Here in Bohemia, before the Prussian-Austrian War of 1866, German was spoken everywhere; now Bohemian or Cjeckish, has taken its place except near the Prussian and Bavarian boundaries. There is a wellspring of vigor somehow in these undeveloped people, whose acme of evolution is only in the future somewhere. The interesting question of the effects on each other of two different stages of national evolution in contact is the spectacle the world will see during the next twenty-five years. For Bohemia will, it is said, during this jubilee year of Franz Joseph, become once more a kingdom by his coronation here.

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PEDICULOSIS.

419 Boylston Street, Boston,
January 22, 1898.

Mr. Editor: — In reading Dr. E. M. Greene's correspondence in your issue of January 20th, I notice that he makes no mention of treating the headgear of the children. This seems to me to be an important adjunct to the treatment, and if not carried out recurrences may be expected; it would also be an aid to the prevention of infection among other children.

In cases which come to the hospital I not uncommonly have found nits inside the hats, and occasionally the pediculi themselves. This applies particularly to the "Tam O'Shanter," which is worn by a large proportion of public-school children at the present time.

It is easily conceivable how a cap infected with pediculi may lose one or more of its inhabitants on to a hat hanging adjacent to it. Moreover, I find that it is not an uncommon custom for the children to put on each other's hats.

When we consider that a female louse lays from fifty to sixty eggs, and that these hatch out after six days' incubation, and, moreover, that the female exists in much greater number than the male, it is easy to see how good are the chances for the parasite to spread. I have been in the habit of ordering the headgear thoroughly sponged with a ten-per-cent. solution of carbolic acid, in cases which come to the hospital, and have found this treatment efficacious.

Very truly yours,
George F. Harding, M.D.

METEOROLOGICAL RECORD

For the week ending January 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ...9	30.02	36	40	32	56	58	57	W.	N.W.	10	8	C.	O.	
M..10	30.22	36	46	27	65	53	59	W.	S.W.	3	9	C.	C.	
T ..11	30.20	34	38	30	66	86	76	N.	S.E.	11	6	F.	O.	
W..12	29.81	44	56	36	94	90	92	S.	S.W.	10	17	G.	O.	.02
T ..13	29.74	42	55	30	78	65	72	W.	N.W.	17	12	O.	C.	
F...14	30.26	32	36	27	75	69	72	N.	N.	10	8	N.	O.	.29
S...15	29.92	34	39	30	66	96	81	S.	S.E.	12	3	O.	R.	.02
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JANUARY 15, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Measles.
New York . .	1,868,060	714	240	9.52	20.02	.42	2.52	2.24
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	489	149	13.02	13.44	3.57	5.67	1.05
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	185	52	4.32	18.36	.54	2.16	—
Baltimore . .	550,000	180	65	9.52	15.24	1.02	5.60	.56
Boston . . .	517,732	223	69	6.30	20.25	.15	4.50	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	78	26	8.96	12.80	2.56	5.12	—
Pittsburg . .	285,000	98	31	9.00	14.00	3.00	1.00	5.00
Washington .	277,000	96	22	10.40	22.88	3.12	3.12	1.04
Milwaukee . .	275,000	—	—	—	—	—	—	—
Nashville . .	65,165	29	6	6.90	24.15	3.45	—	—
Worcester . .	105,050	27	10	3.70	22.20	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Lowell . . .	87,193	29	7	3.45	17.25	—	3.45	—
Cambridge . .	86,812	34	14	5.88	25.52	—	5.88	—
Lynn	65,220	18	—	5.55	16.66	—	—	—
Charleston . .	65,165	23	7	4.35	13.05	—	—	—
New Bedford .	62,416	24	10	12.48	8.32	—	8.32	—
Lawrence . .	55,510	14	7	7.14	7.14	—	7.14	—
Springfield . .	54,790	21	7	—	14.28	—	—	—
Holyoke . . .	42,364	11	6	27.27	9.09	—	—	9.09
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	7	1	—	28.56	—	—	—
Brockton . .	35,853	11	2	—	—	—	—	—
Malden . . .	32,894	4	2	—	25.00	—	—	—
Chelsea . . .	32,716	8	0	12.50	12.50	—	12.50	—
Haverhill . .	31,406	12	1	—	8.33	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	7	3	—	14.28	—	—	—
Fitchburg . .	28,392	7	3	—	—	—	—	—
Taunton . . .	27,812	10	3	—	20.00	—	—	—
Quincy . . .	22,562	4	1	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	0	—	20.00	—	—	—
Everett . . .	21,575	8	1	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	6	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,374; under five years of age 766; principal infections diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 218, acute lung diseases 430, consumption 261, diphtheria and croup 86, typhoid fever 35, measles 28, diarrheal diseases 27, scarlet fever 22, cerebro spinal meningitis 9, erysipelas 6, whooping-cough 6.

From diarrheal diseases New York 12, Philadelphia 7, Baltimore 3, St. Louis, Washington, Nashville, Charleston and Worcester 1 each. From scarlet fever New York 17, Philadelphia and Pittsburg 5 each, Baltimore and Holyoke 1 each. From cerebro-spinal meningitis St. Louis 2, Philadelphia, Boston, Washington, New Bedford and Clinton 1 each. From erysipelas Philadelphia 3, Boston, Cleveland and Providence 1 each. From whooping-cough New York 2, Boston, Washington and Lynn 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending January 8th, the death-rate was 21.4. Deaths reported 4,612; acute diseases of the respiratory organs (London) 533, measles 220, whooping-cough 128, diphtheria 74, scarlet fever 44, fever 43, diarrhea 37.

The death-rates ranged from 12.6 in Cardiff to 27.5 in Norwich; Birkenhead 17.5, Birmingham 23.7, Brighton 16.6, Croydon 18.4, Gateshead 23.6, Huddersfield 23.9, Hull 17.5, Leeds 20.9, Liverpool 22.4, London 23.0, Newcastle-on-Tyne 18.0, Sheffield 18.9, Sunderland 18.8, West Ham 17.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 15, 1898, TO JANUARY 21, 1898.

Leave of absence for two months, with permission to go beyond sea, to take effect April 1, 1898, is granted CAPTAIN CHARLES F. MASON, assistant surgeon, U. S. Military Academy, West Point, N. Y.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JANUARY 22, 1898.

A. G. CABELL, surgeon, ordered home and granted three months' sick leave.

A. W. DUNBAR, passed assistant surgeon, order of January 12th modified; detached from the "Nashville," and ordered to the "San Francisco," by steamer of January 22d.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 20, 1898.

WHITE, J. H., passed assistant surgeon. To rejoin station at New York, N. Y. January 20, 1898.

BROWN, B. W., passed assistant surgeon. To proceed to Birmingham, Ala., for special temporary duty. January 19, 1898.

ROSENAU, M. J., passed assistant surgeon. To proceed to San Francisco, Cal., as inspector of unserviceable property. January 14, 1898.

BOARD CONVENED.

Board convened to meet in Washington, D. C., January 21, 1898, for the physical examination of officer of the Revenue Cutter Service: Surgeon C. E. BANKS, Chairman; Passed Assistant Surgeon G. T. VAUGHAN, and Passed Assistant Surgeon E. K. SPRAGUE, Recorders.

AN ARMY MEDICAL BOARD

Will be in session at Washington City, D. C., during the month of May for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 15, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between twenty-two and twenty-nine years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School, beginning in November, 1898.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, United States Army, Washington, D. C.

GEORGE M. STERNBERG, *Surgeon-General, U. S. Army.*

SOCIETY NOTICE.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Thursday evening, February 3d, at 8.30 o'clock.

Papers: "Hysterectomy for the Removal of Large Uterine Myomata by the Combined Vaginal and Abdominal Method," by Dr. Dudley P. Allen, of Cleveland, O. Drs. John Homans, G. W. Gay, A. T. Cabot, J. W. Elliot, F. S. Watson and J. C. Munro will discuss the paper.

"Deformities of the Head due to Faulty Positions during Infancy," by Dr. J. E. Goldthwait.

The presentation of specimens, apparatus, etc., of surgical interest is invited.

PAUL THORNDIKE, M.D., *Secretary*, 214 Marlborough St.

TALKS ON THE HISTORY OF MEDICINE.

Dr. David Hunt, of Boston, will give informal lectures on "The History of Medicine," by invitation of the Harvard Medical Alumni Association, at the Harvard Medical School on Thursdays, January 13th, 20th, 27th, at 8 P. M. The profession and the students of the Harvard Medical School are cordially invited to attend.

J. S. STONE, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The Histological Basis of the Neuron Theory. By David I. Wolfstein, M.D., Cincinnati, O. Reprint. 1897.

The Surgical Treatment of Suppurative Pericarditis. By John B. Roberts, A.M., M.D., Philadelphia, Pa. Reprint. 1897.

Transactions of the Congress of American Physicians and Surgeons, Fourth Triennial Session, held at Washington, D. C., May 4, 5 and 6, 1897. Published by the Congress. 1897.

The Leadville Campaign. A paper presented to the Association of Military Surgeons of the United States. By Col. Clayton Parkhill, and Major L. H. Kemble, Denver, Col. Reprint. 1897.

Original Articles.

ACUTE DEGENERATIONS OF THE NERVOUS SYSTEM IN DIPHTHERIA.[1]

BY JOHN JENKS THOMAS, A.M., M.D.,
From the Pathological Laboratory of the Boston City Hospital.

(Continued from No. 4, p. 79.)

Case XI (363). Boy, age six and one-half years. This was a septic case, with a total duration of ten days. There was vomiting. Albumin was present in the urine. The heart's action was regular. Pulse weak. He had regurgitation of fluids through the nose.

Autopsy. — June 21, 1897. Clinical diagnosis: diphtheria. There was a grayish membrane on the tonsils and the upper part of the esophagus. Heart: weight, 105 gm. Muscle red and moist. Left ventricle slightly dilated. Mitral valve admits two fingers beyond the first joint. Wall from one-half to one and two-tenths centimetres thick. The other valves and cavities were normal. Brain: weight, 1,340 gm. Soft in consistency, but otherwise normal. Anatomical diagnosis: diphtheritic tonsillitis and esophagitis, chronic fibrinous pleuritis, slight emphysema of lungs, acute congestion of liver, tuberculosis of cervical and mesenteric lymph glands, acute general lymphatic hyperplasia. Cultures: heart, spleen and brain sterile; liver, Klebs-Löffler bacillus (pure); kidney, Klebs-Löffler bacillus, colon bacillus and staphylococcus albus; right middle ear, Klebs-Löffler bacillus, and staphylococcus pyogenes aureus; left middle ear, staphylococcus pyogenes aureus, and a very few Klebs-Löffler bacilli.

Microscopical Examination. — Pneumogastric nerve: sections showed a moderately extensive degeneration. A majority of the nerve fibres had swollen and broken myelin sheaths with a considerable amount of fat present. The axis cylinders had often disappeared and in other cases were irregular and beaded in outline, and broken by fat drops.

Case XII (400). Girl, age two and one-half years. On admission had been ill three days. She had nasal and faucial diphtheria, with some prostration. Pulse 100–120. The pulse failed gradually, the lips became cyanotic, and the extremities cold. There was no note of paralysis. The child died on the eighth day of the disease.

Autopsy. — June 27, 1897. Clinical diagnosis: diphtheria. Heart: weight, 75 gm. In the left ventricle there was a firm thrombus, attached to the interventricular septum. The valves were normal. The tonsils were deeply ulcerated. There was pus in the right ear. Brain: weight, 1,195 gm. It was moderately injected. Anatomical diagnosis: ulceration of tonsils, diphtheritic rhinitis, otitis media. Cultures: heart, streptococcus; liver, spleen and kidney, sterile; right ear, staphylococcus aureus and a few Klebs-Löffler bacilli.

Microscopical Examination. — Medulla: sections at the level of the pyramidal crossing showed a moderate amount of degeneration, with the presence of considerable fat in the pyramidal fibres. The degenerative process had also affected the fibres of the posterior tracts, but to a rather less extent. The nerve cells were normal. Sections from the cortex of the brain showed the presence of an occasional fat drop in a few fibres. Sections of the pneumogastric nerve showed a slight but rather extensive degeneration. A considerable number of fibres showed swollen and granular myelin sheaths, stained grayish in color, and the presence of a small amount of fat. The axis cylinders were many of them swollen and beaded.

Case XIII (325). Boy, age six years. The pulse in this case varied between 70 and 120. There was albumin in the urine. Paralysis of the palate was noted on the forty-first day of the disease. The child died on that day with heart symptoms.

Autopsy. — July 9, 1897. Clinical diagnosis: diphtheria. Heart: weight, 115 gm. Normal. Brain: 1,240 gm. Normal. There was pus in the right ear. Anatomical diagnosis: edema of lungs, otitis media. Cultures: heart, negative; spleen, sterile; kidney, colon bacillus and staphylococcus albus; liver, colon bacillus and staphylococcus citreus; lung, streptococcus and Klebs-Löffler bacillus.

Microscopical Examination. — Pneumogastric nerve: sections showed very slight degenerative process. A few fibres were much swollen, irregular in outline, beaded, and stained grayish. The axis cylinders of these fibres were irregular and beaded. Rarely a few fat drops could be seen in the myelin sheath.

Case XIV (494). Woman, age sixty-four years. This was a septic case, which was delirious. The total duration was about three weeks. The patient died from extension of the membrane. The pulse was weak and rapid, but regular.

Autopsy. — July 16, 1897. Clinical diagnosis: diphtheria. Heart: weight, 210 gm. Muscle dark brown in color. Valves normal. There was membrane on the pharynx, tonsils, epiglottis, onto the tongue, and beginning of esophagus, down to the larynx and whole of the trachea, into the primary bronchi. Anatomical diagnosis: diphtheritic pharyngitis, tonsillitis, uvulitis, laryngitis, glossitis, tracheitis and bronchitis, broncho-pneumonia, emphysema of lungs, edema of lungs, chronic passive congestion of spleen, kidneys and liver. Cultures: heart, negative; lung, Klebs-Löffler bacillus and pneumococcus; liver and spleen, sterile; kidney, few Klebs-Löffler bacilli, and colon bacillus.

Microscopical Examination.— Pneumogastric nerve: sections showed a large majority of the fibres grayish in color, granular, and some intensely swollen. Fat was present in moderate amounts. The axis cylinders in the affected fibres could not usually be made out, but when present were beaded, irregular and broken.

Case XV (105). Boy, age five years. The child was admitted to the hospital in a septic condition, and died within twenty-four hours, after an illness of two weeks. No note of paralysis. Pulse was 79 and weak.

Autopsy. — July 20, 1897. Clinical diagnosis: diphtheria. Heart: weight, 140 gm. Left ventricle dilated. No valvular lesion. Brain: weight, 1,450 gm. Normal. Anatomical diagnosis: diphtheritic pharyngitis, laryngitis, etc., dilatation of heart, chronic passive congestion, ascites, hydrothorax. Cultures: heart, liver and kidneys, colon bacillus; spleen, colon bacillus and Klebs-Löffler bacillus; lung, Klebs-Löffler bacillus and a few streptococci.

Microscopical Examination. — Pneumogastric nerve: sections showed rather a slight degenerative process. A moderate number of fibres were grayish in color, and irregular in outline, with occasional fat drops. The axis cylinders were swollen and beaded in the affected fibres.

Case XVI (59). Boy, age five years. Duration of the disease was fifteen days in all. The child was languid. Four days before death the pulse was irregular and weak (130). He vomited twice. There was a partial collapse the day before the child died. There was no note made of paralysis. The pulse the last day was weak and intermittent.

Autopsy. — July 30, 1897. Clinical diagnosis: diphtheria. Slight increase of pericardial fluid. Heart: weight, 120 gm. All cavities were much dilated, and filled with postmortem clots. No endocardial changes. Auriculo-ventricular valves, especially the mitral, were dilated. Heart muscle yellowish and opaque, probably due to fat. Trachea, larynx, etc., nothing abnormal to be seen. A little pultaceous material covered the tracheal mucous membrane. Right tonsils slightly enlarged, and follicles large and open. Brain: weight, 1,295 gm. Very edematous. Lateral ventricles enlarged, and filled with clear fluid. The roof of thalami showed a peculiar roughness and looseness of tissue, which might be due to strain of edematous tissue. Anatomical diagnosis: dilatation of heart, congestion and edema of lungs, congestion and fatty degeneration of liver, acute splenic hyperplasia, chronic passive congestion and infarction of kidneys, healed tuberculosis of mesenteric lymph glands, defects of skull through irregular union of coronal suture, with adhesion of membranes, and local atrophy of brain. Cultures: heart, negative; liver, colon bacillus and streptococcus; spleen, abundant streptococcus (pure); kidney, streptococcus and colon bacillus; sphenoidal sinus, streptococcus and a variety of non-pathogenic bacteria.

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[1] This paper will appear in the Medical and Surgical Reports of the Boston City Hospital for 1898.

Microscopical Examination. — Pneumogastric nerve: in this case there was marked and extensive degeneration. The sections showed a large proportion of the nerve fibres affected to a greater or less extent. Most of the fibres were swollen and grayish, and in many of these there were present considerable amounts of fat, both in the nerve sheath and in the axis cylinder. The axis cylinders were absent in most of the fibres most affected, and were irregularly swollen in the other fibres. Sections from the floor of the fourth ventricle showed the presence of fat in the nerve sheath, and in some instances replacing the axis cylinder, in a considerable number of the nerve fibres seen. The nerve cells seemed normal. Sections from the cortex of the brain showed a moderate amount of fat along the nerve fibres. The nerve cells were apparently unaffected.

Case XVII (534). Boy, age six years. Had been ill one day, when admitted, with faucial and nasal diphtheria. Was quite septic on admission. Throat cleared up slowly. Pulse 80–130. Forty-eight hours before death pulse became weak and irregular. Vomited on the last day. Noted that he had almost complete paralysis of the soft palate. Patellar and superficial reflexes were all diminished.

Autopsy. — August 14, 1897. Clinical diagnosis: post-diphtheritic cardiac paralysis. Body of boy about six years, one hundred and twelve centimetres long. Pericardial cavity normal. Heart: weight, 90 gm. Muscle pale, with minute whitish specks distinctly seen on endocardium. Cavities and valves normal. Left tonsil showed a deep loss of substance, with thin pale membrane. Right tonsil enlarged and hyperemic. Esophagus and trachea normal. Brain: weight, 1,380 gm., normal. Membranes normal. Anatomical diagnosis: ulceration of left tonsil, acute rhinitis, tonsillitis, pharyngitis, mucoid degeneration of sphenoidal sinuses and left middle ear, fatty degeneration of heart muscle, chronic adhesive pleurisy, general acute lymphatic hyperplasia. Cultures: heart and liver, sterile; spleen, colon bacillus, and pyocyaneus; kidney, colon bacillus; sphenoidal sinus, almost pure growth of a large coccus growing in straight chains; left ear, pyocyaneus, and a bacillus resembling in growth and morphology the colon bacillus, but not stained by Löffler's methyl-blue stain.

Microscopical Examination. — Pneumogastric nerve: sections showed extensive degenerative processes, hardly a single nerve fibre being free from changes. The myelin sheaths were granular and irregular, and all through the specimens there were many fat drops, chiefly small, and in the nerve sheaths. In some fibres the axis cylinders could not be made out, and in most fibres they were irregular and beaded. Sections of the cauda equina showed a moderate number of fibres with granular myelin sheaths, and occasionally fat drops were seen in the sheaths. The axis cylinders were occasionally beaded, but in general appeared normal. Sections of the spinal cord showed an extensive degeneration of the fibres of the anterior nerve roots with granular nerve sheaths and a moderate amount of fat, and a less extensive degeneration of the posterior nerve roots. There was a very extensive and intense degeneration of the posterior root zone of the cord, with a large amount of fat. Throughout the cord there was a moderate amount of degeneration of the fibres of the white substance, slightly more marked in the posterior columns, involving both nerve sheaths and axis cylinders, shown by the presence of larger and smaller fat drops. This was most marked at the periphery of the cord (lack of penetration of the osmic acid). The blood vessels were widely dilated at various places. The central canal was very much dilated, and a few red blood corpuscles were seen within it. The cells of the gray matter and the fibres of this part of the cord appeared normal. Sections of the heart muscle, stained by Marchi's method, showed a most extensive and intense fatty degeneration of the muscle fibres. Many of the fibres contained larger and smaller drops of fat, many of them being completely filled with these drops. The fibres containing fat appeared swollen, as did many of the others. Most of the fibres had lost their striations and appeared homogeneous or granular. Here and there throughout the tissue there were areas of infiltration with round lymphoid cells, which had large deeply staining nuclei and little protoplasm. These areas were found chiefly in the interstitial tissue, and about the blood-vessels, but a number of them were found in the myocardium itself.

The following cases were of diphtheria accompanied by scarlet fever in which histological examinations of the nerves were made:

Case XVIII. Girl, age seven years. Admitted on second day of the disease with diphtheria; was up on the sixth day. On the ninth day the rash of scarlet fever appeared. Membrane appeared on the tonsil. Cultures from the throat were positive. The pulse became rapid. Temperature 103–104°. Urine of acute nephritis.

Autopsy. — February 18, 1897. Clinical diagnosis: diphtheria and scarlet fever. Dull red papular eruption on thighs, upper arms, neck and trunk. Heart: normal size. Pericardium contained a small quantity of clear serous fluid. Valves and cavities normal. Edges of tonsils raw, reddened and swollen, and covered with muco-pus. Trachea and esophagus normal. Anatomical diagnosis: scarlet fever, congestion and edema of lungs, pericardial effusion, acute splenic tumor. Cultures: trachea, variety of bacilli, few streptococci, no Klebs-Löffler bacilli; lungs, many streptococci; liver, few streptococci, and about twenty-five colonies of staphylococcus aureus; spleen, many streptococci (pure); kidney, one colony of staphylococcus aureus and a few colon bacilli.

Microscopical Examination. — Pneumogastric nerve: sections showed an occasional degenerated nerve fibre, with replacement by fat drops, and disappearance or beading of the axis cylinder, and a few granular and brownish discolored fibres, but the sections in the main were normal.

Case XIX. Boy, age three years. Entered the hospital with measles and diphtheria. Had been ill two days. On the eighth day of the disease temperature rose, throat was red, and the tonsils swollen. A culture five days before had been negative. That evening became cyanotic. Respiration was rapid. Extremities cold. Pulse scarcely perceptible, and the child died soon after.

Autopsy. — February 20, 1897. Dull red papular eruption on trunk, neck and face. Tonsils swollen, and mucous membrane about them raw and red. Heart: weight, 80 gm. Valves and cavities normal. The trachea and esophagus were normal. Anatomical diagnosis: scarlet fever, bronchitis and broncho-pneumonia, acute hyperplasia of mesenteric lymph glands. Cultures: liver, sterile; spleen, Klebs-Löffler bacillus fairly abundant; kidney, a few colonies of Klebs-Löffler bacillus; left lung, abundant growth of discrete colonies (about 100) of Klebs-Loffler bacillus, and one colony of staphylococcus pyogenes aureus; right lung, Klebs-Löffler bacillus and staphylococcus present, but colonies were not distinct on account of the presence of a liquefying bacillus.

Microscopical Examination. — Pneumogastric nerve: the section showed marked changes. About one-half of all the fibres showed the presence of fat globules in the myelin sheath, which was much broken, irregular and swollen. The axis cylinders were swollen, beaded, broken and occasionally could not be made out. Rarely could a fibre, which appeared normal, be traced any distance without showing signs of degeneration.

Case XX. — Girl, age fourteen months, a sister of the previous case, entered the hospital after an illness of two days, with measles and diphtheria. On the fourth day of her stay in the hospital developed the eruption of scarlet fever. Three days later was only semiconscious, and died the next day, the tenth day of the disease.

Autopsy. — February 21, 1897. Dull brownish papular eruption on arms and face. Right side of face swollen. Tonsils enlarged and reddened. Mucous membrane of pharynx, larynx and trachea injected. No evidence of membrane. Heart: weight, 33 gm. Valves and cavities normal. Pericardium normal. Anatomical diagnosis: acute fibrinous pneumonia and pleurisy of left lung, broncho-pneumonia of right lung, general lymphatic hyperplasia. Cultures: trachea, few Klebs-Löffler bacilli, and streptococcus; left lung, lower lobe, staphylococcus aureus and albus and colon bacillus; left lung, upper lobe, few Klebs-Löffler bacilli, staphylococcus aureus and albus, and colon bacillus; right lung, staphylococcus albus and streptococcus; liver, colon bacillus and bacillus fetidus; spleen and kidney, bacillus fetidus.

Microscopical Examination. — Pneumogastric nerve: sections showed well-marked degenerative changes. Many of the fibres contained fat globules, and the sheaths were swollen and irregular. The axis cylinders of these fibres were absent or beaded.

Case XXI. — Boy, age three years. Admitted with diphtheria. On the second day the eruption of scarlet fever appeared. Pulse was rather rapid, between 90 and 160. There was albumin in the urine. The child was drowsy. On the twentieth day he had a general tonic convulsion. Another one occurred one hour later, in which he died.

Autopsy. — February 27, 1897. Body, 90 centimetres long. Skin desquamating over upper chest, back, and upper arms. Heart: weight, 55 gm., large. Muscle, dull, red, moist. Left ventricle dilated. Mitral orifice dilated, valve incompetent. Valves otherwise normal. Pericardium distended by large accumulation of clear serous fluid. Anatomical diagnosis: acute interstitial nephritis, pericardial effusion, dilatation of left ventricle, edema of lungs, chronic passive congestion of lungs, liver and spleen, acute hyperplasia of abdominal lymph glands. Cultures: trachea, few streptococci; right lung, lower lobe, few Klebs-Löffler bacilli, staphylococcus aureus and albus; liver and spleen sterile; kidneys, four tubes, three sterile, one showed a very few short chains of streptococci and a few Klebs-Löffler bacilli.

Microscopical Examination. — Pneumogastric nerve: the sections showed marked and extensive changes. Scarcely any fibres could be found which did not show the presence of fat globules in some part of the distance through which they could be traced. The myelin sheaths were swollen and broken, as were also the axis cylinders, and practically all the nerve sheaths showed a granular appearance when fat drops were not present.

Case XXII. Boy, age five years. Admitted with septic diphtheria. Had been ill two days. On the ninth day of disease it was noted that he was dull, and vomited. On the twelfth day he had improved somewhat. On the twentieth day he developed the rash of scarlet fever. He had paralysis of both legs, and could not stand nor move the limbs. The knee-jerks were absent and the plantar reflex slight. On the thirty-second day he became drowsy, vomited, and died.

Autopsy. — March 2, 1897. Heart: large, found in diastole. Muscle moist. Slight thickening in right mitral curtain. Left ventricle dilated. Some yellow, opaque areas in middle aortic cusp, over corpora aurantia. Right ventricle showed slight degeneration. Pericardium normal. Larynx normal. Tracheal mucous membrane injected, covered by a tenacious mucus-like exudate, which was easily separated. Esophagus, normal. Anatomical diagnosis: dilatation of left ventricle, slight arterio-sclerosis, congestion and broncho-pneumonia of lungs. Cultures: trachea, negative; right lung, lower lobe, six colonies of staphylococcus pyogenes aureus and a few Klebs-Löffler bacilli, degenerated forms; liver and spleen, sterile; kidney, four colonies of staphylococcus aureus, Klebs-Löffler bacillus, and streptococcus.

Microscopical Examination. — Heart muscle: interventricular septum. Sections showed that many of the muscle fibres had lost their striations and become homogeneous. Some of them showed the presence of vacuoles. Very rarely a fatty, degenerated fibre was found. In the connective tissue, and about the blood-vessels, and to a slight extent in the muscular tissue there were occasional areas of infiltration with small, round, lymphoid cells.

The next cases are of measles and diphtheria, complicated by noma in Case XXIV.

Case XXIII. Boy, age ten months. Child had been ill with measles, and was admitted to the hospital with diphtheria, still having the measles eruption. Four days after entrance he developed pneumonia, became pale and cyanotic, and died on the next day.

Autopsy. — March 2, 1897. Legs, arms, chest, neck, and lower portion of face covered with a discrete raised hyperemic papular eruption. Heart: weight, 50 gm. Valves and cavities normal. Heart muscle rather pale. Tongue, tonsils, larynx, pharynx and trachea showed no changes except a slight hyperemia of the trachea. Anatomical diagnosis: acute broncho-pneumonia of both lungs, with complete consolidation of lower lobe of left lung, chronic tuberculosis of middle lobe of right lung, cloudy swelling of liver, spleen and kidneys, acute lymphatic hyperplasia, papular rash, evidently that of measles, decubitus over sacrum, hyperemia of trachea, acute splenitis. Cultures: trachea, many Klebs-Löffler bacilli, staphylococcus albus; right lung, and left lung, lower lobe, Klebs-Löffler bacillus, staphylococcus albus and streptococcus; liver, streptococcus (large); spleen, Klebs-Löffler bacillus and streptococcus; kidney, few Klebs-Löffler bacilli and colon bacillus.

Microscopical Examination. — Pneumogastric nerve: sections stained by Marchi's method showed both in cross and longitudinal sections extensive degenerative changes, though not exceedingly intense. Almost all the nerve fibres showed the presence of fat, but in rather moderate amount, and confined chiefly to the medullary sheath, which was fragmented and swollen. The axis cylinders were grayish in color in many instances, and swollen and beaded.

Case XXIV. Boy, age two years. Was admitted to the hospital. Diphtheria bacilli were found in the nose. There was no rash of scarlet fever. He developed broncho-pneumonia, and a gangrene of the face and jaw, and died on the thirtieth day of the disease.

Autopsy. — March 7, 1897. Clinical diagnosis: measles and broncho-pneumonia. All the soft tissues of the posterior pharynx, posterior nares and mouth were covered with a dirty, blackish, soft tissue, hardly firm enough to be called a membrane. Larynx and epiglottis showed the same accumulation, but no distinct membrane. Trachea normal, but slightly congested. Brain: weight, 910 gm. normal. Heart: weight, 50 gm. Valves and cavities normal. Anatomical diagnosis: acute, rapidly spreading necrosis of soft tissues of upper and lower jaw and cheek, with necrosis of the inferior and superior maxillary bones at the margin, and with necrosis of turbinate bones and vomer, necrosis of the soft tissues of the nose, palate, pharynx, uvula and tonsils, purulent fluid in the antrum of Highmore, acute suppurative inflammation of the left middle ear and mastoid process, acute purulent bronchitis and purulent broncho-pneumonia of both lungs, acute general lymphatic hyperplasia, acute splenitis, acute parenchymatous degeneration of liver and kidneys. Cultures: necrotic areas of soft tissues of upper jaw and lower lip showed a variety of organisms among which were streptococci, staphylococcus albus, colon bacillus, and a few Klebs-Löffler bacilli. The trachea showed a variety of organisms, few streptococci, staphylococcus aureus, but no Klebs-Löffler bacilli; right lung, lower lobe, few streptococci, and a few Klebs-Löffler bacilli; right lung, middle lobe, many streptococci, few Klebs-Löffler bacilli; left lung, lower lobe, negative; liver, few Klebs-Löffler bacilli and colon bacillus; spleen, very few Klebs-Löffler bacilli; kidney, colon bacillus; right middle ear, few Klebs-Löffler bacilli, and staphylococcus pyogenes aureus; left middle ear, negative. Cover-glass preparations from the pus of the lung showed pus cells, streptococci and a few short bacilli.

Microscopical Examination. — Pneumogastric nerve: in the sections of this nerve there were very marked and extensive degenerative changes. The nerve fibres were much swollen and beaded, most of them showed the presence of a large amount of fat, and others were granular and grayish in color. Very few fibres seemed normal except for a short distance. The axis cylinders were beaded, broken and replaced by fat drops.

The last case is one of sudden death in pneumonia, in which the pneumogastric nerve was examined. This was not a case of diphtheria.

CASE XXV. Boy, age eleven months. Child was admitted to the hospital with pneumonia. He was reported to have had eleven convulsions the day of entrance, which was the first day of the disease. On the ninth day it was noticed only that he seemed restless. Died suddenly.

Autopsy. February 22, 1897. Heart: weight, 65 gm. Valves and cavities normal. Left lung: the lower lobe somewhat firmer than the rest of the lung, of a reddish appearance. Muco-purulent material could be squeezed from the bronchi. Right lung normal. Brain: beneath the pia there was a well marked collection of fluid, the pia being raised from the surface of the brain about eight-tenths of a centimetre. This was more marked on the left side. Brain otherwise was normal. Trachea and esophagus normal. Anatomical diagnosis: last stages of gray hepatization of lower lobe of left lung, edema of brain, acute parenchymatous degeneration of the liver and kidney, acute splenitis, acute general hyperplasia of lymph glands. Cultures: heart blood, lower lobe of left lung, liver, spleen and kidneys, sterile.

Microscopical Examination. — Pneumogastric nerve: sections varied somewhat. In some nerve bundles scarcely a single normal nerve fibre could be seen. In others the degenerated fibres were approximately one-fourth of all the fibres. The degeneration was marked. There was much fat present in the medullary sheaths and in the axis cylinders, and the other fibres were grayish, swollen, granular and beaded.

The specimens from the above cases were treated by Marchi's method. Other sections were stained by hematoxylin and eosin, and in some of the cases with eosin and Unna's alkaline methylene-blue stain.

(*To be continued.*)

HEART COMPLICATIONS IN DIPHTHERIA.[1]

BY CLEON MELVILLE HIBBARD, A.M., M.D.,
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(Concluded from No. 4, p. 76.)

No. 463. Boy, aged three years. Admitted July 3d, with diphtheria of the nose and throat. Had considerable prostration. Throat was clear within four days, and there were no untoward symptoms until the fifth day, when the pulse fell to 50. Later in the day it was so weak it could not be counted. On the following day had a collapse, after which he was very restless. During the next day, heart-rate 54. Cardiac dulness from nipple line to one and five-tenths centimetres to right of sternum. His extremities were cold and clammy. Died on the eighth day of illness.

Post-mortem examination. Heart enlarged; weight 80 grammes. Right side distended with dark clotted blood. Right auricular appendage distended, and filled with roughened, corrugated, yellowish-white, parietal thrombi, which varied in size from a pin's head up to a bean. They were present also in other cavities. Joints rachitic. In addition to the above there was a chronic passive congestion and a chronic pleurisy.

No. 534. Boy, aged six years. Had measles and pertussis. Admitted August 14th. Ill for one day with nasal and faucial diphtheria. He was quite septic and continued so, and in two days had many ecchymoses on skin. Throat cleared up slowly, and he gradually lost weight. Pulse varied between 130 and 80. On the eleventh day in hospital, heart dulness from one centimetre to right of sternum, to two and five-tenths centimetres to left of nipple line. There was a soft systolic murmur at the apex. Sounds weak and irregular. He vomited several times. Patella and superficial reflexes all diminished. There was almost complete paralysis of the palate. On the following day heart dulness had increased one and five-tenths centimetres to right and left; pulmonic second was accentuated. Pulse could just be felt, and he died on the next day, the sixteenth day of the disease.

Post-mortem examination. Heart slightly enlarged; weight 90 grammes. Muscle pale, with minute whitish specks distinctly seen on endocardium. Valves normal. There was also a diphtheritic rhinitis, tonsillitis, pharyngitis, and an acute general lymphatic hyperplasia.

Pneumogastric nerve showed an extensive degenerative process. There was hardly a single normal nerve fibre. There was much fat throughout the specimen.

Heart muscle. There was an intense and extensive degeneration of the fibres, with much swelling. The fibres had lost their striation and were homogeneous or granular. Throughout the interstitial tissue and near the blood-vessels, and in the myocardium itself, were seen areas of infiltration of lymphoid cells.

No. 561. Girl, aged five and one-half years. Had measles and pertussis. Admitted August 14th, after two days' illness, with septic diphtheria of nose and throat. There were numerous ecchymoses on skin. She was delirious throughout. Urine contained a large trace of albumin. Pulse for four days was about 125, afterwards at 70. Heart-sound weak, but regular, until the last two days, when it was irregular. Area was normal until forty-eight hours before death, then the dulness extended from one centimetre to the right of sternum, to two centimetres outside of nipple line. On the last day the area of dulness had increased two centimetres more on the right and one and five-tenths centimetres on the left. No murmur was heard. Vomited considerably during the last two days. Patella and plantar reflexes absent. Died on the ninth day of illness. No post-mortem examination.

No. 570. Boy, seven years old. Admitted August 21st with a moderately severe attack of diphtheria of nose and throat of three days' continuance. The throat was clear within nine days. He was rather listless from the first. Heart was normal for ten days and on the thirteenth day the area of dulness extended from one and five-tenths centimetres to the right of sternum to three centimetres to the left of nipple line. Pulmonic second was accentuated. A *bruit de galop* heard at apex. The next day the area of dulness had extended two centimetres on both sides. A blowing systolic murmur at apex heard, transmitted into axilla. On the sixteenth day the area of dulness had decreased, and by the eighteenth day was from right sternal border to three centimetres outside of nipple line. The *bruit de galop* was not heard on this day. The pulse varied from 80 to 120, at times irregular and intermittent. The second sound at the apex was reduplicated. Later the irregularity and the reduplication disappeared. For a while the child seemed to be holding his own although he had lost considerable flesh. He had some paralysis of the palatal muscles. On the thirty-fifth day of illness, developed a pneumonia, after this he became again worse, vomited everything taken by mouth; pulse very weak. Died on the forty-fourth day. No post-mortem examination.

No. 723. Boy, aged six years. Admitted February 3d, having been sick five days with diphtheria of nose and throat. For the first week did as well as the average case of diphtheria, save that he appeared drowsy all the time. Began to vomit on the twelfth day. Pulse varied from 110 to 130 and fell to 90 on the twelfth day. The following day heart dulness extended from right sternal border to three centimetres left of nipple line. A loud systolic mur-

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[1] This paper will appear in the Medical and Surgical Reports of the Boston City Hospital for 1898.

mur heard at apex. Died in a collapse on the fifteenth day. No note as to paralysis.

Post-mortem examination. Heart much dilated; weight, 95 grammes. It extended from four centimetres to the left of nipple line to one centimetre beyond the right sternal border and upward to second rib. Left side hypertrophied. On the free edge of the aortic valve were a few vegetations. Besides the above there was an acute splenitis and a hyperplasia of the mesenteric glands.

No. 728. Boy, aged four years. Had measles and pertussis. Admitted February 3d, with nasal and pharyngeal diphtheria after an illness of two days. The child was in a drowsy and stupid condition most of the time. He began to vomit on the sixth day, and continued to do so to the end. Pulse varied between 150 and 100, weak in volume and irregular in time. He gradually failed and died on the tenth day of illness. No record as to paralysis. No post-mortem examination.

Sex. — In these 22 cases of death from various kinds of heart failure, 15 were males and seven were females. The fatality among the males in these cases was higher than among the 800 diphtheria cases where there were 73 males and 48 females that died.

Age. — This was as follows:

Up to 2 years	3 cases.
From 3 to 4 years	5 "
" 4 to 6 "	10 "
" 7 to 8 "	2 "
" 9 to 14 "	2 "

The age varied from one and one-half to fourteen years, the average was five and one-fifth years.

Location of Membrane. — In all but three cases it was in both nose and throat; these exceptions were one each, on tonsils, on tonsils and larynx, and on larynx. In all but four cases a more or less septic odor was noticed, and in two cases there were ecchymoses on the skin. So marked were the usual signs of sepsis in some cases that it was difficult to determine whether the cause of death was sepsis or heart failure; but after all this distinction is superficial, for most likely every case of death from heart trouble is due primarily to a toxic poisoning of the diphtheria bacillus.

Albumin. — In the 15 cases, where the urine was examined there were 11 cases which had one-tenth of one per cent. or more of albumin.

Duration. — The time when the first symptoms appeared, pointing to the heart, was 21 cases as follows:

During first week	13 cases.
" second "	5 "
" third "	2 "
" fourth "	1 case.

The first symptom that called attention to the heart was usually a weak and irregular pulse or a very slow one. It would seem from this, that if at the end of the fourth week a diphtheria patient has had no bradycardia, feeble or arrhythmic pulse there is little possibility of death from cardiac trouble.

The number of days that the patient lived after the appearance of the first symptom varied from less than a day to five weeks; however, all but six died within less than a week.

The lapse of time from the onset of the diphtheria to when death occurred in these cases was:

Within one week	1 case.
" two weeks	8 cases.
" three "	7 "
" four "	2 "
" five "	1 case.
" six "	1 "
" seven "	1 "

The average length of life was about three weeks.

A systolic murmur was noted in eight cases, and all of these had considerable dilatation. Still, the reverse was not always true (No. 561).

The triple sound — cantering rhythm — (*bruit de galop*) was observed in three cases (Nos. 59, 331 and 570). It was also heard in three other cases, not included in this series, two of which were fatal and one is yet in hospital and doing well. The heart was considerably dilated in each of these patients, and the *bruit de galop* was noted in four of the cases when the dilatation was first determined. In both instances (Nos. 59 and 331) where the pneumogastric nerve was examined there were degenerative changes which were moderate in one and marked in the other. In these cases this cantering rhythm was then a most fatal sign.

Collapse occurred eight times, and death followed within two days in every case, and in three instances within an hour or so.

Vomiting was present in 12 of the cases. In other words, this symptom was noted in over half of these patients that died of heart trouble. Since both the heart and stomach are innervated by the same nerve, the pneumogastric, it is readily seen how a degeneration of this nerve, causing cardiac disturbances, would in a like manner produce changes in the function of the stomach, such as emesis.

The frequency of palatal paralysis in this connection is of great interest, since the innervation of the levator palati and of the azygos uvulæ is now thought to be by the vagus, through fibres from the nucleus ambiguus.[6] If this innervation is correct, which the later writers affirm,[7] it gives an anatomical reason why all patients with palatal palsy should be kept in bed, whether or not the pulse and the heart have showed any untoward symptoms, on account of the danger of a possible sudden appearance of cardiac failure.

A study was made of the weight of the hearts of these cases where there was a post-mortem examination. The table below shows the case number, the age, the duration of the illness in days, the weight in grammes of each, the average weight for the corresponding year, according to the tables in the recent text-books of Roach and Holt, and the increase in weight from those averages:

No.	Age.	Duration.	Weights.	Average.	Increase.
59	5	17	120	72	48
63	3	29	120	65	55
79	3	16	65	65	0
105	5	15	140	70	70
325	6	43	115	75	40
331	8	21	155	100	55
363	6	10	105	75	30
369	5	21	115	72	43
400	2	9	75	55	20
463	3	8	80	65	15
514	6	11	90	75	15
723	6	15	95	75	20

In every case there was an increase of 15 grammes or more save in one case. In seven it was 30 grammes or more. The average increase was 36 grammes. As a rule, this increase in weight was greater, the longer the duration of the disease.

Similar tables were constructed for the cases that died of sepsis and pulmonary complications, as extension of membrane into bronchi and broncho-pneumonia. Here the increase, eliminating adults as some of them had chronic heart disease, was 11 grammes. In other words, the hearts of these diphtheria cases that died of cardiac complications showed a greater weight than those that died of pulmonary complications. Whether this increase in weight is due to edema, the infiltration of new cells in the heart muscle, or possibly to the formation of new fibres, must be settled by the microscopic findings.

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[6] Kraus (in the recently published part of Nothnagel Specielle Pathologie and Therapie, vol. xvi., p. 106) gives the above nerve supply of the palate.

[7] For the literature on this subject see Dr. J. J. Thomas's paper on The Innervation of the Soft Palate, in the Medical and Surgical Report of the Boston City Hospital, 1896, Seventh Series, p. 171.

Cardiac thrombi were noted in four cases out of 72 that came to post-mortem examination. In three cases (369, 400 and 463) the thrombi played, apparently, an important part in the fatal result. Death was sudden in no case, but came on slowly, in one to three days. In these cases the pulse was weak in all, becoming imperceptible some hours before death. In one case (463) the rate was as low as 54 the day before death. In another (400) it was 200. Three of the four had a systolic murmur at the apex. The patients were all cyanotic, and had cold extremities, covered with more or less cold perspiration. The location of the thrombi were three times in the auricular appendages and twice in the left ventricle. The formation of these thrombi is explained most probably by the normally slow circulation in the auricular appendages which, in these cases, is more sluggish on account of the weak cardiac action. Another possible explanation is that the areas of degeneration that are found in the endocardium become foci for the formation of thrombi.

No. 79 is of particular interest, as it gives a reason for some of the sudden deaths that occur in intubation cases which are, naturally enough, supposed to be due to some error in the technique of the operation of intubation or extubation. In this case there can be little doubt that the degenerative changes in the nerve was primarily the cause of death, and the sudden coughing up of the tube called upon the heart for an extra and an impossible task. It is on account of this condition of the heart why extreme care has to be used in performing any operation upon a child that has been sick for some time with diphtheria, since it requires only the slightest shock or struggle on the part of the patient to so affect the heart that death is the result.

Degenerative changes in the pneumogastric nerve of more or less severity was observed in every cardiac case where a microscopical examination was made. And, in the three cases where sections were made of the medulla some degeneration of the fibres was noted, although no changes in the nerve cells could be demonstrated by the method of staining used. It is to be regretted that the condition of the myocardium is not known in all cases. In the one examined extreme changes were observed.

The cause of these various heart complications in diphtheria, it would seem, is most probably due to the toxic action of the potomaïnes or the toxalbumins generated by the Klebs-Löffler bacillus. These poisonous substances act on the central and peripheral nervous system, producing functional and degenerative changes in the nuclei and the nerve fibres that innervate the heart. These same toxic agents affect also the myocardium, causing various changes, while the nerve supply may, in some instances, be uninjured.[8]

CONCLUSIONS.

(1) A rapid pulse-rate in diphtheria is to be dreaded. Death usually results when it exceeds 150.

(2) A slow pulse — 60 in young children — is a sign often of serious heart trouble.

(3) Irregularities in the pulse occur in about ten per cent. of the diphtheria cases, and are generally significant of cardiac complications.

(4) A systolic murmur at the apex is heard in about one case in ten, and its prognostic value depends upon the nature of the cause.

(5) A *bruit de galop* in diphtheria is a most fatal sign.

(6) After four weeks, with no heart symptoms in diphtheria, there is little probability of subsequent cardiac trouble in the convalescence.

(7) All diphtheria patients who have tachycardia, bradycardia, irregular or weak pulse, a systolic murmur at the apex, vomiting or any paralysis — especially palatal — should be kept quiet in bed.

(8) The most important element in the treatment consists in absolute rest in bed.

(9) The vagus nerve in the fatal cases always had some evidence of degenerative changes. The weight of the heart was increased.

(10) The cause of death is usually from cardiac thrombi, dilatation or paralysis, produced most probably by the toxin of the diphtheria bacillus.

I wish here to thank those who have aided me in this paper, and especially my teacher, the resident physician, Dr. John H. McCollom, who has so kindly instructed me concerning diphtheria during the past year.

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THE AMBULATORY TREATMENT OF FRACTURES.

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By the ambulatory treatment of fractures of the lower extremity is understood a method of treatment which permits the immediate and continued use of the injured limb as a means of locomotion.

Orthopedic surgeons as early as 1878 conceived the idea of allowing a patient with a fracture of the thigh or of the leg to walk about by means of apparatus.

Thomas, of Liverpool, and Dowbrowski used the Thomas knee-splint in the treatment of fractures certainly as early as the year 1881 or 1882.

Krause,[1] a German surgeon, published in 1891 the first account of the treatment of fractures of the bones of the leg in walking patients. Krause demonstrated that plaster-of-Paris could be used as a splint in fractures of the leg and in transverse fractures of the thigh.

Korsch[2] in 1893 presented a paper to the German Surgical Congress demonstrating that compound fractures of the leg and fractures of the thigh may be treated with plaster-of-Paris splints and early use. Korsch makes extension in a thigh fracture by applying the plaster while traction is maintained by an assistant directly to the skin, snugly to the malleoli, the dorsum of the foot and the heel. A padded ring is incorporated into the upper limit of the plaster splint around the thigh, which presses against the tuber-ischii and thus accomplishes counter-extension. Korsch's cases were treated in Bardeleben's clinic.

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[8] For a recent review of the literature of the histology of toxalbumin intoxication, see Dr. Simon Flexner's paper on "The Pathology of Toxalbumin Intoxication," Johns Hopkins Hospital Reports, vol. vi, p. 259. 1897.

[1] Deutsche med. Woch., 1891, No. 13.

[2] Berliner klin. Woch., No. 2.

Bruns,[3] of Tübingen, in 1893 described a splint for use in these cases of fracture of the leg and thigh.

Dollinger,[4] of Buda-Pesth, in 1893 described a splint for the ambulant treatment of fractures of both bones of the leg and reported three cases. Dollinger's method of applying the plaster-of-Paris splint is the one generally used wherever the ambulatory treatment is employed. The method will be described presently.

Warbasse,[5] at the Methodist Episcopal Hospital of Brooklyn, N. Y., in 1893, was the first in this country to systematically adopt Dollinger's method.

Warbasse reports six cases — all in young adults.

Bardeleben[6] reported in 1894 116 cases treated with walking splints. There were 89 fractures of the leg complicated and uncomplicated, five fractures of the patella, 22 fractures of the thigh, five of which were compound, three cases of osteotomy for genu valgum.

Bardeleben lays down the following law: It is of the greatest advantage to the patient that such a dressing can be applied to a broken leg that he can bear the weight of the body upon it and walk about; but such a method of treatment should be applied only under medical supervision, and with the most careful consideration of complications which might arise.

Korsch[7] presented to the German Surgical Congress in 1894 seven cases, three of the thigh and four of the leg.

Albers[8] in 1894 reported 78 cases (56 of the leg, five of the patella, 16 of the thigh, and one of the leg and thigh) treated by the ambulatory method. These are some of the observations made by him. He seems to be a little more cautious than other Germans in this matter. He says that when great pain is present it is best to employ injections of morphine. Elevation of the limb will often reduce the swelling; when this does not suffice the bandage must be removed. Severe local pain from pressure indicates the necessity for cutting a fenestrum. The first attempt at walking should be made on the day following the application of the cast. A crutch and cane are used at first; later two canes are employed; and, finally, some patients walk without any support at all.

The report made by Albers upon fractures of the patella is so astonishing and so contrary to general experience here in Boston that I report what he says upon the subject:

> In cases of fracture of the patella a plaster bandage is applied from the malleoli to within three inches of the tuber-ischii. This cast has a big fenestrum over the knee, through which the patella appears. For the protection of the fracture a strip of iron band, running three or four centimetres in front of the knee, is incorporated in the plaster above and below. The fragments of the patella are drawn together with adhesive plaster. When there is not much fluid in the joint, the dressing is applied immediately. Otherwise, the fluid is drawn off by aspiration, and the limb treated on the Watson splint for a week. Five patients were thus treated by Albers, the separation representing one and a half to three and a half centimetres. From three to seven weeks were required in obtaining a firm union. All of the patients walked with this splint, and after its removal without support; and after a few weeks were able to bend the knee ninety degrees. The confinement in the hospital averaged fifty-two days. It would be instructive to know the subsequent history of these patella fractures!

Krause[9] in 1894 reported 72 cases treated. He is of the opinion that the ambulant treatment in plaster splints must be limited principally to fractures and osteotomies in the region of the malleoli, the leg and the lower end of the thigh. He does not employ the method in the handling of oblique fractures of the femur and fractures of the neck of the same.

Bardeleben[10] writes again in 1895, reporting up to that date 181 cases treated by the ambulant method. This last report of course included the 116 cases of the previous record.

Dr. Edwin Martin, before the Surgical Section of the College of Physicians of Philadelphia on December, 1895, reported 20 cases of fracture of the leg treated by this method.

Dr. E. S. Pilcher,[11] of Brooklyn, in whose wards Warbasse worked, reported to the American Surgical Association the 20 or more cases treated by him in which the results were satisfactory.

N. P. Dandridge,[12] of Cincinnati, has used the method in eight cases. In most of the cases pain was complained of when weight was borne on the foot. In a feeble woman it was necessary to remove the cast in the third week. In the case of a man — a compound fracture of the leg — after walking two weeks he had so much pain that the plaster was removed. Redness and swelling were great at the seat of the fracture, and there was much swelling over the internal malleolus.

Woodbury[13] introduced the method at Roosevelt Hospital, New York City, and Fiske has reported cases treated at that clinic which were vouched for by Hartley, of New York.

Roberts,[14] of Philadelphia, and George Woolsey,[15] of New York, have used the method in selected cases with satisfaction.

A. T. Cabot,[16] of Boston, has used recently in several fractures of the femur Taylor's long hip-splint.

E. H. Bradford,[17] of Boston, has treated cases of fracture at the Children's Hospital by a modified Thomas knee-splint, combined with and without plaster-of-Paris splinting.

The method of application of the plaster splint in the ambulatory treatment of fractures of the tibia and fibula or fibula alone is as follows (this is practically the method of Dollinger):

> First the reduction of the fracture and cleansing of the skin of the leg with soap and water. Then with the foot fixed at a right angle to the leg, a flannel bandage is smoothly and evenly applied from the toes to just above the knee. This bandage is made to include beneath the sole of the foot a padding of ten or fifteen layers of cotton wadding, making a pad about three-fourths of an inch thick, when it is compressed by the moderate pressure of the flannel bandage. Over this is now applied the plaster bandage from the base of the toes to just above the knee, especial care being taken that the application is made smoothly and somewhat more firmly than is the custom in the ordinary plaster cast. The layers of the bandage should be well rubbed as it is applied, with the view of ob-

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[3] Beiträge zur klin. Chirurgie, Bd. x, Heft 2, 18.

[4] Centralblatt für Chirurgie, 1893, No. 46,

[5] Transactions Brooklyn Surgical Society, October, 1894.

[6] Verband. der Deutschen Gesellschaft für Chirurgie, XXIII Kongress, 1894.

[7] Verhand. der Deutschen Gesellschaft für Chirurgie, XXIII Kongress, 1894.

[8] Ibid.

[9] Verhandlungen der Deutschen Gesellschaft für Chirurgie, XXIII Kongress, 1894.

[10] Ibid.

[11] Transactions American Surgical Association, vol. xiv, 1896.

[12] Ibid.

[13] New York Medical Record, 1897.

[14] Transactions American Surgical Association, xiv, 1896.

[15] New York Medical Record, 1897.

[16] Ibid. [17] Ibid.

taining the greatest amount of firmness with the smallest amount of material. The sole is strengthened by incorporating in with the circular turns an extra thickness composed of ten or twelve layers of bandage well rubbed together, and extending longitudinally along the sole. The bandage is applied especially firmly about the enlarged upper end of the tibia, and here it is made somewhat thicker. As it dries it may be pressed in so as to conform more closely to the leg just below the heads of the tibia and fibula. The assistant, who stands at the foot of the table and supports the leg, makes such traction or pressure as is required to keep the fragments in proper position while the plaster is being applied. The operation requires about twenty minutes, and by the time the last bandage is applied the cast should be fairly hard.

It is seen that when this cast has become hardened the leg is suspended. When the patient steps upon the sole of the plaster cast, the thickness of the cotton beneath the foot separates the sole of the foot so far from the sole of the cast that the foot hangs suspended in its plaster shoe. Thus the weight of the body which would come upon the foot is borne by the diverging surfaces of the leg above the ankle. The chief of these is the strong head of the tibia. A lesser rôle is played by the head of the fibula, and the tapering calf in muscular subjects.

In thigh fractures the use of the long Taylor hip-splint, together with a high sole upon the well foot, and crutches is generally accepted as the best method of treatment.

Those advocating this treatment suggest its application to fractures of the leg below the knee, both simple and compound, and in fractures of the lower end of the femur.

The apparatus is not to be applied for three or four days if there is much primary swelling. Great care is to be exercised in the continuance of its use, regard being had to edema of the toes and pain.

The advantages claimed for the ambulatory method are:

The time spent by the patient in the hospital is less than by other methods.

Union in the fracture occurs at an earlier date.

There is less atrophy of the muscles of the thigh and leg.

There is less stiffness of neighboring joints.

The muscular weakness is less.

The functional usefulness of the whole leg is greater.

The primary swelling associated with a fracture is often avoided, and always less than by the older methods.

The secondary edema is much less.

The amount of the callus is less.

In drunkards and those with a tendency to delirum tremens this liability is greatly diminished.

In old people the danger of a hypostatic pneumonia is lessened.

There is greater general comfort by this method than by any other. The general health is conserved; whereas by the old method the appetite is variable, sleep is troubled, the bowels are constipated, and general discomfort prevails.

Time is saved to the business man by this method — he having to give up but about seven days to a fracture of the leg.

These are the advantages claimed for the ambulatory treatment by its advocates.

All of the facts regarding the ambulatory treatment of fractures of the lower extremity are herewith presented. I have purposely avoided relating the details of each man's experience because those who are interested may consult the original articles from the references here given; such details are not particularly instructive, consisting chiefly of the accounts of modifications of apparatus.

Before this method can be adopted generally and in hospital treatment it must be demonstrated that it is safe and that it offers chances of better functional results than are obtained under present methods, and that the minor advantages claimed for it by ardent German advocates are real and not imaginary.

The first great advantage of the method is stated to be that the stay in the hospital and the time away from one's occupation are much lessened. Regarding this point I have had, through the interest of Dr. Washburn (former house surgeon at the Massachusetts General Hospital), three series of cases examined.

The Massachusetts General Hospital surgical records were consulted at these periods:

(1) Before the use of plaster-of-Paris, that is, previous to 1865.

(2) Just at the beginning of the use of plaster-of-Paris as a splint for fracture.

(3) In 1895, 1896 and 1897.

Thirty-five cases of fracture of the tibia and fibula were tabulated from each period; these were unselected cases.

The duration of the average time spent in the hospital in the first period was 46 days; in the second period it was 45 days; at the present time it is 16 days. In the second period plasters were applied to fractured legs on an average at about the twenty-eighth day; at the present time on the fourteenth day. In other words, there has been since the introduction of the plaster splint a gradually shorter detention in the hospital, as surgeons have come to recognize the safety of an earlier application of a fixed dressing. On an average, patients with fracture of the leg are detained in the hospital to-day but 16 days. The very great saving to the hospital in time by the ambulatory treatment does not therefore appear.

I imagine that at the Boston City Hospital, where it is the safe and invariable custom to split laterally the plaster splint before discharging the patient from the ward, the duration of the time spent in the hospital may average a little less than the time stated above.

It is impossible to consider the statements made with regard to rapidity of healing, sign of callus, absence of muscular atrophy and absence of rigidity of joints, because there are no facts available for the purpose.

The advantages stated are based, most of them, upon the personal impressions of the surgeon in charge; such observations are untrustworthy.

Krause presents a table from Paul Bruns containing the average periods of healing in a series of fractures, and he compares these periods with his own fracture cases, treated by the ambulant method. This is the only attempted scientific statement of observation on this important point. Krause concludes from a study of these tables that, "in the treatment of fractures of the middle and upper thirds of the leg, the ambulant method shows a great advantage in the period of consolidation as well as in the time when the patient can return to work. It seems that the higher up the fracture is in the leg the sooner a cure is effected by the ambulant method of treatment."

In reviewing carefully the literature I am unable to discover any advantage in the results of the ambulatory treatment over the present modern treatment of fractures of the leg.

The present commonly accepted method of treating *uncomplicated* fractures of the leg by allowing the initial swelling to subside, by the application of a plaster-of-Paris splint, later by the splitting of this plaster splint and re-applying it with a retentive bandage, by permitting the patient to be up and about on crutches and the well leg at the end of two weeks, by the subsequent removal of the plaster splint; by passive and active motion and massage to the knee- and ankle-joints; by the gradual bearing of all the weight upon the fractured bone, — this roughly outlined present treatment is satisfactory.

The present commonly accepted method of treating fractures of the femur by long rest in the horizontal position, with extension by weight and pulley, is not satisfactory. The protracted stay in bed is undesirable. The use of the Taylor hip-splint in the treatment of this fracture, assisted by coaptation splints or plaster-of-Paris is of distinct value.

Two fundamental principles in the treatment of fractures must be constantly in mind when new methods are being discussed, namely, the reduction and the absolute immobilization of the fractured bone.

Theoretically and practically the ambulatory treatment does not perfectly immobilize; therefore I believe it cannot pre-eminently succeed as a means of treatment. However, in certain carefully selected cases of fracture below the knee, particularly of the fibula, if under the care of a competent and skilful surgeon, it is possible to conceive of the ambulatory method being used without doing harm.

The method in general seems to me to be unsurgical. Embolism, both of fat and of blood, and the likelihood of pressure sores in the use of the plaster splint are dangers to be considered. It is wise for the injured limb to rest while the reparative process is commencing. Muscular relaxation is desirable in the treatment of fractures. The very admission by the advocates of the ambulatory treatment that muscular contractions take place is reason enough for supposing that complete immobilization is not obtained by this method.

A consideration of the ambulatory treatment of fractures will have served a positive good if it shall lead to a more careful use of the plaster-of-Paris splint in fractures of the leg and to a proper application of the long hip-splint or its equivalent in fractures of the thigh and to the early use of crutches and the high sole on the well foot in both of these lesions.

◆

SOME MODIFICATIONS OF THE OPERATION FOR CLOSING CONGENITAL FISSURES OF THE PALATE.[1]

BY THOMAS FILLEBROWN, M.D., D.M.D.

SINCE Langenbeck devised his operation for cleft palate, no considerable improvement or change has obtained general approval and adoption.

During the past few years some changes in methods have been proposed which I believe will come into general use.

These I propose to describe in this paper.

In the operation as I shall describe it, I have combined the more recent suggestions of others with some modifications of my own, which seem to me to make on the whole a radically different operation from the one generally performed, and producing radically different results as to the size and action of the arch of the palate.

Upon these methods I ask the scientific judgment of this body and of the profession.

The essential of Langenbeck's operation for cleft of the hard palate is the lateral incision along near the edge of the alveolar process, and a complete freeing of the flaps from the anterior point of the cleft to the last molar. This so lessens the blood-supply that sloughing and non-union are of such frequent occurrence as to be considered almost inevitable.

Another point is the supposed necessity of severing the tensor muscles of the palate to relieve the strain and allow the parts to be approximated. This renders the palate much less flexible than natural, and limits its range of motion.

A third point is the practice of dividing the pillars of the fauces to allow the soft palate to be united. This increases the height and width of the arch of the soft palate, and makes it just so much more difficult for the tongue to meet the arch and close the passage into the nose.

I hope to show that the lateral incision of the hard palate may be avoided, the nutrition preserved, and primary union uniformly obtained; that the tensor muscles need not be divided, and the activity and flexibility of the palate not restricted by the cicatricial tissue and the consequent disability of the muscles; also, that the necessity for cutting the pillars of the fauces does not exist; and that the arch may be contracted instead of enlarged, and thus the possibility of perfect articulation made more probable.

The plan I shall describe makes it easy to close a full cleft of the hard and soft palates at one operation, and in much less time than is usually occupied in doing this operation, seventy minutes being about the average time required.

I have adopted the use of wire sutures passing through pure silver disks to approximate the parts and bear the strain, as shown in the figures. I use the silver on account of its germicidal qualities. It better serves the same purpose for which the quill was used so long ago.

The use of a beaded suture for holding the flaps in palatoplasty was described by Dr. David Prince, in 1883. A lead disk has also been used by Dr. T. W. Brophy.

To relieve the tension in the soft palate I make lateral incisions external to the tonsils, which have not, to my knowledge, before been attempted or described. I have discarded the use of a guard-plate. The wire suture and disks take all the strain and successfully counteract the muscular action and hold the line of union immovable, and thus a guard-plate is made unnecessary.

The stability of the wire sutures was well tested in one of my cases, which proved to be a bleeder. Nine hours after the operation I was obliged to plug both nares and hold a compress in the mouth for more than two hours to stop the hemorrhage, yet there was no giving way of the stitches.

I have also found that only good results follow syringing out the mouth and nose. Now I use a fountain syringe and freely wash out these parts at least twice a day. In case of my hemorrhagic patient, I found it invaluable in preventing septic infection.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 5, 1898.

For my convenience in doing the operation I have constructed an apparatus for maintaining anesthesia without interfering with operations in the mouth. This I described in 1893. It is on the plan of the "Junker System." By the use of this no time is lost waiting for anesthesia. This apparatus I show here to-night. It consists of a bellows, a wash-bottle containing ether, and a tube reaching to the mouth of the patient. Air is blown over the ether in the bottle and becomes charged with ether vapor, and is discharged from a small tube into the mouth of the patient. It is amply sufficient to keep the average patient fully anesthetized.

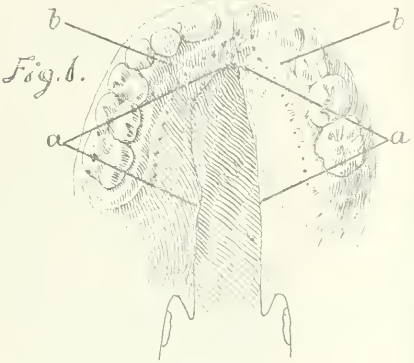
Fig. 1.

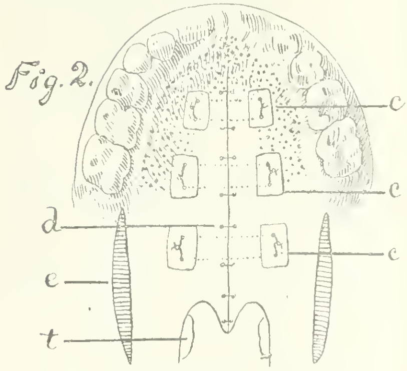
Fig. 2.

My success in my last eight consecutive operations for cleft of the soft palate, the last three cases involving both hard and soft palates, makes it seem that I may see the fruition of a hope I have indulged for several years, namely, that the operation for closing the cleft of the palate, hard or soft, would be made as uniformly successful as other surgical operations of equal importance.

Fig. 1 shows the mouth of a patient, female, six years old. I operated on this patient at a clinic before the Harvard Dental Alumni in June, 1897. The fissure was fully seven-eighths of an inch wide. Fig. 2 shows the operation as I performed it. I commenced my incisions at *a*, *a*, Fig. 1, and with a hoe-shaped periosteum knife dissected off the tissue from the hard palate to the dotted lines *b*, *b*, Fig. 1. After paring the edges of the flaps I inserted silver sutures running above the flaps, and passed them through the palate and through pure silver disks *c*, *c*, *c*, Fig. 2, twisting the ends and making tension which fully approximated the edges. To fully relieve the strain upon the soft palate, and also to allow contraction of the arch, I made the incision *e*, Fig. 2, from the tuberosity to opposite the under molar. I cut through the mucous membrane with a scapel and then separated the deeper tissues with a smooth dissector, in order to avoid injuring important vessels.

The edges of the cleft now held in close approximation were brought more accurately together by fine silk sutures *d*, as shown in Fig. 2. I thus avoided the lateral incision in the hard palate, the separating of the tensor muscles, the cutting of the pillars of the fauces, and approximated the tonsils so as to lessen the arch and allow the soft palate to retract to a considerable extent.

Should I find it necessary in any case to further widen the flaps at the junction of the hard and soft palate, I should make two or more buttonhole incisions opposite the tuberosity, as shown in one of the models of a mouth which I will pass around. The buttonholes will readily fill up by granulation. By this plan the extent of the incision is much reduced, the loss of blood lessened and the nutrition of the parts preserved.

Now, admitting that the surgical operation is improved and better surgical results obtained, a pertinent question presents itself: Are the practical physiological results such as offer encouragement for its use?

The advantage gained by surgical operations as to the health of the parts, the improvement in deglutition and in the self-respect of the patient I shall presume to be admitted.

But, it is asked, Are not better results obtained with an artificial obturator, so far as speech is concerned?

One thing I think is certain, obturators improve nearly every case, but they produce perfect articulation in only a small per cent. of cases, and my observation justifies the opinion that successful surgical operations give satisfactory results in quite as large a proportion of cases, to say the least, as the obturator.

When deferred until after the proper age to learn to talk, neither plan will succeed in giving perfect speech in even a majority of cases. The tongue and lips have each more to do with articulation than has the palate, and if the proper use of these organs has not been acquired before the age of six, eight or ten years, it is impossible for many to acquire even tolerable command of them for speech.

It is possible for some adults to learn to speak a foreign language quite perfectly, yet very few are able to rid themselves of a marked accent. The deformed child has acquired his own method of pronunciation; and learning to talk, after a correction of the deformity by either surgical or artificial means, is like learning to speak a foreign tongue.

For instance, one patient, six years old, after his palate was closed by operation, could readily close his lips if asked to do so, but had not the least power to close them to pronounce the words "papa" or "mamma." While another patient, twenty-four years old. with a cleft of the palate reaching forward to opposite the first molar could, before an operation, by excessive action of the lips and tongue articulate every sound of the alphabet, and a year after his palate was closed, had almost perfect speech. He is now doing business as a jeweller, and customers, strangers to him, have no suspicion that his speech was ever imperfect.

A girl, nine years old, upon whose mouth I operated at the Harvard Dental School in 1892, had a congenital hare-lip, and a wide fissure of the mouth extending from the uvula through the alveolar ridge. At twelve years of age she spoke so plain that a hundred members of the New England Dental Society pronounced her speech perfect.

Last March I completed the closure of a fissure for a boy seven years old. Last week, only eight months after the operation, he repeated the Lord's Prayer with perfect distinctness. I took a phonographic record, which I will reproduce here a little later.

I have had but one patient that has not shown such marked improvement as to be readily understood. That one is handicapped by excessive diffidence and by having a sister to depend on; but as she is quite young I expect her to speak well before the age suitable for an obturator.

The surgical operation should be performed before the child attempts to talk. In such cases we shall be quite sure of perfect speech, and the patient be spared the knowledge of any deformity.

I have made many obturators, and have had my share of successes, and for many years believed the obturator was the only suitable remedy for the deformity; but later experiences have changed my mind.

A young lady, now seventeen years old, has lived for the past eight years in Boston, who was operated upon by Dr. S. C. Gordon when about three and one-half years of age for cleft of both hard and soft palate. Her most intimate friends and associates in Boston have not suspected she ever had any trouble whatever. Her speech is perfect.

I have met a young man, operated on by Dr. C. B. Porter, who shows that in a short time he will overcome every vestige of his former disability.

These operations were done by the ordinary methods.

The phonographic records which I here reproduce upon the graphophone I think bear out my statements.

If such successes are the results of the ordinary methods of operating, it is reasonable to presume that equal success may be obtained in a much wider range of cases when methods of operating are adopted which preserve the functional activity of all the parts.

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EARLY DIAGNOSIS OF A CASE OF CANCER OF THE LARYNX; REMOVAL OF GROWTH BY THYROTOMY; RECOVERY.[1]

BY J. PAYSON CLARK, M.D., AND FRANCIS B. HARRINGTON, M.D.

On account of the comparative rarity of carcinoma of the larynx it is of special importance that every case operated on should be reported, whether the result is successful or not, so that the data the surgeon has to guide him in the treatment of any given case may be as comprehensive as possible. As will be shown later on, one of the chief requisites for success in the treatment of these cases is their early recognition. For this reason every physician should be familiar with the symptoms, especially the early ones, which are usually rather insignificant and apt to be neglected by the patient himself, or, if referred to a physician, treated by him with some general remedy for a "cold," only too often without even an attempt at a laryngeal examination.

The earliest symptom, as a rule, is some impairment of the voice, consisting of a slight huskiness or hoarseness which the patient may, at first, attribute to a cold not worth considering and may not, therefore, consult his physician until it has lasted for several weeks or months. Such a history in a man beyond middle life should at once arouse our suspicions. If, on examination, a growth is discovered it is probably malignant. If the growth is on one of the vocal cords this symptom (voice impairment) naturally appears very early in the disease, but if it starts in some other part of the larynx, less intimately connected with phonation, other symptoms may arise before or simultaneously with it. One of these symptoms is dyspnea. This may be caused by the encroachment of the growth on the lumen of the larynx or by the fixation of one cord owing to the involvement of the deeper muscles. The presence of pain depends upon the site of the growth. As a rule, it is not among the early symptoms and may not appear until late in the disease. Dysphagia is absent where the growth is distinctly intra-laryngeal. The presence of this symptom would indicate that some of the outlying structures of the larynx were involved, such as the arytenoids.

Owing to the irritation of the growth the secretion of mucus is somewhat increased. The secretion takes on a purulent character when the growth begins to ulcerate, which it may do very early if so situated, for instance on the edge of the cord, as to be exposed to attrition. When ulceration occurs there begins to be a peculiar musty fetid odor to the breath, which appears to be almost pathognomonic. Hemorrhage, generally slight, may occur as a result of ulceration. Cancerous cachexia appears, as a rule, so late in these cases that it is of little diagnostic value.

In its early stages there is nothing absolutely characteristic about the appearance of a laryngeal carcinoma. While superficially it may have very much the appearance of a small papilloma or fibroma it may be all the time extending its treacherous growth into the healthy surrounding tissues, and this benign appearance of the external growth may extend to the microscopic section of a piece removed for examination. One should not be satisfied with the first microscopic report of a suspicious growth if it is negative. Often the examination of a second piece from perhaps a little deeper portion of the growth will disclose the characteristic cancerous structure. It seems to me that this fact may explain many if not all of those cases in which a malignant degeneration of a benign growth is reported to have taken place.

To summarize: a unilateral laryngeal growth in a person beyond middle life should always be regarded with suspicion, and a diagnosis made as soon as possible.

The prognosis, without operation, is fatal in from two to three years, depending on the nature of the cancerous growth. The prognosis after treatment depends largely on the time when the operation is done; the smaller the growth the less radical the operation required and the greater the probability of complete removal.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 5, 1898.

In this connection a recent report of Czwielitzer,[2] of thirteen cases of laryngectomy from the clinic of Mikulicz, is interesting. Of these cases nine were partial, two of half the larynx and two total. Five cases, all of partial resection, were living at the time of this report, being six weeks, a year and a half, two and a half years, five years, and eight and a half years respectively, since the operation. The writer goes on to say: "As compared with earlier statistics, there is some improvement in recent years due to two causes, that is, better collection of cases, and improvement in operative technique. The proportion of partial resections is larger, showing that the operation is done earlier than formerly, and there is a falling off of total extirpations owing to the almost constant fatal result following operation. Tracheotomy is done at the time of operation, using Trendelenburg's or Hahn's tubes. Rose's position has not given satisfactory results either during or after operation. The functional result depends largely upon the amount of tissue removed. In cases with two-thirds or more of the larynx remaining a fairly normal function may be expected if the tracheotomy tube is removed fairly early and care taken to prevent cicatricial contraction."

Five of Mikulicz's cases were able to speak audibly but with a harsh, rough voice. The artificial larynx seems to have fallen into disuse.

As regards intra-laryngeal removal of these growths, something should be said, although most writers on this subject are of the opinion that only through an external opening can a thorough removal of a malignant laryngeal growth be accomplished. This belief seems, at first, too well founded to admit of argument, especially when one stops to consider the difficulties of any intra-laryngeal operation, even if the patient is tolerant of intra-laryngeal instrumentation; the removal of the growth piecemeal, the rapid obscuring of the operative field by hemorrhage, necessitating frequent sittings, the difficulty of ascertaining when one has thoroughly removed the growth and invaded healthy tissue.

And yet the intra-laryngeal operation has one stanch and able supporter whose opinion, based as it is on five successful cases, demands consideration. B. Fraenkel[3] reports nine cases operated on by himself by this method with five cures, thirteen years, ten years, nine years, six years and a year and a half respectively since operation. One case was cured only after many recurrences and one gland was removed. One case was not heard from after operation. Two cases required laryngotomy later. Of these one died of apoplexy, but with larynx sound, two years after the first operation, and one from recurrence in glands four years after the first operation. This patient did not return for frequent observation, as requested. One patient died of cancer of larynx after tracheotomy (having refused any other external operation) four years after the first intra-laryngeal operation.

From the cases collected by W. Hansberg[4] and J. Sendziak[5] there appear to be in all 30 cases in which other writers have undertaken the intra-laryngeal treatment. Subtracting from these five cases in which the intra-laryngeal operation was done simply as a palliative measure and three in which the epiglottis was amputated without external operation, there remain 22 cases. All of these are not equally valuable, because in some attempts were made to remove very large intra-laryngeal tumors. Of these 22 cases, nevertheless, there were twelve cures. "Surely a brilliant result."

Fraenkel concludes that the operation is absolutely without danger, and that the results surpass all other operations in that the patient keeps not only his larynx but a good voice, which is often so nearly normal as to escape notice; also, that it is possible by this method to remove all diseased tissue. If the growth is found too extensive for intra-laryngeal operation, then one can proceed to an extra-laryngeal. There is nothing in the intra-laryngeal operation which hinders a later laryngotomy if it becomes necessary. After the intra-laryngeal as well as after every operation for removal of laryngeal cancer the patient's larynx should be examined at frequent intervals. The favorable time for an external operation should not be allowed to pass if the other proves inefficient. Fraenkel uses cutting forceps, curettes and other instruments, but not the galvano-cautery.

I have never attempted intra-laryngeal extirpation of a cancerous growth, deeming it impracticable and a waste of valuable time. After this favorable report of Fraenkel's, however, I shall be tempted to try it in a favorable case.

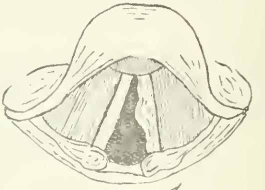

Fig-1.

The case which is the subject of this report is as follows: A. L., aged fifty-nine, married, superintendent in a cotton mill, was first seen by me on December 15, 1896. He then said that two and a half years ago he had been hoarse for two months, but that the hoarseness of which he now complained began fourteen months ago and had gradually increased. He had no pain and complained of no other symptom. His general health was good. He is a stout man of medium height. His face is pale but there is no cachexia. He does not drink or smoke. Examination showed an irregular thickening (Fig. 1) of the left vocal cord extending the whole length of the cord. The thickened cord had a grayish-red appearance, somewhat paler than the mucous membrane of the ventricular band. The right cord was only slightly injected. There was no apparent limitation of motion in the left side of larynx. Although there was no history or other evidence of syphilis the patient was put on to iodide of potash.

An attempt to remove a piece of the growth for examination failed because the instrument was not long enough. On December 16th, with longer cutting forceps I removed two pieces from the inner border of the left vocal cord leaving free border of cord even. Hemorrhage was slight.

On December 18th I first noticed the peculiar musty odor to the breath. There was a superficial ulceration where the piece had been removed.

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[2] Beiträge zur Klin. Chirugie, 1896, Band xvii, Heft 2, p. 447.
[3] Archiv. f. Laryngol. u. Rhinol., Berlin, 1897, vi, 361–374.
[4] Archiv. f. Laryngol., Band 5, p. 181
[5] Die bösartigen Geschwülste des Kehlkopfes, Wiesbaden, 1897.

On December 24th Dr. W. H. Prescott sent me the following report: "The two small bits of tissue which you sent me I have hardened, and the following is the result of the microscopic investigation: The sections are made up of clumps and nests of epithelial cells, with a small amount of fibrous tissue between the collections of cells. There were a few epithelial 'pearls' seen. Diagnosis, epidermoid cancer."

OPERATION.

The operation was performed by Dr. Francis B. Harrington on January 4, 1897.

The patient was in good general health, a very desirable condition for the operation which he was to undergo. Chloroform was used as an anesthetic. It was decided to perform the entire operation at one sitting instead of doing a preliminary tracheotomy. The plan of operation after opening the trachea was to incise the thyroid and, if the extent of the disease demanded, to remove the larynx. If the disease were strictly limited to the soft parts, then only these were to be removed.

An incision was made from above the thyroid cartilage to a point just above the sternum. The anterior aspect of the thyroid and cricoid cartilages, together with the cartilage of the trachea, were clearly exposed. When all the bleeding was controlled the trachea was opened. These cartilages were calcified and were very brittle. In attempting to insert a tampon-canula the rubber was so torn that it was impossible to inflate the rubber bag. The crico-thyroid membrane was then opened, and a packing of gauze was made through this opening above the tube in the trachea. This prevented the escape of blood into the trachea. The thyroid was then cut through in the middle line.

By means of hooks the two wings of the thyroid were separated, and an excellent view of the disease was obtained. The right cord appeared perfectly normal. The left cord appeared to be thickened throughout its anterior two-thirds up to the point of junction with the right cord. The left cord back to its arytenoid was removed with all the muscles and soft parts lying in the left half of the thyroid. In order to insure the removal of all the disease, about one-third of the right cord at the point of union with its mate was also removed.

The disease reached the cartilage in the middle line at the junction of the vocal cord in front. For this reason a small vertical section of both wings of the thyroid was removed in the middle line. There was comparatively little bleeding during this portion of the operation. The patient was operated upon in the ordinary tracheotomy position, as it was found that elevation of the body greatly increased the venous congestion. No attempt to close the wound was made except below the tracheotomy tube. The trachea above the tube, and the larynx, were packed with gauze.

The patient bore the operation well. The after-treatment was one of careful attention to cleanliness and feeding. It was soon found that there was considerable leakage of discharge through the gauze above the tracheotomy tube into the trachea and bronchi, causing troublesome coughing. For this reason a tampon-canula was inserted and worked very satisfactorily. The large opening rendered the dressing of the wound very simple. The gauze was changed every few hours night and day for a week or ten days. The patient was fed for three days by nutritive enemata. After this a catheter was inserted into the stomach through the mouth and the patient was fed in part in this manner. During the feeding the saliva poured down freely into the wound and would have caused much coughing but for the tampon-canula. At this time, whenever the patient made the attempt to swallow or cough, the two wings of the thyroid would open outward like a double door. This, while uncomfortable to the patient, made it possible to thoroughly inspect and cleanse the interior of the larynx.

At the end of ten days the left arytenoid cartilage was found to be loose and likely to drop off. It was removed. There were some pieces of thyroid cartilage which necrosed and were removed. Gradually the ability to swallow increased, as the epiglottis accommodated itself to the changed condition. The wound closed rapidly, and in three weeks' time the patient was able to articulate so that he could be heard across the room. He was then using a fenestrated canula. In another week he was able to leave the hospital, the wound being quite healed.

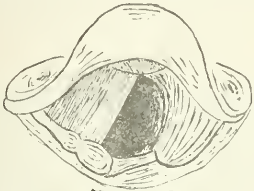

Fig-2.

The advantages of this operation, when feasible, over laryngectomy are the lessened mortality and the preservation of the solid lumen of the respiratory canal. Unless a tube is worn after removal of the thyroid cartilage there is danger of stenosis from contraction or closure from valve action of the soft parts. It is my opinion that the wound should be left freely open after this operation. Asepsis is impossible where there is an opening into the mouth, and cleanliness can best be obtained by having free drainage and an abundance of room for inspection and cleansing procedures.

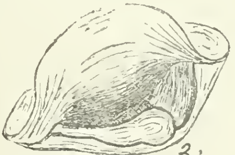

fig. 3.

Examination of the larynx on December 10th showed epiglottis normal, left arytenoid wanting, left ventricular band and vocal cord replaced by a somewhat irregular surface covered by mucous membrane. Right arytenoid, with ventricular band, is freely movable. Right vocal cord absent. Somewhat below the site of the right cord is a prominent mass (granulation tissue?) of a grayish-white appearance. Patient speaks in hoarse whisper.

A laryngeal examination on January 4, 1898, gave much the same appearance except that the granulation tissue under the right ventricular band had disappeared and the tissue on the left side of the larynx was rather more shrunken (see Fig. 2). On phonation the right ventricular band makes a wide excursion and comes in contact with the left wall of the laryngeal cavity. Meanwhile the cushion of the epiglottis moves towards the back of the larynx, concealing the glottis almost completely (see Fig. 3). The vibration of this ventricular band is probably the source of the voice which, though somewhat rough, is loud enough for all ordinary purposes. The operation has not interfered at all with the act of deglutition, which is normal. The larynx has everywhere a healthy appearance. The patient's general condition is excellent, and he has a more healthy complexion than a year ago.

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SCIENTIFIC SPLINTING.[1]

BY EDWARD A. TRACY, M.D., BOSTON,
Fellow of the Massachusetts Medical Society.

THE splinting of broken bones dates back beyond the time of Hippocrates. Common-sense indicated its use, tested it, found it good and set its seal of approval upon it. The object of such splinting was to keep the broken limb straight and to protect it from injury while it "knit." To-day, experimental knowledge, gleaned from the kindred sciences of biology, pathology, histology and physiology, teaches that for the repair and regeneration of broken tissues rest is requisite — and that for the speedy and correct reunition of broken bones fixation is needful. This very principle of fixation for fractures is to-day in jeopardy because of a fallacious method of fracture treatment in vogue, especially in the hospitals. I refer to the plaster-of-Paris bandage treatment. Unmodified, a more unscientific treatment for fractures was never exploited. Fixation was sought for by its use, but the fixation gotten was most imperfect. The firmness of the bandage outside the limb was mistakenly taken to represent the condition within. Numberless deformities have been caused by this plaster treatment — deformities that would not exist had the Hippocratic old-fashioned splinting been used. Fixation with plaster-of-Paris bandages, applied in the ordinary way, is a fallacy. How could it be otherwise? With the limb swathed in cotton-batting, itself compressible, with the subsidence of swelling that accompanies fractures, with the tissue atrophy that comes with the non-use of the limb, how can one rationally expect fixation? Should we not expect deformities after such treatment? That such occur even in the practice of surgeons recognized as skilful is not surprising. (See Burrill and Dwight's paper on the plaster-of-Paris treatment of compound fractures, published in the communications of the Massachusetts Medical Society, 1892.) The fact of non-fixation by plaster-of-Paris bandages ought to be universally recognized.

I have said that because of this fallacious plaster-of-Paris treatment the very principle of fixation for fractures was to day in danger of being questioned. How else explain Championière's attitude towards fixation, at the Moscow Congress? However, while modern science teaches that rest is necessary for the repair and regeneration of broken tissues, so long will fixation be deemed an essential of all fracture treatment. How can this fixation best be obtained? By a scientific surgical splinting. The requirements of a scientific splinting are, that splints be moulded directly upon the parts treated, that they fit directly upon the skin without padding to destroy their immobilizing properties, that they permit of ready removal so that inspection of the parts may be easy, that they be resilient, and readily re-applied and re-adjusted to the limb, so that the subsidence of swelling and tissue atrophy do not impair their immobilization, and, finally, that they be permeable to the x-rays. Such a splinting is readily gotten by the practitioner intelligently using my wood-fibre splint material. Gummed felting, leather, gutta-percha can also be so used. My wood-fibre material is easily demonstrated superior to those materials, and is therefore advocated in preference to them; but any material that fulfils the requirements above given, of a scientific splinting, has my earnest advocacy. Plaster-of-Paris has not, except when used in the method advised by Roswell Park and Roberts — moulding removal splints on the parts. Theirs is the only scientific way of using plaster-of-Paris. Such plaster splints, however, have not the lightness, the resiliency, the toughness, the cleanliness nor durability of moulded wood-fibre splints.

To remind you of the adaptability of my wood-fibre to the various parts of the human frame, I present you four splint forms with brief remarks upon each: (1) wrist splint, (2) humeral splints, (3) thumb splint, (4) rib splint.

(1) *Splint for Wrist Fixation.* — This splint form is applicable to wrist injuries and in particular for the treatment of Colles's fracture. It is made of wood-fibre splint material, moulded over the dorsum of the forearm and hand in a semi-prone position, the hand in line with the forearm. It permits of an efficient treatment of Colles's fracture, that is, passive motion of the fingers from the first day, and, carefully, of the wrist from the fifth day. The splint is discarded generally on the twenty-first day. The efficiency of this treatment I have demonstrated, and am pleased to find that one text-book, Moullin's (translated by J. B. Hamilton), advocates it, Moullin's conclusions on the efficiency of the treatment being independent of my own. The splint form, however, is original. Such a splint compares favorably with the elaborate fencing and staging which we frequently see surrounding the arms of hospital patients perambulating Boston's streets. If such patients or the hospitals derived an income by letting space for advertising purposes on this constructional arm splinting, its use nowadays would be more comprehendable.

(2) *Humeral Splints.* — These are moulded upon the arm, and follow the directions given by Hamilton for moulding similar splints for fracture of the surgical neck of the humerus from leather. Hamilton taught and practised scientific splinting, and was ever averse to the use of plaster-of-Paris.

(3) *Thumb Splint.* — This is readily made by cutting a piece of my splint material and moulding it so as to enclose the thumb, the back of the hand and a portion of the palm, avoiding the cross-palm lines. It forms an efficient thumb splint. Its description was published in the *Boston Medical and Surgical Journal* April 12, 1894. I venture to bring it to your notice again, as I see by an article in the same journal since, one of our hospitals has been struggling with a tin thumb-splint. The age of tin splints is passed. The

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[1] Read before the Surgical Section of the Suffolk District Medical Society, January 5, 1898.

fact that tin is not permeable to x-rays condemns its use for such purposes, as to-day we desire to know the position of bones shown through the splinting, not caring to depend upon a guess as to their condition.

(4) *Rib Splint.* — This splint is a very simple one and readily constructed. It should be moulded over the injured side of the chest from an appropriately shaped splint blank, and bandaged thereon with a swathe. This treatment for the ordinary case of fractured ribs seems a rational one. I do not understand how adhesive plaster or a simple swathe can protect the broken bones from external pressure that may occur at any time, and particularly when the patient sleeps. The rib-splint, however, spanning the weakness in the chest wall and resting on the secure foundation of the sound ribs, prevents undue pressure from reaching the point of fracture.

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Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D.

SCIATICA.

Biro [1] has studied a series of cases of sciatica with the object of making a more exact differential diagnosis between sciatic neuralgia, sciatic neuritis, and hysterical conditions. He believes that in the condition of the Achilles-tendon reflex may be found a distinctive diagnostic criterion between neuralgia and neuritis; every case in which this reflex is diminished or lost is to be regarded as a neuritis, provided, of course, that diseases of the joints and of the spinal cord itself be excluded. In 12 cases the Achilles-tendon reflex was diminished or lost, and in eight of these muscular atrophy was observed in the muscles supplied by the sciatic nerve, with qualitative changes in the electrical reactions, and, in one case, with actual reaction of degeneration. In neuritis the special painful points are often wanting, occurring in only 42 per cent. of the cases; in neuralgia they are found in 84 per cent. Other sensory disturbances are rare in neuralgia, but are noted in half the cases of neuritis. In some cases hysteria may resemble sciatica. In these cases the painful points are rare, there is no pain on passive movements, nor is there any pain on flexion of the extended leg on the trunk. There is often a striking disproportion between the disturbances of function or the patient's complaints and the objective signs. The symptoms may be inconstant, the pain shifting from one side to the other; hysteria also may affect young women, while sciatic neuralgia or neuritis is more common in men of middle age. Out of 156 cases, about seven per cent. were regarded as hysteria and fourteen per cent. as actual neuritis. He concludes with some remarks upon etiology, showing that hemorrhoids were a possible factor in only seven per cent. of the cases, trauma and parturition very rarely have any influence, and exposure to cold is of slight importance, as many cases occurring in the warm and dry season as in the cold and wet. Recurrences were noted in less than two per cent. of the cases. The diagnosis between hysteria and neuralgia or neuritis is of great importance in treatment, since in the former case the use of the leg is to be encouraged, while in neuralgia and neuritis motion must be restrained.

[Biro says nothing of the knee-jerk which is occasionally found diminished in cases of sciatic neuritis. It is a well-known fact that in the early stages of multiple neuritis and in mild cases of multiple neutitis the knee-jerk may be exaggerated or unaffected. It would not be strange, therefore, if in the early stages or in a mild case of sciatic neuritis the Achilles-tendon reflex were not affected. Biro's distinction, therefore, might be simply one showing the degree of neuritis, not a distinction between neuritis and neuralgia. In view of the pathological findings in cases of severe trigeminal neuralgia, it is a question whether there is not a neuritis as the pathological basis in every case of neuralgia. Gowers's claim that sciatica is a sciatic neuritis seems well founded. — Rep.]

TORTICOLLIS.

Risien Russell [2] has published the report of an experimental investigation of the cervical and thoracic nerve roots in relation to the subject of wry-neck. In most cases excision of the spinal accessory nerve alone is of little avail, and the only surgical measure which offers a reasonable prospect of permanent relief is division of the posterior branches of the upper cervical spinal nerve roots. In order to determine just what the anatomical relations are between these nerve roots and the muscles, he conducted a series of experiments on monkeys. For the precise knowledge of the muscles innervated by any given nerve root we must refer to the original article, noting only that there is considerably more individual variation with regard to the nerve-root supply of the neck muscles than of those of the limbs. The practical application of his investigations, however, may be summed up briefly. In the commonest forms of torticollis, surgical treatment must be directed chiefly to the upper four cervical roots; if there be lateral inclination of the head, chiefly to the first and second, if the occiput be drawn backwards, chiefly to the third and fourth. The fifth and sixth roots are least of all likely to conduct impulses which may give rise to spasm, but even muscles supplied by the seventh and eighth roots may give rise to spasmodic movements of the head. When the scaleni are involved, as rarely happens, surgical interference is contra-indicated, for they are innervated in part from the upper dorsal roots, which also contain accelerator and augmentor fibres of the heart, so that section of these roots would have dangerous consequences. He thinks it improbable that, if the chief roots supplying a muscle be divided, and if another root send a few fibres to that muscle, the full force of the nervous discharge should reach the muscle by these few fibres and thus keep up the spasm, but there is a remarkable power of recovery after division of the nerve roots, which may be due to various causes.

Brissaud [3] holds that there is a mental torticollis, where surgical interference is useless, citing, as an example, a case where the lightest application of the finger in steadying the head would check the spasm absolutely, simply an act of faith. Such cases are not uncommon. In less than three years he has seen 19 cases, due originally to some transitory cause, where the effect has persisted as an obstinate torticollis in neurasthenic and debilitated subjects. Occasionally some psychical accident may lead to a sudden cure. He criticises unfavorably the results obtained by operation in a series of 12 cases where Kocher divided many of the muscles, and urges the benefit of psychical therapeutics (not hypnotism), where by careful gymnastic exercises and education of the patient a cure can often be effected. In this connection it may be noted that Pauly[4] has urged that some cases may be of reflex origin, and has reported a case which he thought due to the reflex irritation of a goitre.

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[1] Deutsche Zeitschrift für Nervenheilkunde, xi, 207, November, 1897.

[2] Brain, xx, 35, Spring and Summer, 1897.

[3] Revue Neurologique, January 30, 1897.

The discussion upon this subject at the last meeting of the American Neurological Association has already been reported in these columns,[5] and need hardly be repeated here. It may be remembered that the advantages of operation were warmly urged by Drs. Walton and Richardson, but that the majority of the other speakers were of the opinion that operation afforded little if any benefit.

SPINAL CONCUSSION.

Kirchgässer[6] has repeated the well-known experiments of Schmaus on rabbits, by placing an elastic rubber disc covered with wood over the spine, and striking several blows with a mallet until paresis of the hind legs developed. By the second or third blow spasm of the legs developed; twenty blows usually sufficed to produce paresis. He never found any injury of the vertebral column or hemorrhage into the vertebral canal or the cord itself, although in one case there were slight hemorrhages in the spinal muscles and on the anterior surface of the psoas. In later experiments the rubber disc was used alone and fewer and lighter blows were given. In the first four experiments where more violence was used, he found, by Marchi's method, evidences of disease in the lower dorsal cord involving the whole transverse section, destruction of medullary sheaths, disappearance of fibres, and ascending and descending degeneration in the cord. In two cases where the blows were few and light the changes were less pronounced, were limited to the anterior portion of the cord, and were attended only with descending degeneration. In the former cases, Weigert's method showed distinct changes which it did not show in the latter. The changes correspond to those described by Schmaus, except that Schmaus, working before Marchi's method was made known, failed to recognize that the changes in the cord, above and below the seat of injury, were due to degeneration of the various tracts. The experiments also prove that quite marked organic changes may occur in the spinal cord from simple concussion without injury to the vertebræ, hemorrhage in the vertebral canal or in the cord itself, or even any marked injury of the soft parts outside the vertebræ.

In confirmation of these views Erb[7] has brought forward more proof from the clinical side showing that chronic and progressive lesions of the cord may develop as the result of concussion. In the first case a healthy man of fifty-six fell on the ice striking on his buttocks. Except for a bruise and some soreness he had no symptoms until two weeks later, when he had a contracted feeling in his calves and difficulty in moving the right great toe. Two weeks later he had similar trouble in the left great toe, and he began to have difficulty in raising his toes in walking. Later he had trouble in raising the legs to mount the stairs. In three months' time the trouble reached its height and then remained stationary. Twenty months after the injury, he had complete paralysis of the leg muscles with marked degenerative atrophy and fibrillary twitching, with marked paresis of the thigh muscles, and some paresis of the glutei and extensors of the thigh. There were no sensory disturbances. The reflex at the ankle was lost and that at the knee lively. In a second case a healthy man had a violent wrench of both arms, causing severe pain in the shoulders. The left arm recovered in a few days, the right arm in three weeks, but later he noticed that he could not use his arms quite so well in working above his head. Two and a half years later he began to have weakness and slight wasting of the right arm, which at first improved a little but later grew worse, and extended into the left arm until finally he had a marked degenerative atrophy with fibrillary twitching in both arms and both shoulders, most marked in the muscles of the shoulder and upper arm. There were no sensory disturbances. There were no spastic symptoms and the reflexes were almost gone. Erb gives a brief synopsis of a number of similar cases reported by various observers, and after a very careful and exhaustive consideration of all the possibilities, considers both cases to be chronic progressive poliomyelitis and that both were undoubtedly the result of the accidents described.

MUSCULAR ATROPHY IN HEMIPLEGIA.

Schaffer[8] has found distinct muscular atrophy in 22 out of 23 cases of ordinary cerebral hemiplegia, and he considers it a regular accompaniment of this condition. In the majority of cases the degree of atrophy is very considerable and it may be diffuse or localized, and it usually varies in intensity from the proximal part of the upper extremity downwards. In rare cases the non-paralyzed side may also be affected. The electrical irritability of the muscles is diminished, and slow contractions occur, but complete reaction of degeneration was never observed. Fibrillary contractions were occasionally seen. Schaffer then reviews the two theories that have been advanced to account for this atrophy, the older one that it was due to a secondary lesion in the cord, and the later one that it was due to a lesion in the thalamus; certain writers, however, have maintained the opinion that early atrophies were of cerebral origin and late atrophies of spinal origin. In two old cases Schaffer found pronounced degeneration in the pyramidal tracts and atrophy of the anterior horn, and in a case of only forty-eight days' duration where there was moderate atrophy there was secondary degeneration in the pyramidal tract revealed by the Marchi method, and degeneration of the ganglion cells in the anterior horn revealed by Nissl's method. The reason of these changes in the spinal ganglion cells leads to a study of the trophic conditions in the light of our modern ideas of the neuron, and to the following conclusions: the trophic function of the nervous system is manifested in a simple and in a complex form; the elementary trophic influence is that exerted by a nerve cell on its axis cylinder and terminal arborizations, the systemic influence is that exerted by one neuron on another, in functional relation with it. This systemic influence may be homologous (only motor or only sensory) or heterologous (sensori-motor). As soon as the integrity of a neuron is injured both parts suffer, contrary to Waller's law that only the part removed from the nerve-cell suffered. In the motor tract there may be an acute or a chronic necrosis of either the central or the peripheral neurons. If from any cause the central neuron is affected, the peripheral neuron, no longer receiving its accustomed stimulus, finally undergoes changes, and, on the other hand, if the peripheral neuron be diseased, a chronic necrosis later develops in the central neuron, which can no longer exert its usual influence upon the peripheral neuron. In like manner, if the sensory neuron be diseased, the motor neuron, no longer receiving its customary sensory stimuli, will undergo changes, as seen in the muscular atrophy of tabes or after amputations.

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[4] Revue de Médicine, February, 1897.
[5] See this Journal, October 7, 1897.
[6] Deutsche Zeitschrift für Nervenheilkunde, xi, 406, December, 1897.
[7] Loc. cit., xi, 122, September, 1897.
[8] Monatschrift für Psychiatrie und Neurologie, July, 1897.

(To be continued.)

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting, Wednesday, January 5, 1898, Dr. H. L. Burrell in the chair.

APPARATUS FOR APPLYING DRY HEAT.

Dr. J. E. Goldthwait showed an inexpensive yet efficient apparatus for use in applying dry heat to bone and joint diseases.

Dr. Thomas Fillebrown read a paper entitled

SOME MODIFICATIONS OF THE OPERATION FOR CLEFT-PALATE AND HARE-LIP.[1]

Dr. C. B. Porter: I have been very much interested in listening to Dr. Fillebrown's paper on this subject. It is one in which I have been interested for a great many years, and I have been more fortunate perhaps than some in having had the opportunity to see Dr. J. Mason Warren, who had a world-wide reputation for this operation, do the operation and learn from him the technique as he had improved upon it, and from that time until now in cases that required it have done the operation. I have never divided the muscles as Dr. Fillebrown thought possibly I had; I have never resorted to that, and I only have to differ from my experience — perhaps more experience will prove that Dr. Fillebrown is right and that I am wrong — and that is that the time for operating is after the child has teeth enough to hold an obturator. It is possible that the operation as modified by him will do away entirely with the obturator, but to my mind that is one of the most important elements of success in the operation, because it obviates the pressure which the tongue brings to bear upon the parts in the act of swallowing. Unless a person has thought about it he hardly realizes how much pressure the tongue produces upon the palate in swallowing, and the only non-successes I have had have been where the patient was too young to wear an obturator, so that for a number of years I have not operated upon anything under the age at which the first teeth will hold an obturator.

I now operate entirely in the Rose position, that is, with the head over the end of the operating-table, and in that position there is no danger of blood getting into the trachea, which is one of the most trying things in operating in the upright position. Years ago in watching, for instance, Dr. Warren do the operations that were generally done upon young adults, I noticed that the bleeding was controlled by the application of ice at the time of the operation, and that the operation was done without ether, it being thought advisable then to undertake the operation, as I recollect, not till the person could have the fortitude to have the operation done without ether. I never remember seeing the operation done with an anesthetic. So that the first thing I would lay stress upon would be operating in the Rose position. There is, of course, more bleeding in that position than in the upright, but it is very easy to control. The sea sponges should be used always in this operation, and if pressed in and on to the bleeding points a short time, the bleeding is controlled. I have never been obliged to tie a vessel; in fact, the vessels cannot be seen very well. I have always made the lateral incisions along the alveolar arch in all the cases, that is, not dividing the muscles which Dr. Brown spoke of; and in that way it seems to me the tension is taken off better than in any other manner.

Those who are familiar with the arch of the palate in these cases know how very acute the angle is in the anterior part; instead of being arched, it is a sharp angle, so that the flaps when dissected off and left attached in front make it very difficult to get a needle of sufficiently small curve to enter there. Having made these lateral incisions, I have carried them round to the middle line in front on both sides, so that those flaps fall down, and then they will come together with the greatest ease; and it is astonishing how much is gained by that maneuvre. After sewing the flaps together on the median line, they can again be attached in front. I will show a case later on in which I have done that.

I have always used silk soaked in the compound tincture of benzoin. That was one of Dr. Warren's expedients to keep the stitches from slipping. As they are tied, it prevents slipping, and one does not have to resort to the surgical knot.

I think I have laid sufficient stress on the obturator. I consider it is a very important thing.

If I may be allowed, I would like to show a case I have here that is just recovering from the operation. This patient was so obstinate we could not syringe out the nostrils and she became a little septic.

If we can have an obturator devised like Dr. Fillebrown's, which may be used in quite young children, I should think the time for operating would be as early as an obturator could be safely worn. The question hinges upon the obturator with me very largely.

Dr. Fillebrown: I will add that the only question as to how early the operation should be done is, How young can the child bear it? I feel fully assured it can be well borne before the child is two years old.

The best position for me is the semi-upright; I suppose it is because I am most accustomed to it. I have tried both, and have had no trouble from blood entering the trachea in either case. If the patient is not too deeply anesthetized, there is no danger of blood passing the epiglottis.

Drs. J. P. Clark and **F. B. Harrington** presented a paper on

EARLY DIAGNOSIS OF A CASE OF CANCER OF THE LARYNX; REMOVAL OF THE GROWTH BY THYROTOMY; RECOVERY.[2]

Dr. Prescott: A microscopical section from the specimens received from Dr. Clark showed it to be a typical epidermoid cancer, but in the tissues which were removed from around the larynx by Dr. Harrington there was no cancerous infiltration; there were no epithelial prolongations, nothing but inflammatory tissue, fibrous tissue and part of the muscles of the larynx. It was a typical case of epidermoid cancer of the larynx removed before there had been any infiltration.

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[1] See page 105 of the Journal.

[2] See page 107 of the Journal.

Dr. G. A. Leland asked me if he could not get here, to show this specimen which was removed postmortem, as you see, from a case of his which he had followed four years. When he first saw the patient the condition must have been very similar to that which was noticed in Dr. Clark's and Dr. Harrington's case. Operation was considered, but not recommended, owing to the age of the patient, seventy-four years. A great deal of the tumor was removed intra-laryngeally, and the patient lived four years, not suffering very much until the latter part of his life, when tracheotomy became necessary (four weeks before his death). He did very well considering his condition even after the tracheotomy, but died of an acute lobar pneumonia with a general pneumococcus infection. Here, even at the end of four years, there is almost no infiltration around the larynx, although there is one large gland down near the carotids. It has not been examined microscopically yet, because the specimen was put right into Kaiserling in order to keep the color.

Dr. C. L. Scudder read a paper on

THE AMBULATORY TREATMENT OF FRACTURES.[3]

Dr. E. A. Tracy considered the subject of

SCIENTIFIC SPLINTING.[4]

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Recent Literature.

A Text-Book of Special Pathological Anatomy. By Ernst Ziegler, Professor of Pathology in the University of Freiburg. Translated and edited, from the eighth German edition, by Donald MacAlister, M.A., M.D., Linacre Lecturer of Physic and Tutor of St. John's College, Cambridge, and Henry W. Cattell, M.A., M.D., Demonstrator of Morbid Anatomy in the University of Pennsylvania. Sections IX–XV. New York: The Macmillan Company. 1897.

The appearance of this second volume, comprising Sections IX–XV of the English translation of the latest German edition of this well-known work, cannot fail to be welcome to students and teachers of pathology.

There is certainly no text-book which equals that of Ziegler for the purposes of the student of elementary pathological histology. Although not a treatise altogether satisfactory to the specialist, it admirably fulfils the need of students for a clear and simple account, supplemented with numerous drawings, of the accepted facts in this department of pathological study.

The present volume contains reproductions of all of the illustrations of the original, together with the numerous special reference lists which form such a useful feature of the German work. The translators' part has been done very creditably and the typography and binding are good. The illustrations in most instances are well reproduced. We can heartily recommend the book.

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THE INFLUENCE OF PATHOLOGY UPON THERAPEUTICS.

"The Art of Medicine," says Pye Smith in a recent lecture upon the subject of the influence of pathology upon therapeutics,[1] "deals with the most diverse objects": mechanical causes, like a fracture or a hernia; the results upon the system of an insufficient supply of food; the presence of a foreign body in the tissues; the complications of a physiological process, such as parturition; the natural decay of a living organism, or the results of its invasion by a swarm of parasites. But like other arts, such as navigation, architecture or engineering, it depends upon science, in such important departments as the prevention of epidemics of infectious diseases, the treatment of poisoning by the proper antidotes, correction of deformities of limbs, and other matters too many to enumerate.

"We may speak of physiology, pathology and pharmacology as the medical sciences; so we may speak of the science of war; but preventive and curative medicine, like strategy and tactics, still remains an art, and medical science means only physiology in its widest term, including the physiology of disease and the effect of drugs and poisons."

Pathology, as studied to-day, is not mere morbid anatomy, but an inquiry into the natural history of disease, into the causes of disturbed bodily processes (whether heat or cold), the effect of mechanical agents or of the invasion of the body by parasites.

It is only within our own memory that the indispensable method of experiment has been added to that of observation. The new pathology differs from the old in that it does not consider the hepatized lung, the calculus of the kidney or the tumor of the brain as the disease, but regards disease as a process of which the origin as well as the results demand investigation. "Diseases are processes just as natural and necessary as health, and they exhibit disturbance, not abolition, of the processes of physiology. Involution, degeneration, decay and death are as much normal events as evolution, growth and birth. And this is an encouraging view to take, for if disease is only perversion the perverted function may be restored; if we know what sets things wrong we may hope to set them right again. When we discover a parasite we may hope to poison it; when we isolate a toxin we may hope to find an antitoxin."

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[3] See page 102 of the Journal.

[4] See page 110 of the Journal.

[1] Lancet, January 20, 1898.

The statement that if the labor and skill employed on pathology had been devoted to therapeutics the art of medicine would be more advanced, will not bear analysis. Now and then a great discovery, like that of vaccination, has been made by observation and experience alone; but not until many years have been spent in study and experiment do we learn that vaccination is only a general example of the method of combating disease by means of attenuated virus. Such results as the prevention of cholera and enteric fever by the discovery that their virus is conveyed by drinking-water, and the prevention of post-operative and puerperal sepsis by the avoidance of infection by pathogenic bacteria, are among the direct results of the application of pathology to practice.

The application of pathology to practice does not exclude the salutary check of experience, any more than does the application of the higher mathematics to the art of bridge-building. Pathology can merely indicate a probable line of treatment; clinical experience must show whether it is trustworthy. Sometimes we find that the results of clinical trials differ for the worse from those of laboratory experiment, but we can all call to mind a sufficiency of examples of the brilliant clinical success of the results of pathological experiment.

The kind of practice which is not based upon pathology is found to be not only irrational but futile in results. The "depletory" and "corroborant" systems of medicine, those which depend upon "sympathies," the systems of "allopathy" and homeopathy are not wrong answers to a serious question, but attempts to solve a meaningless problem. "Disease in the abstract" does not exist. Diseases are as natural as health, and the reaction of the living organism to injurious stimulants is evidence of life, not of death.

"If we fix our attention on symptoms and direct our treatment to them alone, we may please the majority of our patients (who can always supply us with the seat and the cause of their disease and expect from us only the appropriate remedy), but we shall never satisfy our own conscience. For we know or ought to know that symptoms are only indications of the 'seat and the causes of diseases,' and that while these are undiscovered those can only be dealt with in the dark — uselessly or injuriously. . . .

"Surely we must condemn not only the exploded systems of sympathies and signatures, the Brunonian and the homeopathic, but all systems as systems and all attempts to base treatment on occult properties. The one touchstone for efficient treatment is experience, spread over many lands, prolonged for many years, attested by many competent witnesses. And the one safeguard that our practice shall be rational and honest is that it follows the teaching of pathology."

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NEW YORK STATE BOARD OF CHARITIES ON DISPENSARIES.

The Thirty-first Annual Report of the New York State Board of Charities, which was submitted to the Legislature on January 24th, is said to have been received with much satisfaction by the medical profession.

While the Board cannot sympathize, says the report, with any harsh assault upon the dispensaries, which, properly conducted, are accomplishing much good, it is undoubtedly true that there has been much to irritate in the position assumed by the managers of some of these institutions, and that unwholesome and harmful conditions exist for which there should be found some adequate but temperate remedy. Most of the dispensaries of New York, it is argued, do material injustice to those who do not seek charity and continually dispense relief to those who do not need it. Competition among dispensary managers has resulted in the situation that nearly one-half of the inhabitants of the city are now receiving practically free medical treatment. That this is a wrongful state of affairs and produces an unfair competition with physicians, who, unlike the dispensaries, are not partially supported by charitable donations, admits of no question. That it is also extremely pauperizing in its tendencies is equally true.

In the city of New York and vicinity there has been a greater growth of some forms of charity than necessity demands. For this reason the Board was unable to approve the incorporation of St. Bartholomew's Clinic and the Cherry Tree Home for Destitute and Orphan Children. On reliable information it can be stated that there are now more than four thousand vacant beds in the children's institutions of New York City. There are strong reasons why the Board should carefully examine into the merits of very application for the approval of a certificate and why it should refuse approval unless the necessity for the incorporation at the time and place and under the circumstances set forth in the application be affirmatively shown and satisfactory evidence be furnished as to the character and standing in the community of the proposed incorporators, and also as to the financial standing and sources of future revenue of the institution they wish to incorporate.

If one-half the thought and energy, the report goes on to say, which are wasted in making the poor of our great cities dependent were used to encourage habits of industry and a spirit of independence, the condition of the destitute would be materially improved and that of the State rendered more prosperous and satisfactory. The Board earnestly recommends the passage of a statute empowering it to make rules and regulations in accordance with which the work of placing out dependent children in family homes shall be carried on. Among the other recommendations made are that the Board be authorized to select all new sites for State institutions subject to its supervision, that the adoption of building plans for State or other charitable institutions be made subject to its supervision, and that no more charters be granted to private reformatory organizations, but that as soon as practicable all such institutions shall be owned and managed by the State.

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MEDICAL NOTES.

A Medical Senator in France. — We learn from the *Presse Médicale* that Dr. Samuel Pozzi has been elected a senator.

The International Congress of Hygiene and Demography. — The Ninth International Congress of Hygiene and Demography will be held at Madrid, April 10–17, 1898, under the patronage of His Majesty King Alfonso XIII and Her Majesty the Queen Regent. The President of the Congress is Dr. Julian Calleja and the Secretary-General is Dr. Amalio Gimeno, Minister of the Interior, to whom all correspondence should be addressed.

A Chinese Edition of "Gray's Anatomy." — Dr. H. T. Whitney, president of the Medical Missionary Association of China, is engaged in the laborious task of translating "Gray's Anatomy" into Chinese. The undertaking has impressed Dr. Whitney's former associates in the Northern Ohio District Medical Society as one of such magnitude that they have come to his assistance by passing a special resolution congratulating him and wishing him God-speed in his work.

The Kentucky Definition of the Practice of Medicine. — Judge Thompson, of Kentucky, in pronouncing sentence upon an osteopath who was convicted of subjecting a child with tuberculous disease of the hip-joint to cruel and unnecessary torture, gave the following definition of the practice of medicine: "Any person who, for compensation, professes to apply any science which relates to the prevention, cure or alleviation of the diseases of the human body, is practising medicine within the meaning of the statute." This concise yet comprehensive definition, which will doubtless serve as a precedent, is broad enough to include every form of pretender from the itinerant advertising quack to the so-called Christian Science and Faith Cure healers. New York may well do homage to Kentucky, whose noble profession has driven from its borders every irregular practitioner of whatsoever kind, system or genus. —*Buffalo Medical and Surgical Journal.*

Zola and the Paris Medical Students. — The Paris medical students have been greatly angered by M. Zola's letter to the President of the Republic, published in *L'Aurore*, wherein he accuses General Billot of suppressing proof of Captain Dreyfus's innocence, and other generals of being accomplices. The Medical Students' General Association addressed a letter to M. Zola, protesting against his views. Medical students have amused themselves by attempting to parade about Paris in organized bands, shouting, "Conspuez Zola!" A few policemen quickly sent them home to their lodgings. M. Zola, in reply to their letter, requests M. Tissier, the President of the Committee of the General Students' Association, to assure his comrades that he (Zola) does not attack the army, but only the conduct of some of its chief officers; that his heart aches to see the youth of France mixed up with those interested people who maneuvre to make these two questions appear one. M. Duclaux (member of the French Institute, and director of the Pasteur Institute), Prof. Charles Friedel, Professor Grimaux, Dr. Pottevin, Dr. A. Zuber, M. Delbet (hospital surgeon, and *professeur agrégé* at the Medical Faculty), Professor Bonnier, and many other men well known in the academic and scientific worlds, have signed a petition asking that the Dreyfus case may be reopened.

Typhoid Fever in Philadelphia. — The *Medical News* gives the following figures with regard to the present epidemic of typhoid fever in Philadelphia: "Since the beginning of the present outbreak, the first week of last December, 1,134 new cases of enteric fever have been reported in the city of Philadelphia, and of this number 675 have occurred during the first four weeks of the new year, or an average of more than 168 new cases weekly up to the present time. As a striking comparison, we may state that during two weeks of the present month New York City — exclusive of Brooklyn, etc. — with a population twice that of Philadelphia, reported a total of 36 new cases of typhoid, while Philadelphia for the corresponding period reported no less than 366 new cases!" The Schuylkill River, from which the greater part of the city's water-supply is derived, is known to be infected, and a loan of $3,700,000 was authorized last fall for the filtration, or purification by other means, of the water-supply. The reason that a filtration-plant has not been established is said to be the failure of the Common and Select Councils of this ring-ridden city to take action, for the reason that they were unable to effect among themselves a sufficiently remunerative plan for the division of the spoils attending the undertaking. We can agree with the spirit if not the letter of the editor's statement, that the councils richly deserve for their utter incompetency in all legislation save that pertaining to their individual enrichment, the "desecration" which is heaped upon them by the entire community.

The editor of the *Philadelphia Medical Journal* expresses himself in no uncertain tones upon this subject. We quote the following from among his comments: "Filter the water! London has a death-rate a fraction of that from which we suffer. Why? Because she has common-sense enough to filter the water, originally filthier than ours, which she uses. While our bosses and politicians are 'feathering their own nests,' annexing Hawaii, and kicking up a fuss with foreign countries, they have not time to attend to the health of the people whom they misrepresent, —and the murdered people meekly die, and the friends of the dead continue to vote for the bosses and their henchmen. . . . Bordering on the incredible is it that a member of Councils could be found to stand up at the very hour when scores of his fellow-citizens were lying on their death-beds in consequence of having been poisoned by drinking this lethal fluid, and utter the words, 'We have good water.'"

BOSTON AND NEW ENGLAND.

A Centenarian. — Mrs. Sarah Weed, of Merrimac, Mass., celebrated her hundredth birthday on January 28th. She was born in Amesbury, Mass., and was married in 1819.

Fined for Non-Registration. — A. R. Gilmore pleaded guilty to the charge of holding himself out to the public as a physician, without being registered, and was fined one hundred dollars in the Superior Criminal Court in Boston last week.

The Vermont State Board of Health has recently established a bacteriological laboratory in which bacteriological diagnoses will be made free of charge for physicians of that State. The laboratory will be opened for this branch of its work on February 1st.

Meeting of Medical Militiamen. — A meeting of the medical officers of the Massachusetts Militia was held at the South Armory in Boston on January 27th. Surgeon-General Blood presided, and numerous papers on various subjects of interest to military surgeons were read.

"The American Journal of Physiology." — The first issue of the *American Journal of Physiology* appears under date of January 3d, and under the imprint of Ginn & Co., of Boston. It is printed at the University Press and has an attractive appearance. There are nine articles, all by well-known men on subjects closely related to physiology and physiological chemistry. All who are interested in this department of medical science will find this journal invaluable.

Subjects for Anatomical Study. — The Judiciary Committee of the Massachusetts House of Representatives gave a hearing last week on the petition of Howard P. Bellows, that the law which now permits medical schools to take bodies from the public institutions for the pursuit of anatomical science may be made mandatory upon the overseers of the poor, trustees for children of Boston, the Boston pauper institutions' trustees, and officers of State institutions. The bill was advocated by Dr. H. P. Walcott, Chairman of the State Board of Health, Dr. Bellows, and by Dr. Thomas Dwight, Professor of Anatomy at Harvard.

To Improve the Milk-Supply. — At a Meeting of the Massachusetts Association of Boards of Health in Boston on January 28th the rules regulating the purity of milk-supplies, proposed by the committee on the subject, of which Prof. W. T. Sedgwick is the chairman, were adopted, having been almost unanimously agreed to by the association and the milk producers who were present. Officers were elected as follows: Dr. Henry P. Walcott, President; Dr. S. H. Durgin and Dr. S. W. Abbott, Vice-Presidents; Dr. Edwin Farnham, Secretary; Dr. J. B. Field, Treasurer; Dr. W. H. Chapin, Dr. H. L. Chase, J. C. Coffee, R. L. Newcomb, Dr. J. A. Gage, Dr. W. P. Bowers, Dr. G. L. Tobey, Dr. W. Y. Fox, Nathaniel Hathaway and David M. Little, Executive Committee.

Spitting in the Street-Cars. — The observance of the prohibition of the Boston Board of Health and the boards of some of the neighboring towns against spitting in the street-cars seems of late to have been somewhat lax. Before resort is had to more stringent measures for the enforcement of the rule, the authorities of the Boston Street Railway Company propose trying the effect of furnishing the conductors with pads of slips on which are printed the regulations of the Board of Health. To every offender and on the occasion of each offence against the rule the conductors are enjoined to politely furnish one of these slips. We would suggest that the conductors be also provided with a basket of destructible spit cups, and a bottle of antiseptic solution, to be furnished together with the slip.

Brookline Adopts an Anti-Spitting Ordinance. — The Board of Health of Brookline, Mass., has issued an order which forbids spitting upon the floor of any public conveyance, shop, store, hall, church, schoolhouse, railroad station or other public building or upon the steps of any of said conveyances or buildings, or upon the sidewalk of any public way. Spitting into the gutter or street is not forbidden. Copies of the ordinance have been posted in public places, carried by each patrolman and distributed to every family in the town. In the enforcement of the above order, and especially in regard to sidewalks, the members of the police force have been directed to employ both vigilance and tact. On seeing a violation the officer is expected to quietly call the attention of the offender to the order, showing a copy of it, and withdraw. If the officer sees a repetition of the offence, after he has called attention as above, he will make an arrest.

NEW YORK.

New York County Medical Association. — At the annual meeting of the New York County Medical Association, January 17th, the following officers were elected for the ensuing year: President, Dr. George Tucker Harrison; Vice-President, Dr. F. C. Wiggin; Corresponding and Statistical Secretary, Dr. Parker Syms; Treasurer, Dr. John H. Hinton; Member of Executive Committee, Dr. C. E. Dennison.

The New York County Medical Society vs. the Health Department. — A bill introduced into the Legislature by Senator Brush and emanating from the Committee on Legislation of the Medical Society of the County of New York is just now exciting much attention. Its apparent purpose is to put an end to the production of antitoxin and vaccine virus by the city, to give a monopoly to private producers, and to stop further progress of the bacteriological work now being done under the direction of the Health Department. The bill attempts to make the declaration that tuberculosis is not a contagious or infectious disease a part of the statute law of the State, and it also provides that the President of the Police Board shall no longer be a member of the Board of Health, and, while it limits the jurisdiction of the Board to questions of health only, makes possible the appointment of a Board composed wholly of physicians, and the selection of a physician instead of a layman as president. The following diseases alone are to be characterized as contagious, pestilential or infectious: measles, diphtheria, scarlet fever, small-pox, chicken-pox, whooping cough, typhoid fever, typhus fever, cerebro-spinal meningitis, Asiatic cholera and yellow fever. It is said that when the Health Department began the work which it is now proposed to abolish, diphtheria antitoxin was selling for $12, and that in consequence of the department's production the price is now $1.50. The city's bacteriological bureau has attracted attention in Berlin, Vienna, England and Scotland, where its methods have been copied, and in many American cities. An appropriation of $30,000 a year is made for it, and as much more is realized by the sale of antitoxin and vaccine virus, with which it supplies the city of Chicago.

On January 25th the Board of Health issued a statement in reply to the criticisms of the County Society. President Strauss declares that the proposed bill will be energetically fought. He calls attention to the reduction in the death-rate for the week ending January 22d as compared with the corresponding week of 1897, the figures being 17.95 and 18.65 respectively, and to the reduction of infant mortality under the present board, the saving of lives of children under two years of age since 1893 amounting to 36.5 per cent.

On January 26th the Committee of the County Society had a hearing before the Board of Health in regard to the bill, and in the course of it Dr. T. E. Satterthwaite, the chairman, stated that the extermination of tuberculosis was a Utopian dream which could never be realized. "It is a singular fact," he said, "that the plan advocated by the charter is in line with a similar one tried in Naples in 1782. Physicians were then obliged to report their cases of consumption. Failure to comply was punishable with a heavy fine. Yet at the end of fifty-six years, during which this law was applied, nothing was accomplished." He argued that it would be impracticable to isolate the consumptive poor. The tuberculous bacilli could not be exterminated, because they were too widely disseminated, and the city could not give hospital accommodation to tuberculous patients because of their number and because of the great expense.

The Health Commissioners agreed to a postponement of the discussion for one week, when it was to be renewed at Albany.

Mortality Statistics for 1897. — The State Board of Health reports that during the year 1897 there were 117,075 deaths in the State, about 3,000 less than in 1896, and the smallest number in any year since 1889. The mortality from zymotic diseases constituted 14 per cent. of the deaths. In 1896 it was 15.06 per cent., and for the last few years has averaged about 18 per cent. As compared with 1896 there were fewer deaths from diarrheal diseases (by 1,500), diphtheria (by 500) and measles (by 600). Whooping cough and typhoid fever also showed a decrease, while there was a moderate increase in the deaths from scarlet fever. Influenza caused 3,000 deaths early in the year. Consumption caused 12,638, against 13,265 in 1896, and the infant mortality was 32.6 per cent. lower than usual.

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Miscellany.

THE MURDER OF WILLIAM TERRISS.

It has now become an established doctrine that a crime, however deliberate it may have been and however full of knowledge and cunning, if it depend on an insane delusion, cannot be judged as if it were the act of a responsible person. Such cases as that of the man convicted at the Central Criminal Court last week of the murder of Mr. William Terriss doubtless cause many to think that the partially insane, who know what they are doing, should suffer; and this is the foundation of much of the criticism which so often arises when a criminal is recognized to be insane. The summing up of Mr. Justice Channell was on the well-known lines laid down in the Macnaghten case: that a person is responsible for any act if he knows the nature and quality of the act and if he knows that act to be a wrong act. He pointed out that distinct evidence of a diseased state of the mind must be produced, and that this disease so interfered with the mental action of the accused as to prevent him from recognizing that his act was criminal. He said that there was a unanimous opinion of the doctors that the prisoner was of unsound mind at the time he committed the act, but the jury must decide if the insanity was the cause of the crime. The jury after half an hour's deliberation, returned a verdict of guilty. They added that in their opinion the prisoner knew what he was doing, and to whom he was doing it, but that from the medical evidence he was not responsible for his actions. Their verdict made it evident that their feeling was rather in favor of punishing Prince as a criminal.

As was to be expected, the case has given rise to much criticism, and the lay press and the public generally are not satisfied. Still we think the verdict of irresponsibility was right. It requires a good deal of moral courage sometimes to give an opinion which is known to be in opposition to general feeling; but there can be no doubt that a medical man's duty when called in to give an expert opinion in such a case is to speak without any regard to the feelings of the public. That a man driven to an act by an insane delusion is to be considered responsible for that act is altogether unreasonable. Much has been made of the fact that since this crime was committed several other persons have threatened similar acts; but this would have been just as likely to have occurred if Prince had been condemned to be hanged; crimes lead to crimes, and this is well recognized. The medical evidence was clear, and no one can doubt that it was absolutely correct and impartial. — *British Medical Journal.*

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THE NEW AUTOMATIC REVOLVER.

Professor von Bruns, of Tübingen, a well-known authority on questions of military surgery, has published some interesting experiments with the new automatic revolver, which it appears is being adopted by nearly all the European governments. The experiments were made on pine wood, on plates of iron, on a living horse, and on portions of human corpses, at distances varying from 10 to 300 metres. The results were as follows: There was little difference between the effects on living and on dead material. The hole made is from five to seven millimetres in size, and decreases with the increase of distance; the aperture of exit is usually slightly larger than that of entrance. The effect of the projectile on the long hollow bones was exactly similar to that of the German infantry rifle at 1,000 to 2,000 metres. The bone was splintered in every case; in no case did the projectile remain in the bone. The track of the bullet invariably formed a smooth channel without shattering of the bone, and without bony *débris*. In the case of bullets striking the skull there was explosive action, that is, comminution of the vault, at a distance of 10 metres — corresponding to the effect of the infantry rifle at 1,000 metres — which decreased gradually up to 50 metres' distance. As regards the penetrative power, at 10 to 20 metres the projectile passed through two trunks, and only stuck in the third; it pierced pieces of pinewood 32 centimetres thick, and three iron plates each two millimetres thick. In all respects the new automatic pistol proved itself superior to the ordinary army revolver. — *British Medical Journal.*

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ABDOMINAL INCISIONS.

George Woolsey, M.D., sums up an excellent article in the January number of the *Annals of Surgery*, entitled, "Some Considerations on Abdominal Incisions," with the following conclusions:

(1) Abdominal incisions, except those in or close to the median line, should be obliquely transverse in order to parallel the nerves (and thereby also the cleavage lines of the skin) so as to avoid partial paralysis of the muscles, weakness of the abdominal wall, and a tendency to hernia.

(2) Intermuscular or even transmuscular incisions should be preferred to those in the linea alba or semilunaris, for in both the latter cases the cicatrix is less strong and more prone to hernia, and in the semilunar line the nerves are necessarily divided.

(3) In place of the median vertical incision the intermuscular incision near the inner margin of the rectus, or the trap-door incision around this inner margin, offers many important advantages.

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Correspondence.

THE COCAINE HABIT FROM SNUFF.

Boston, January 27, 1898.

Mr. Editor: Will you kindly allow me the use of your columns to briefly report the salient features of *one* case where a promising young life has been greatly injured, if not totally wrecked, and a family circle brought to grief by the unrestricted sale of nostrums containing cocaine.

About two years ago, while away at boarding-school, a young man from one of the families who look to me for medical advice, together with a chum of his, sought relief from a fancied or real catarrh in the use of "Birney's Catarrh Snuff," containing two and one-half per cent. of cocaine. The result was that, when the case was first brought to my knowledge and the full discovery of the state of affairs was made known, about three months ago, the young man was using from three to six bottles of this snuff daily, and was a confirmed victim of the cocaine habit. He had run up bills for this snuff to the total of about $600 at various drug-stores where apparently the greed of gain, in some cases at least, and in others ignorance that the apparently harmless nostrum contained a powerful poison, prevented the dealers from taking steps to stop the young man's ruinous career. The accounts, without any notice being given to the young man's family, were allowed to run along for several months, and in one case amounted to over $100, while another footed up between $80 and $90.

The young man is now away from home, at an expense of $50 per week, under treatment which must be continued for a period of five months before he can be trusted alone, and even then there is grave doubt in regard to the permanency of the cure.

I do not know what is the condition of his chum, although it is said to be worse than the one just related. Nor do I know whether others than these two contracted the habit. I am told that there is no law to prevent the unrestricted sale of this most insiduous poison, cocaine. It seems proper that new legislation should be obtained for the protection of the public. The matter will be brought before the Massachusetts Medical Society at the next meeting of the Councillors.

Reports of other cases bearing upon this matter would be important.

Very truly yours,
Dan'l D. Gilbert, M.D.

METEOROLOGICAL RECORD

For the week ending January 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S ..16	29.89	30	36	23	82	62	72	N.W.	N.W.	8	10	O.	C.	.02
M..17	30.38	18	23	14	82	57	70	N.W.	N.	11	6	C.	C.	
T ..18	30.52	26	35	16	78	80	79	W.	W.	6	10	F.	C.	
W..19	30.52	31	39	23	74	72	73	N.W.	S.W.	6	6	F.	C.	
T ..20	29.89	37	42	32	100	97	98	E.	W.	7	6	R.	O.	.86
F...21	30.00	40	45	34	77	87	82	W.	N.	13	4	F.	O.	
S...22	30.32	34	37	32	84	86	85	N.E.	S.E.	5	8	O.	O.	
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* O., cloudy: C., clear: F., fair: O., fog; H., hazy; S., smoky: R., rain: T., threatening; N., snow. † Indicates trace of rainfall ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, January 22, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	3,438,899	705	233	11.06	19.18	.14	2.52	3.22
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	461	147	13.42	19.14	5.06	5.28	.44
Brooklyn	1,160,000	—	—	—	—	—	—	—
St. Louis	570,000	185	34	9.72	16.74	—	5.94	1.08
Baltimore	550,000	173	57	8.70	12.76	—	2.32	5.80
Boston	517,732	195	52	3.57	21.42	—	1.53	.51
Cincinnati	405,000	122	—	5.74	22.96	.82	.82	2.46
Cleveland	350,000	82	28	6.15	11.07	—	3.69	1.23
Pittsburg	285,000	88	32	27.36	15.96	7.98	2.28	—
Washington	277,000	93	29	6.48	20.52	2.16	2.16	—
Milwaukee	275,000	—	—	—	—	—	—	—
Nashville	87,754	24	4	4.16	20.80	—	4.16	—
Worcester	105,050	32	10	6.26	28.17	3.13	—	—
Fall River	95,919	37	12	5.40	11.80	—	—	—
Lowell	87,193	34	10	11.76	20.58	2.94	8.82	—
Cambridge	86,812	28	9	7.14	—	3.57	—	—
Lynn	65,220	18	—	5.55	16.66	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
New Bedford	62,416	22	6	8.30	12.45	—	—	—
Lawrence	55,510	13	8	22.07	15.38	—	7.69	—
Springfield	54,790	29	6	6.90	10.25	—	3.45	—
Holyoke	42,364	17	8	5.88	35.28	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Salem	36,062	15	4	—	—	—	—	—
Brockton	35,853	—	—	—	—	—	—	—
Malden	32,894	7	0	—	—	—	—	—
Chelsea	32,716	7	1	14.28	14.28	—	—	—
Haverhill	31,406	12	2	8.33	—	8.33	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	8	3	—	16.66	—	—	—
Fitchburg	28,392	10	3	—	20.00	—	—	—
Taunton	27,812	12	2	8.33	16.66	8.33	—	—
Quincy	22,562	—	—	—	—	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	6	0	—	—	—	—	—
Everett	21,575	6	2	16.66	16.66	—	16.66	—
Northampton	17,448	—	—	—	—	—	—	—
Newburyport	14,794	5	1	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,518; under five years of age 728; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 250, acute lung diseases 447, consumption 300, diphtheria and croup 83, typhoid fever 43, scarlet fever 33, diarrheal diseases 33, measles 30, whooping-cough 11, cerebro-spinal meningitis 12, malarial fever 2.

From diarrheal diseases New York 10, Pittsburg 8, Philadelphia 4, Washington and Fall River 2 each, St. Louis, New Bedford, Springfield, Chelsea and Taunton 1 each. From measles New York 16, Philadelphia 7, Pittsburg 4, St. Louis 3. From whooping-cough New York and Pittsburg 3 each, Cincinnati 2, Baltimore, Cleveland, Cambridge, Lynn, New Bedford and Chicopee 1 each. From cerebro-spinal meningitis New York 7, Boston 3, Holyoke 1. From malarial fever Philadelphia and St. Louis 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending January 15th, the death-rate was 20.6. Deaths reported 4,432; acute diseases of the respiratory organs (London) 516, measles 225, whooping-cough 120, diphtheria 72, fever 42, diarrhea 34, scarlet fever 32.

The death-rates ranged from 12.2 in Huddersfield to 29.6 in Wolverhampton; Birmingham 22.2, Bradford 14.3, Croydon 13.8, Gateshead 17.1, Hull 17.9, Leeds 19.8, Liverpool 25.3, London 22.9, Manchester 20.6, Newcastle-on-Tyne 19.4, Nottingham 11.8, Portsmouth 14.8, Sheffield 18.9, Swansea 13.3, West Ham 17.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 22, 1898, TO JANUARY 28, 1898.

First-Lieut. Irving W. Rand, assistant surgeon, is relieved from duty at Fort Huachuca, Ariz., and ordered to Fort Duchesne, Utah, for duty.

First-Lieut. Charles E. B. Flagg, assistant surgeon, is relieved from duty at Fort Duchesne, Utah, and ordered to Columbus Barracks, O., for duty.

Captain Henry A. Shaw, assistant surgeon, will report in person at Fort Crook, Neb., for temporary duty at that post, and upon the arrival there of First-Lieut. Deane C. Howard will return to his proper station at Fort Snelling, Minn.

Captain H. C. Fisher, assistant surgeon, is granted three months and two days' leave, to take effect on or about February 1, 1898.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JANUARY 27, 1898.

Irwin, Fairfax, surgeon. To proceed to Marcus Hook, Pa., and inspect State Quarantine Station. January 22, 1898.

Smith, A. C., passed assistant surgeon. To proceed to Marcus Hook, Pa., and inspect State Quarantine Station. January 22, 1898.

BOARD CONVENED.

Board convened to meet at San Francisco, Cal., for the physical examination of officers of the Revenue Cutter Service. Surgeon J. M. Gassaway, Chairman; Passed Assistant Surgeon M. J. Rosenau, and Assistant Surgeon W. M. Jordan, Recorders.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, February 7th, at 8 o'clock. Dr. H. Newton Heineman, of New York, by invitation, will read a paper on, "The Treatment of Circulatory Disturbances at Bad Nauheim." The discussion of the paper will be opened by Dr. A. L. Mason.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

RECENT DEATH.

M. Jules Emile Pean, the eminent French surgeon, is dead. He was born at Château Dun (Eure-et-Loire), November 29, 1830, and practised surgery continuously in Paris for more than forty-five years. He was surgeon to the Saint Louis Hospital until 1892. In 1887 he was elected a member of the Academy of Medicine. Three years later he received the decoration of the Legion of Honor and in 1893 was made a commander. He was especially noted for his work in the field of pelvic surgery, and for his adoption and advocacy of the vaginal method of hysterectomy for fibroids and pyosalpinx.

BOOKS AND PAMPHLETS RECEIVED.

Case of Carcinoma of Descending Colon; Excision and Anastomosis; Recovery. By John H. Musser, M.D., and Thomas S. K. Morton, M.D., Philadelphia. Reprint. 1896.

Angina Pectoris: Its Relation to Dilatation of the Heart. On the Disappearance of Endocardial Murmurs of Organic Origin. By J. H. Musser, M.D., Philadelphia. Reprints. 1897.

The Clinical Value and Chemical Results of Using Professor Gærtner's Mother Milk in Children. By Louis Fischer, M.D., and Herman Poole, F.C.S., New York. Reprint. 1897.

A Modern Pathological and Therapeutical Study of Rheumatism, Gout and Gouty Arthritis and Allied Affections. By Edmund L. Gros, M.D., of the Faculty of Paris. New York, 1897.

The Present Status of Preventive Means against the Spread of Tuberculosis in the Various States of the Union Critically Reviewed. By S. A. Knopf, M.D. (Paris and Bellevue, N. Y.). New York. Reprint. 1897.

Appendicitis, Report of Four Cases. Craniectomies, with Report of Four Cases. Abdominal Incision for Ascites. Surgical Melange. Ligation of the Common Carotid Artery for Trifacial Neuralgia, with Experiments and Observations upon Dogs. By B. Merrill Rickets, Ph.B., M.D., Cincinnati, O. Reprints. 1897.

Outlines of Rural Hygiene for Physicians, Students and Sanitarians. By Harvey B. Bashore, M.D., Inspector for the State Board of Health of Pennsylvania. With an Appendix on the Normal Distribution of Chlorine, by Prof. Herbert E. Smith, of Yale University. Illustrated. Philadelphia: The F. A. Davis Co. 1897.

The Student's Guide to Medical Diagnosis. By Samuel Fenwick, M.D., F.R.C.P., Consulting Physician to the London Hospital, and W. Soltau Fenwick, M.D., B.S., Lond., M.R.C.P., Physician to the London Temperance Hospital; Physician to Out-patients at the Evelina Hospital for Sick Children. Philadelphia: P. Blakiston, Son & Co. 1897.

A Manual of Obstetrics. By H. F. A. King, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of Columbian University, Washington, D. C., and in the University of Vermont; President of the Washington Obstetrical and Gynecological Society, etc. Seventh edition. With 223 illustrations. Philadelphia and New York: Lea Brothers and Co. 1898.

Original Articles.

THE DIAGNOSTIC AND THERAPEUTIC VALUE OF TUBERCULIN AND ITS DERIVATIVES.[1]

BY A. C. KLEBS, M.D., CHICAGO, ILL., AND CITRONELLE, ALA.

Since Koch, on the 13th of November, 1890, startled the world with his celebrated communication, scientists and physicians have been eager to do their share in the development of the question arising. The "febrile reaction" which this discovery produced amongst the members of the profession and the laity and the disappointment of the world at large, after it was found that *the* remedy had still to be found, has but little affected a great progress in internal medicine, much greater than generally is recognized.

Although efforts in bacterio-therapeutics were made before Koch's discovery, the "Tuberculin Era" forms the corner-stone in a new direction of modern therapeutics. It is yet too early to speak with certainty of the therapeutic accomplishments in this line; but the various new facts which have enriched our knowledge and the results of the investigations following have enormous value and have considerably widened our horizon.

Speaking of tuberculin, we have first to agree upon what we understand by this term. There has been a great deal of misunderstanding on this point; and a great many observations, differing in their results, are probably due to the difference in the preparation of tuberculin.

We will first consider Koch's old tuberculin (crude), as that is the preparation we know best and as Koch's newest tuberculin shows essential differences.

Koch's original method of preparing his tuberculin, and the method generally adhered to still, is evaporation by boiling over the water-bath, of the ripe culture of the tubercle bacillus grown on a four to five per cent. glycerine bouillon to one-tenth of its volume. This method of preparation has been adhered to by most experimenters, often with more or less important alterations. If we reflect that the bacillus loses much of its virulency by artificial culture, it is evident that the tuberculin derived from a young culture cannot give the same results as that taken from a culture which has been grown artificially through several generations. This fact is probably the reason why the different tuberculin preparations on the market show different degrees of efficacy. In order to get uniform results it would be of great value to standardize the preparations by a previous animal test. This would greatly assist the comparison of different observations. As matters are now, such comparisons can be made only with great limitations, and a final judgment is almost impossible.

If we ask ourselves what tuberculin is, we are unable to answer in exact terms. The chemical and physiological characteristics have been carefully examined by Koch, Kuehne, Edwin Klebs, W. Hunter, Proskauer, Brieger and others; still, it is yet to be demonstrated what the active principle of tuberculin really is, and to give a plausible explanation of the remarkable reaction caused by it in tuberculous individuals.

In a paper on the value of this preparation for diagnostic and therapeutic purposes we cannot dwell on the yet unknown features in the action; we can only consider what we know through clinical observation. There are a great many points which merit close attention and a more careful examination, and in working them out we may arrive at the scientific basis.

The observation of the different effects obtained by the inoculation with tubercle bacilli of healthy guinea-pigs and of such animals previously infected led Koch to the discovery of tuberculin. Tuberculin therefore represented, in his opinion, an extract of the active principles of the bacilli and their culture. He regarded them as albuminoid toxins. The selective action of these toxins in tuberculous individuals was remarkable, but no satisfactory scientific explanation has been given for it yet. The general and local reactions represent the chief symptoms of its action. General symptoms such as chills, heaviness of the extremities, cough, etc., accompany the rise of temperature, which is very marked. We have the picture of an acute and short exacerbation of the process, which also can be observed on physical examination in pulmonary cases and which is manifest most markedly in cases of external tuberculosis, lupus, osseous tuberculosis, and also in glandular cases and others.

The practical application of the tuberculin test in bovine tuberculosis, especially developed in Massachusetts, has been rigidly carried out; and the almost unanimous opinion of all observers has established its immense value to the cattle-growers as well as to humanity at large. Much less has been done in this respect in human tuberculosis. A few clinicians only have adhered faithfully to the preparation and use it daily in their practice; all as a diagnostic test, some as a therapeutic agent. The possession of a reliable method to diagnosticate tuberculosis in its earliest stages is of the greatest value; and it is unfortunate that the great desire to find a "cure" in tuberculin has attracted by far the greatest attention to this part of its activity, while its diagnostic value has almost disappeared.

According to our present knowledge of tuberculosis, we can safely assert that a reliable diagnostic medium for the detection of early cases is of greater value than any specific remedy which we have or may yet discover. Tuberculosis will never, whatever means we employ, be definitively cured "in a hurry"; its pathological anatomy best teaches this. The marvellous cures reported at the time of the "Tuberculin Era," after six or seven weeks' treatment, belong already to the *curiosa* in the history of modern medicine. The time of incubation, when symptoms are not yet manifest, in order to give a name to the condition, the predisposition, which, not explained satisfactorily, is certainly existing in some form, is *the* period in this disease which merits our full attention. Here the whole organism is prepared, by heredity or other circumstances, for what is to follow, and what the *vox populi* calls consumption. The word "consumption" has done more harm to the successful treatment and prevention of the disease than the disease itself. The laity, and also a great many physicians, have the tendency to put consumption in the same category with what we regard scientifically as its last stage, that is, with great emaciation, fever, pronounced hectic, cough, voluminous expectoration, night-sweats, etc. People have a horror of calling that consumption which is not represented by these symptoms.

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[1] Paper read before the Boston Society for Medical Improvement, December 27, 1897.

The physician wishes to spare the "tender feelings" of his patient, and calls it by any other of those names of which our medical phraseology possesses such a great number. Since the discovery of the tubercle bacillus things have somewhat changed, expectoration is examined when obtainable; and, the bacillus found, the diagnosis is established.

The value of this diagnostic aid is evident, but it also has its drawbacks; chiefly because, if negative, it often induces too quick a judgment, which often needs revision. Furthermore, the presence of the bacillus in the expectoration does not signify by any means early tuberculosis; but, on the contrary, an already advanced stage. The bacillus does not reach the bronchi and there mix with the mucus without previous retrograde tissue changes; considerable degeneration of tissue, "breaking down," is necessary in order to eliminate bacilli from the diseased lungs. It is perfectly safe to say, when we find bacilli in the sputum in large numbers and after repeated examinations, that we have before us a case in which the disease has already developed for a longer period than the symptoms indicated.

Furthermore, we have cases in which there is no sputum at all, but with a decided suspicion of tuberculosis. I need only refer to certain cases of adenitis, scrofulosis, lupus and arthritis; cases which, in their clinical aspect are not necessarily typical, but which in regard to prognosis, if tubercular, are very different from other similar affections, and therefore modify entirely the remedial procedure, if we do not wish to take the standpoint that "nothing will help anyhow if tubercular." Such manifestations of the process are so frequently followed by a secondary pulmonary invasion, that they merit close attention for early and exact recognition.

There are other cases with only general marks, which draw our attention to a possibility of beginning tuberculosis, especially those cases of a latent process in early childhood on an hereditary basis. Undoubtedly this is a very frequent occurrence, but we have no direct method of insuring certainty in diagnosis.

We see there is yet a vast field which the discovery of the bacillus and its diagnostic applications has but little developed. When Koch's "lymph" went from hand-to-hand and his observation of its selective action on tuberculous cases was reobserved again and again, when the reactive changes were studied *sub cœlo*, as in lupus, everybody agreed that an important step had been made towards the discovery of a diagnostic for such cases, not accessible to other methods. The enthusiasm vanished with the disappointment in what Koch thought to be the more valuable part of his discovery — its curative properties.

If we analyze the complex of symptoms which constitute the tuberculin reaction we get the following picture: Sometimes within a few hours after the hypodermic injection of a sufficient quantity of tuberculin we observe a chill of more or less marked intensity, the point of injection becomes slightly painful, elevated above the surface of the skin and reddened; the pulse becomes quicker, often weak, sometimes irregular (in rare cases the pulse grows extremely rapid and collapse may set in); the cough, if present before, becomes more severe, and the expectoration larger in quantity; besides, there follows loss of appetite, tendency to vomiting, general indisposition, heaviness of the extremities and headache — in general, the subjective symptoms of an acute fever. These symptoms may be present in a more or less marked degree, or some of them wanting; furthermore, graver symptoms have been observed, especially after high doses, for instance, jaundice, diarrhea, vertigo, delirium and coma. Objectively we observe fever, increase of the physical phenomena in the lungs, râles where none were before; sometimes increase of dulness on percussion, and enlargement of the liver and spleen. Albumin in the urine may be observed sometimes; rarely casts (if present, they usually accompany hematuria). In the blood there has been noted an acute leucocytosis, with all the forms of leucocytes (Botkin).

After the infection, with the first general symptoms, notably after a chill, the temperature rises to a considerable height, but seldom remains at the highest point longer than one hour, regaining its former range after several hours, with a complete disappearance of the subjective symptoms. The dose of tuberculin sufficient to produce this rise and fall of the temperature does not create any (or only slight) symptoms in a healthy person or animal.

It has been claimed that this selective action is due to the fact that fever is produced easier in tuberculous individuals than in healthy ones (Rosenbach), that there is what Buchner calls a "latent irritation," which is revived by the injection of tuberculin. This may be correct; nevertheless, it does not explain the local reaction of tubercular tissue which we observe immediately in external tuberculosis, especially in lupus. Everybody who has seen this will remember it. We inject a dose of tuberculin distant from the tubercular focus, and after a short time we observe the inflammatory changes, which are very striking and absolutely limited to the diseased area. Affected glands become more or less painful and swell, joints also show signs of a local reaction. There is no doubt also that in the lungs the same reactive processes are induced. In lupus the numerous autopsies have demonstrated this, though we are able to suspect it by the increase of the auscultatory phenomena *in vivo*.

There is some difference in the intensity of the reaction in respect to the seat of the tubercular affection. It is the most intense in cutaneous (lupus) forms, less in the glandular, osseous and articular. The pulmonary cases hold about the middle place. Furthermore, we may regard it as a rule — and it is very important to note this — that the more advanced the disease, especially if pulmonary and complicated by considerable mixed infection, the less the resulting reaction. In very advanced cases of pulmonary tuberculosis we are often unable to produce any reaction, even with the doses which give decided symptoms and fever in healthy individuals.

Of greater importance still is the question if these reactive changes occur in other diseases. We have to admit that they do occur; but we shall see that this in no way affects the diagnostic value of tuberculin. It cannot be regarded as a diagnostic agent of absolute certainty; its specificity is limited; but we shall be able to make use of it most successfully if we take into account its limitations. We have to consider chiefly two diseases which have many points of resemblance with tuberculosis, namely, syphilis and lepra. Several reliable observers (Straus, Teissier and others) have noted local reactive changes in syphilitic lesions after the injection of small doses of tuberculin; changes always accompanied by a general reaction. In a number of cases there was no local reaction, while the general symptoms were marked. In lepra larger doses than in lupus are required to produce analogous reactive phenomena. A few observations of reactions in other than tuberculous pulmonary affections are published, but they by no means exclude the possibility of the presence of tuberculous foci.

When we know the limitations to the selective action of tuberculin, its value for diagnostic purposes then becomes evident, and it only remains to investigate its reliability as a test in tuberculous cases. In those cases which we can recognize by other more or less accurate methods its action is different in intensity, as already mentioned; we can observe a decidedly higher intensity in beginning cases of pulmonary tuberculosis, just as in lupus or in laryngeal disease where the smallest, most recently developed foci, which are very easily overlooked, show the most marked aspect of circumscribed inflammation. There are other cases in which, with our other methods, we cannot make a positive diagnosis; I mean especially the latent tuberculosis of children of phthisical parents, which form exists more frequently than is generally thought. In such cases we get a reaction quite often and are astonished, because generally there is no support of the diagnosis other than an "inherited disposition" or, as some insist, a probable direct inheritance. Here we often have children apparently in perfect health, and yet we obtain the marked reaction. On the other side, in very young children, especially in the new-born, it is extremely seldom that a reaction is obtained, even after the injection of doses which in healthy adults produce considerable fever (Schreiber, Kossel). This speaks very much against direct inheritance and for the frequency of early post-partum infection, most likely by means of the milk of a sick mother or cow.

Furthermore there are cases of accidental infection of healthy persons who have handled the cadavers of tuberculous individuals on the post-mortem table. I remember well the case of a laboratory servant of the pathological institute in Würzburg, who submitted himself to the test injection in order to prove its harmlessness in healthy persons. He showed a most marked and typical reaction. On closer examination we found on both his hands several wart-like excrescences which contained tubercle bacilli. A similar observation was made, if I remember rightly, in Leipzig by Tillman. He injected a medical student in apparently good health. The student reacted intensively, with swelling and soreness of the cervical glands. Examination revealed a similar "cadaver tubercle" under the chin. I have also seen cases with marked relative diminution of hemoglobin — in one case as low as 38 per cent., and with all the typical attributes of chlorosis.

In none of my cases have I been able to ascertain any signs suggestive of tuberculosis, except harshness of inspiration over one or both apices. In eight out of eleven cases no expectoration was obtainable, in three I got some mucous sputum, which contained nothing but mouth bacteria. In six of these cases I have been able to produce typical reaction with very small doses of tuberculin — five of them were of tuberculous issue, one doubtful. In none of these cases have I been able to verify the diagnosis of tuberculosis, the time being too short as yet. Still I quite agree with my friend, Dr. Alfred Worcester, that the suspicion of tuberculosis in such cases is so strong as to be almost a certainty. The tubercular infection of chlorotic girls, especially through the alimentary canal, takes place certainly much oftener than ordinarily supposed; the low percentage, sometimes total absence of hydrochloric acid from the gastric juice in such cases favors this possibility. There have been direct observations of tuberculosis of the mesenteric glands in chlorotic individuals which speaks in favor of this supposition of infection. Perhaps, as Dr. Worcester thinks, the glandular tuberculosis is primary and constitutes often what we name "predisposition to tuberculosis." The result in one of my cases seems to favor this theory of primary glandular infection, as I was able to observe a gradual increase of hemoglobin to normal when I immunized the patient to tuberculin by successive injections with tuberculocidin, not using any other medication.

In general, I can say that I have never seen a case reacting to tuberculin in which I could absolutely exclude all possibility of a tubercular focus and in which the suspicion was not supported by other general indications of tuberculous. I have never regretted this additional support of a general suspicion, as one erroneous diagnosis of tuberculosis does less harm than an entire oversight. It has often been claimed against the practical value of the tuberculin test that it reveals latent foci in cases in which the disease has come to an absolute standstill and in which the patient does not suffer at all from the disease. This is certainly true, but in some of these cases the disease will set in sooner or later with renewed activity, and the recognition of such latent processes, together with rigidly enforced preventive measures, will often obviate the danger threatening in the future.

(To be continued.)

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ACUTE DEGENERATIONS OF THE NERVOUS SYSTEM IN DIPHTHERIA.[1]

BY JOHN JENKS THOMAS, A.M., M.D.,
From the Pathological Laboratory of the Boston City Hospital.

(Concluded from No. 5, p. 100.)

Before taking up the discussion of the changes found in the nervous system in diphtheria, let us first see what has been found in the heart muscle in these cases of sudden death from heart failure during infectious diseases.

Oertel, Mosler, Leyden and Birch-Hirschfeld have described degenerative changes in the heart muscle.

Leyden found fatty changes in the muscle fibre and increase of the nuclei in the muscular tissue, infiltrations about the blood-vessels, and in two of his three cases areas of myocarditis. The vagus nerve examined in the third case was normal.

Rosenbach described waxy and granular degeneration of the muscle fibres, and also the presence of lymphoid cells, and infiltrations about the vessels, and in the interstitial tissue.

Unruh describes myocarditis in localized areas, and fatty changes of the heart muscle, and argues that in these cases the heart failure does not arise from changes in the nerves, because this is an early symptom, while those, with the paralysis produced by them, appear later. He asks why the nerve to the heart alone should be affected thus early, and not other nerves. He also argues that the cause is muscular because of the dilatation.

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[1] This paper will appear in the Medical and Surgical Reports of the Boston City Hospital for 1898.

Huguenin found granular and hyaline degeneration of the muscle fibres, increase of connective-tissue, and much increase of the nuclei with small hemorrhages. He speaks of parenchymatous and interstitial myocarditis, and endarteritis proliferans. The pneumogastric nerve and medulla he found normal.

Schemm describes fatty and granular degeneration of the heart muscle fibres, with swelling and increase of the nuclei, and a slight hyaline degeneration and atrophy. He states that the connective-tissue was often somewhat rich in cells, and in one case he found extravasations of blood.

Arnheim found only slight changes in the heart. In three out of eight cases there was cloudiness of a few of the muscle fibres, with no fatty degeneration and no areas of myocarditis. In one other case he states that there was myocarditis, the muscle in general being cloudy.

Rabot and Philippe describe granular degeneration of the muscular fibres of the heart, with a slight increase of the nuclei, and with small areas of inflammatory infiltration with lymphoid and connective-tissue cells, and some perivascular infiltration. They found no changes either in the peripheral nerves, or in the central nervous system, and conclude that the essential process in the heart is an interstitial one.

Romberg, in an important paper on the changes in the heart in various infectious diseases, reports eight cases of diphtheria. In these hearts he found albuminoid granulation of the muscle five times; marked once, moderate four times; fatty degeneration five times, always marked; hyaline, or waxy degeneration, was noted as present twice. He also found vacuolization, and enlargement and pigmentation of the nuclei. He found, moreover, in all eight cases, interstitial alterations, an infiltration of the connective tissue. The amount of infiltration varied, as did also its extent. He found, too, periarteritis, and rarely an infiltration about the ganglion cells of the heart. Hemorrhage was rare. In the eight cases he found myocarditis, marked twice, moderate twice, and slight four times; pericarditis, marked once, moderate twice, slight twice, and absent three times; endocarditis, marked three times, and absent five times.

Welch and Flexner speak of finding more or less intense fatty degeneration of the heart muscle with fragmentation of the nuclei of the muscle fibres.

Hesse found parenchymatous degeneration of the heart muscle, shown by the loss of the striations, cloudiness, vacuolization and the presence of fat. He also describes infiltrations with round cells of the interstitial tissue and about the vessels, as well as hemorrhages. He examined 29 cases. He says that the poisons of infectious diseases produce in all organs parenchymatous degenerations, but, in addition, alterations of the vessels play an important part. The latter are especially important, and may find their expression either in abnormal hyperemia, a weakening of the vessel wall, which leads to hemorrhage, or in an abnormal permeability for round cells, which leads to cell infiltration. In the heart muscle he thinks the most important factors are the dilatation of the small vessels, the hemorrhages and the perivascular infiltrations; but concludes that the heart failure in these cases of sudden death in diphtheria is due to poisoning of the heart.

Preisz, in one case of death from heart failure in diphtheria, found that the muscle fibres of the heart had lost their striations, and were granular; while the nerve cells, stained by Nissl's method, showed no changes.

Mollard and Regaud, in a series of experiments upon animals with the toxin of diphtheria, found in the hearts parenchymatous degeneration, as shown by loss of the striations of the muscle fibres, the formation of vacuoles, exudations from the muscle, and fatty degeneration, while the nuclei were swollen and vesicular. They considered the changes in the connective tissue to be secondary, and state that they found only an infiltration of leucocytes. They also describe degenerations of the muscle fibres of the vessel walls, and infiltration of the walls. They state that in acute and subacute cases they found no hyperplasia of the connective-tissue elements. They regard the infiltrations which they found as consisting of leucocytes, and state that this is secondary, evidently looking upon the process as one of repair, and the cells as phagocytic. They state that the amount of change found varied in the different individuals, and in parts of the same heart, a fact also mentioned by others.

Vincent examined a case of sudden death in diphtheria in which the fibres of the heart muscle showed no changes except a loss of striation. There was also an increase of the nuclei of the sarcolemma, and about the blood-vessels the "connective-tissue cells were increased." The blood-vessels were dilated. In the medulla the vessels were dilated, but there was no infiltration or hemorrhage, and no changes in the nerve cells. In the pneumogastric nerve the myelin sheath was thickened in places but there was no marked degeneration. The sympathetic nerve was normal. In the lower cervical sympathetic ganglia some of the cells showed granular degeneration. In the cardiac plexus he found marked changes. There was intense parenchymatous degeneration and absence of the axis cylinder. The capillaries were dilated, and the nerve cells were granular, vacuolated, and in some of them there was loss of the nucleus and nucleolus.

Thus we see that the changes in the heart in this disease vary somewhat in character and amount. Of the significance of the changes we shall have more to say.

Among the earlier writers on the changes in the nervous system in diphtheria is Dejerine. He found in 1878 a degenerative atrophy, characterized by increase of nuclei, fragmentation of the myelin sheaths in the anterior nerve roots, while the posterior roots did not seem changed. In the anterior horns of the gray matter of the cord he found fewer nerve cells than normal, and some atrophied cells, dilatation of the vessels, and increase of the neuroglia. The white substance was normal. He concluded that there was a parenchymatous neuritis, no changes in the posterior roots, and an inflammatory process in the gray matter, though he states that he did not find vacuolated and swollen cells, as he did in myelitis.

Leyden, in 1880, described the changes of a parenchymatous neuritis with excellent drawings, though not with especial reference to diphtheria.

P. Meyer, in the following year, examining the nervous structures in diphtheria, described extensive parenchymatous degeneration of the nerves, and slight changes in the nerve cells, consisting in an absence of the cell processes and poorly staining nuclei. The white matter was normal.

Arnheim, besides the changes in the heart muscle spoken of above, found cloudiness of the diaphragm and skeletal muscles. He found in all the nerves examined an extensive degeneration as described by Eichhorst, Leyden and Meyer. The perineurium and endoneurium were without changes. In most of the nerves there was a hyperemia of the nerve sheaths and of the endoneural vessels. In one case he found extensive capillary hemorrhages, both in the nerves and in the cord. In the latter they were almost exclusively in the neighborhood of the vessels of the gray substance, and at times close to the cells of the anterior horn. In the other cases he sometimes found hyperemia and hemorrhages in the peripheral nerves. The ganglion cells were normal. The cells of the vagus nucleus were normal. There were no changes in the white matter of the cord, or in the medulla. He sums up the changes found as (1) hyperemia and capillary hemorrhages in the peripheral nerves and cord; (2) slight inflammatory changes in the muscles; (3) marked parenchymatous and interstitial degeneration of nerve fibres; (4) negative results in nerve cells; (5) no systemic disease of the cord.

Hochhaus describes parenchymatous clouding of the muscles, most marked in the paralyzed muscles, less in the paretic ones. In the nerves he describes only slight interstitial changes, with increase of the nuclei, and dilatation of the vessels. The brain and spinal cord were normal. We can, however, neglect his statements, as most of the nerves were examined only when fresh, in salt solution, and only a few in osmic acid.

Bikeles, examining the spinal cord by Marchi's method, found degeneration in the posterior columns, and in the posterior nerve roots, and thinks he has found in this fact an explanation of the ataxia often seen in diphtheritic paralysis.

Cavazzani found more marked changes in the central nervous system. He describes in infectious processes a degeneration of the nerve cells with changes in the nuclei, such as vacuolization and atrophy.

Preisz, in speaking of the changes in the nervous system in diphtheria, describes a degeneration of the peripheral nerves and of the vagus, and in the cord microscopical hemorrhages, chiefly in the gray matter, and degenerative changes of some of the ganglion cells of the anterior horn. The white substance was normal, except in his second case, where he found quite a marked degeneration of the posterior columns of the cord.

Of experimental work upon the nerve lesions in diphtheria the most important is that of Babes, Martin, Enriquez and Hallion, and Crocq.

Babes states that in the cord and brain, besides hyperemia, general edema and slight softening, there could be made out numerous irregular diffuse red, softened areas. These were especially well marked in the lateral and posterior columns of the cord.

Martin found degenerations of the nerves in animals after repeated small doses of the toxins of diphtheria, and also after a single large dose. He describes a parenchymatous degeneration of the nerve fibres. The sheath of Schwann is affected first, becoming granular, and later breaking up, while the axis cylinder is affected later, first becoming attenuated at some point, and then breaking at this point, and disappearing beyond. He also states that different branches of the same nerve are often affected to a very different degree, and even the same fibre differently at different points. He found this process affecting the sensory nerves to the same extent as the motor ones. The sympathetic nerve was also affected. He found degenerations in the muscles, and states that this was "proportional to the degree of nerve change." The spinal ganglia, the cord, medulla and brain were found normal in all cases.

Enriquez and Hallion describe, as the result of experiments upon dogs, a vascular dilatation in the gray matter of the cord, with hemorrhages and myelitis, and myelitis of the white substance. There was also increase of the neuroglia, nerve fibres in various stages of destruction, granular nerve cells, and dilated capillaries. In addition, there was a parenchymatous generation of the nerve roots. They think this was myelitis of vascular origin.

Crocq, experimenting upon rabbits, describes the changes produced in the nerves as a granular condition, fragmentation and fatty degeneration of the myelin sheaths, and disappearance of the axis cylinder, with multiplication of the nuclei. This he found most marked in the anterior roots, and slight in the posterior ones. He also describes changes in the spinal cord. The nerve cells were swollen and stained poorly; the nuclei and processes had disappeared; there was proliferation of the neuroglia and atrophy of nerve cells, many of which had disappeared and been replaced by sclerotic tissue. The white matter was only exceptionally altered. In the medulla there was tumefaction of the cells in the lower part, while in the upper part they had remained normal. The cranial nerves were unaffected.

The cases reported in this paper were mostly cases of diphtheria, although a few cases of mixed infection and one of pneumonia have been added, as the nervous changes of one infectious disease are similar to those of others, varying more in degree, or in the liability to affect the nervous system, than in kind. The examinations again were not complete as to all parts of the nervous system except in a few cases, and the chief object of these examinations was to discover whether recent acute degeneration resulting in the breaking down of nervous structures into fat had taken place, and more especially in the peripheral nerves. In spite of the fragmentary character of the work, certain general conclusions seem warranted even at this point.

One of these is that the chief change of the nervous system in diphtheria is an acute degenerative process, chiefly parenchymatous, most marked in the peripheral nerves, affecting both the motor and sensory nerves. The myelin sheath is affected first, and later also the axis cylinder, generally without infiltration, or much multiplication of the nuclei. In this, our results correspond pretty closely with those of other investigators, both clinical and experimental, as Priesz, Martin and Crocq, as well as earlier observers, such as Meudel, Leyden and others. Nor do these results stand at marked variance with those authors who have found changes in the central nervous system, though hemorrhages and myelitis were not found, yet dilatation of the capillaries was observed, and the more marked changes certainly seem possible, though probably rare. The most marked change found in the central nervous system, and that in the brain, as well as the cord, was the presence of fat here, showing that the effect of the toxic substances upon the nerve structures is not confined to the peripheral nerves. These degenerations were diffuse, but, if anything, more marked in the posterior columns of the cord, as has been noted also by Bikeles; a fact difficult of interpretation unless we assume a less power of resistance to injurious influences in these nerve fibres than is found in others. Indications of the existence of such a fact are not wanting, as shown by the large number of diseases in which degenerative processes have been observed in this region, as for example in pernicious anemia, pellagra, leprosy and others. Perhaps this affection of the posterior columns may account, as Bikeles suggests, for the ataxia so often observed in diphtheritic paralysis. That the cranial nerves do not always escape the process affecting the nervous system so widely is also certain, as shown by the marked degeneration of the fifth nerve found in one case. These results agree with those of Martin, in that the posterior nerve roots were found fully as much affected as the anterior ones. In regard to the condition of the nerve cells one is not warranted in drawing any very definite conclusions from the results obtained by means of the stains used, but certainly there was no myelitis present, and no condition resembling anterior poliomyelitis such as Dejerine thought he had discovered. It seems quite probable, however, that some of the nerve cells would show changes, at least in their finer structure, where the nerve processes have suffered so widely.

The processes found in the specimens of heart muscle examined correspond closely to those previously reported by others. There was a parenchymatous degeneration of the muscle fibres, shown by loss of the striations, vacuolization, and fatty degeneration. An increase of the muscle nuclei was not present, though the nuclei were quite numerous; but this is due to the fact that the hearts examined were from children in whom, from the small size of the fibres, the nuclei appear to be more numerous. The nuclei showed no marked degenerative changes. The dilatation of the vessels was marked, and also the infiltration, both in the myocardium and in the interstitial tissue. This infiltration consisted mostly of small, round, lymphoid cells, with a few larger cells, the nature of which could not be accurately determined because of the methods of hardening used, — formol, and Müller's fluid. Certainly leucocytes played no important part in the process, contrary to the statements of Mollard and Regaud. Again, in agreement with other observers, these changes showed considerable variation in the different cases. The most constant was the interstitial process. The fact that changes were found, more or less marked, in all the pneumogastric nerves examined, seems to point to considerable influence upon the mode of death in the cases of sudden death. The objection of Unruh that this accident is an early one, and the paralysis a late one, does not hold, when we remember that sudden death may occur late in the disease, and the paralysis sometimes appears early, as was seen quite frequently in the cases reported in this paper. The view of Hesse, that the heart failure results from the effects of the poison of the disease upon the heart, rather than as a result either of the muscle or of the nerve degeneration, seems nearer the truth. We must ask, however, in what way the poison acts. It seems most probable that in such cases it acts through the nerve structures, interfering with their normal function, and that this may occur before degenerative processes have proceeded far does not lessen in any way the importance of their occurrence, but would rather lead us to place greater weight upon slight changes, where other obvious causes of death, as markedly degenerated heart muscle, do not exist. The variability of the amount of changes, both in the heart muscle and in the nerves, may point to a varying cause for these cases of sudden death, but the argument in favor of the disturbance of the functions of the nerve seems strongest.

To sum up, the changes in the nervous system produced by diphtheria are: (1) a marked parenchymatous degeneration of the peripheral nerves, sometimes accompanied by an interstitial process, and hyperemia and hemorrhages; (2) acute diffuse parenchymatous degenerations of the nerve fibres of the cord and brain; (3) no changes, or but slight ones in the nerve cells; (4) acute parenchymatous and interstitial changes in the muscles, especially the heart muscle; (5) occasional hyperemia, or infiltration, or hemorrhage in the brain or cord, in rare cases severe enough to produce permanent troubles, such as the cases of multiple sclerosis and of hemiplegia which have been observed. Finally, the probability that the cases of sudden death from heart failure in diphtheria during the disease, or convalescence, are due to the effects of the toxic substances produced in the disease upon the nerve structures of the heart.

BIBLIOGRAPHY.

Apolant, E. Hemiplegie nach Diphtheritis. Inaug. Dissert., Berlin, 1894.

Arnheim, G. Anat. Untersuchungen über diph. Lähmungen. Arch. für Kinderheilk., 1891, xiii, 461.

Auerbach. Ueber einen Fall von Hemiplegia cerebralis nach Diphtheria. Deutsch. med. Woch., 1892, xviii, 168.

Babes, V. Untersuchungen über den Diphtheriebacillen, und die experimentelle Diphtherie. Virch. Arch., 1890, cxix, 460.

Bikeles Zur path. Anat. der post-diphtheritischen Lähmungen. Arbeiten aus dem Institut für Anat. und Phys. der Centralnervensystems an der Wiener Universität., Wien., 1894, Heft. ii, 26.

Birch-Hirschfeld. Plötzliche Todesfälle nach Diph. Jahresbericht der Gesellschaft für Natur-und Heilkunde, Dresden, 1879, 26.

Buhl. Zeitschrift für Biologie, 1867, iii, 349.

Cavazzani. Riforma med., 1894, ii, No. 14; ref. in Centralbl. für allg. Path. und path. Anat., 1894, v, 992.

Charcot et Vulpian. Gaz. méd., 1863.

Crocq. Recherches expérimentales sur les altérations du système nerveux, dans les paralysies diphtéritiques. Arch de méd. experiment., 1895, vii, 507.

Dejerine. Recherches sur les lésions du système nerveux dans la paralyse diphtérique. Arch. de phys. norm. et path., 1878, 2me série, v, 107.

Dejerine et Barth. Arch. de physiol., 1880.

Donath, J. Ein Fall von diph. Hemiplegie. Neurolog. Centralbl., 1893, xii, 481.

Edgren, J. G. Ueber einem Fall von halbseitiger Lähmung nach Diphtheria. Deutsch. med. Woch., 1893, xix, 864.

Enriquez et Hallion. Myélite expér. par toxine diphtérique. Compt. rend. de la Soc. de biologie, 1894, 10me série, i, 312.

Frosch. Zeitschr. für Hygiene, 1893, xiii, 49.

Henoch. Vorlesungen über Kinderkrankheiten, 7te Auflage, p. 759, and Berl. klin. Woch., 1886, p. 538.

Hesse, B. Beiträge zur path. Anat. des Diphtherieherzens. Jahrbuch für Kinderheilk., 1894, xxxvi, 19.

Hochhaus. Ueber diph. Lähmungen. Virch. Arch., 1891, cxxiv, 226.

Huguenin, P. La miocardite infectieuse diphtérique. Revue de méd., Paris, 1888, viii, 790 and 995.

Jäckle, A. Hemiplegia cerebralis nach Diphtheritis. Aerztliche Mittheilungen aus und für Baden, May 13, 1891, 1892, xlvi, 75.

Klebs. Eulenburg's Realencyklopädie, 1st Auflage, iv, 167.

Krauss. Neurolog. Centralbl., 1888, vii, 480.

Leyden, E. Ueber Poliomyelitis und Neuritis. Deutsch. Zeitschr. für klin. Med., 1880, i, 387.

Leyden, E. Ueber die Herzaffectionen bei der Diphtherie. Zeitschr. für klin. Med., 1882, iv, 334; and Deutsch. med. Woch., 1882, viii, 405.

Martin, S. Chemical Pathology of Diphtheria. Lancet, London, 1892, i, 735; and Twenty-first Annual Report of Local Governing Board, London, 1891–92, Supp., 142.

Mendel. Zur Lehre von den diph. Lähmungen. Neurolog. Centralbl., 1885, iv, 128.

Meyer, P. Anat. Untersuchungen über diph. Lähmung. Virch. Arch., 1881, lxxxv, 181.

Mollard, J. et Regaud, Cl. Lésions du myocarde dans l'intoxi-

cation aigue par la toxine diphtérique. Annal. de l'Institut Pasteur, 1897, xi, 97.
Mosler. Arch. der Heilkunde, 1873, xiv, 61.
Oertel. Pathogen. der epidem. Diph. Leipzig, 1887.
Oertel. Deutsch Arch. f. klin. Med., 1871, viii.
Pierret. Gaz. des Hôpitaux, 1877, 13.
Preisz, H. Beiträge zur Anat. der diph. Lähmungen. Deutsch. Zeitschr. f. Nervenheilk., 1895, vi, 95.
Rabot et Philippe. De la myocardite diphtéritique aiguc. Arch de méd. experiment., 1891, iii, 646.
Romberg, E. Ueber die Erkrankungen des Herzmuskels bei Typhus abdominalis, Scharlach und Diphtherie. Deutsch. Arch. f. klin. Med., 1891, xlviii, 369.
Rosenbach, J. Ueber Myocarditis diphtheritica. Virch. Arch., 1877, lxx, 352.
Schemm, G. C. Ueber die Veränderungen der Herzmusculatur bei Rachendiphtherie. Virch. Arch., 1890, cxxi, 235.
Schönfeldt, A. Ueber multiple Hirn-Rückenmarksclerose nebst Angabe zweier Fälle bei Kindern nach Diphtherie. Inaug. Dissert., Berlin, 1888.
Seifert, P. Ueber zwei Fälle von Hemiplegie cerebralis nach Diphtherie. Neurolog. Centralbl., 1893, xii, 113.
Sharples, C. W. Cerebral Palsy of Childhood following Diphtheria. Medical News, Philadelphia, August 4, 1894, p. 124.
Sinkler, W. Article on "Athetosis" in Pepper's System of Medicine, vol. v, 458.
Thomas, J. J. Diphtheritic Hemiplegia. American Journal of Medical Sciences, April, 1896.
Unruh. Ueber Myocarditis bei Diphtherie. Jahrbuch f. Kinderheilk., 1883, xx, 1.
Vincent, H. Sur les altérations du plexus cardiaque dans la paralysie du cœur consécutive a la diphtérie. Arch. de méd. experiment., 1894, vi, 513.
Welch, W. H., and Flexner, S. The Histological Changes of Experimental Diphtheria. Bulletin Johns Hopkins Hospital, 1891, ii, 107.
Wright, J. H. Studies in the Pathology of Diphtheria. Boston Medical and Surgical Journal, 1894, cxxxi, 329 and 351.

Clinical Department.

TWO CASES OF RUPTURE OF VISCERA.

BY GEORGE H. MONKS, M.D. AND F. B. LUND, M.D., BOSTON.

THE two following cases of rupture of the viscera by contusion without penetrating wound of the abdominal wall are reported as illustrative of the extensive and fatal damage to the viscera which may result from such injuries, and of the imperative necessity of exploratory abdominal section in cases where there is a history of injuries of this character, and the symptoms indicate the possibility of rupture of the viscera. The first case also shows that extensive rupture of the viscera may occur without causing symptoms until extensive hemorrhage or extravasation of visceral contents has occurred, which may be delayed for several hours. Meanwhile the presence of multiple injuries to the extremities may result in symptoms which obscure and mask the presence of serious visceral lesions.

CASE I. Rupture of the bladder (intraperitoneal), rupture of mesentery, fracture of both bones of leg, multiple contusions. Suture of bladder, resection of ten inches of small intestine. Death.

H. K., thirty-two years of age, married, German. Was admitted to the service of Dr. Geo. H. Monks at the Boston City Hospital late in the evening of September 27, 1887. He had been drinking moderately during the evening, and had walked into a passageway between two buildings intending to urinate, and had fallen down a flight of six or eight stone steps, doubling his right leg under him. He found he could not get up, and felt faint and bruised all over. He did not vomit, he said, and had no pain in the abdomen. He had called for help, a police ambulance was summoned, and he was brought to the City Hospital.

On examination he was found to be a well-developed rather fat man, not intoxicated, although his breath smelt of alcohol. He had severe pain in his right leg, and was found to have a fracture of the right tibia and fibula about three inches above the ankle, with marked anterior displacement of the lower fragment of the tibia. There was an abrasion over the left olecranon process, and a contusion with ecchymosis over the flexor surface of the left forearm. There was no pain or tenderness of the abdomen. The leg was dressed by the application of a pillow and side-splints, and he was put to bed in the casualty ward.

The next morning about 8 o'clock he complained of pain in the abdomen and inability to pass urine. A soft-rubber catheter was passed without difficulty, and seven ounces of rather dark blood, but no urine, escaped. The pulse was 100 and weak, the patient was sweating and showed evidence of shock. There was slight tenderness over the lower abdomen, and dulness in both flanks. He was seen by Dr. George H. Monks, who advised immediate operation, which he at once performed under ether. A median incision extending from just below the umbilicus to the pubes disclosed edema of the sub-peritoneal tissue, and on opening the peritoneal cavity a considerable amount of urine escaped. A longitudinal rent, three inches long, was found extending vertically in the median line of the fundus of the bladder. A piece of small intestine, ten inches long, was found completely torn from the mesenteric border, black and gangrenous, lying in the bottom of the pelvis. The intestine was not ruptured, so that there had been no escape of intestinal contents. There had evidently been free bleeding from the torn mesenteric vessels, but at the time of the operation this had ceased, and the mouths of the vessels were plugged with clots.

The rent in the bladder was closed by two layers of silk sutures, the deeper (interrupted) including and inverting the mucous and muscular coats, and the outer (continuous) the peritoneum. The torn mesentery and separated intestine were excised and an end to end anastomosis performed by means of the Murphy button. The edges of the mesentery were united by a continuous suture of fine silk. The abdomen was thoroughly flushed with hot sterilized salt solution, gauze drains were carried down to the sutured bladder and intestine through the lower angle of the wound, and the upper part was closed by silk sutures. An aseptic gauze dressing was applied to the abdominal wound, a catheter was passed through the urethra and tied in, drainage was established by connecting the catheter by a rubber tube ending in a bottle suspended from the bed. The patient's condition was remarkably improved by flushing the abdomen with salt solution, and at the close of the operation, which lasted about an hour and twenty minutes, his pulse was stronger than it had been at the beginning.

On November 29th he was very comfortable. There was copious drainage of serum by the gauze wicks so that several changes of the dressing were required. Considerable bloody urine was drained by the catheter.

November 30th. The patient developed a severe cough and pain in the right side; the pulse grew weaker and more rapid.

December 1st. The gauze wick was removed and another inserted. Considerable drainage of serum from the dressing. Toward evening the pulse grew rapid and weak, the patient gradually sank.

He died December 3d at 3.55 A. M. Autopsy was refused.

Case II. Contusion of abdomen, with rupture of ileum and fecal extravasation. Enterorraphy. Death. Autopsy.

W. E., age forty-seven, married, carpenter; was admitted to the service of Dr. Geo. H. Monks, at the Boston City Hospital at 7 p. m. on November 20, 1897. At 4.20 p. m., while tending a circular saw in Cambridge, a piece of pine board about two feet long by a foot wide flew off from the saw with great suddenness and violence, an angle of the board striking him in the left iliac region of the abdomen. The blow caught him unprepared, so that the abdominal muscles were relaxed at the time. He felt faint at first, but was able to walk about, and the pain was slight for about ten minutes. After that time he was attacked by severe abdominal pain and vomiting. A carriage was called and he was taken to his home on St. James Avenue, Boston, where he arrived at about 5.15. There he had another attack of severe pain and vomiting and syncope.

Dr. W. H. Prescott was called, administered morphine, and advised his immediate removal to the hospital, where he arrived at 7 p. m. At 8 p. m. he was seen by Dr. F. B. Lund who found the following condition:

The patient was a tall, thin, delicate-looking man, slightly drowsy, and with contracted pupils (morphine). The skin was moist, face pale and eyes hollow. The pulse was 100 and of good strength, and the temperature 101°. There was marked rigidity of the muscles of the abdominal walls, and marked tenderness and muscular spasm on pressure over the lower part of the abdomen, especially in the left iliac region, where there was a slight contusion, with ecchymosis of the abdominal wall. There was dulness over the lower abdomen extending half-way to the umbilicus. Four ounces of urine, showing no tinge of blood, were drawn by a catheter. A diagnosis of probable rupture of the intestine was made, operation advised and immediately performed.

On making an incision from the umbilicus nearly to the symphysis pubis, the subperitoneal fat was found ecchymotic. On opening the abdomen there was an escape of fluid feces. Exploration quickly revealed an oval-shaped rent in the small intestine about one inch long by three-fourths of an inch wide, the long diameter parallel with the axis of the bowel, situated on the border of the intestine opposite the mesenteric attachment. There was a small rent the size of a pea, on the left side of the intestine between the larger rent and the mesenteric attachment. The edges of the larger rent were ragged and contused. A V-shaped piece of the bowel, including the rent, but not dividing the mesenteric border was excised, and the intestine united transversely by the Cushing right-angled continuous suture, involving the peritoneal and muscular coats, and inverting the edges. This suture was reinforced by several interrupted quilted sutures.

The loops of bowel in the vicinity of the rent were injected, the peritoneal covering was rough, and covered with yellow flakes of fibrin. These flakes were removed by sponging, the entire small intestine was allowed to escape from the abdominal cavity and flushed with salt solution, and the abdominal cavity was also washed out with great care, special attention being paid to the pelvis and lumbar regions. Drainage was provided by a glass tube and three strands of sterile gauze passed to the bottom of the pelvis, and the wound closed. The patient was under ether about an hour and a quarter, and the shock was slight.

For the first three days after the operation there was considerable abdominal distention, but the bowels moved freely on the second day. The temperature fell to normal and remained there, but the pulse continued rapid, and the skin was yellow and eyes hollow. A sufficient amount of nourishment was taken, and on the fourth and fifth day the patient was bright and hopeful. On the sixth day the abnormal distention had entirely disappeared. The abdominal wound was clean, and everything looked well except the rapidity of the pulse and the wretched facies of the patient.

On the 27th the pulse began to grow weaker and more rapid; there was slight tenderness over the lower abdomen. Rectal examination failed to reveal the presence of a suspected pelvic abscess. On this and the following day there was obstinate diarrhea, but no vomiting.

On the 28th slight distention of the lower part of the abdomen occurred, separating the sides of the wound at the lower angle and disclosing flakes of fibrin in the walls of coils of distended small intestine.

On the 29th there was a troublesome cough. The conjunctivæ were injected, the patient looked much worse, the pulse weakened in spite of stimulation, and death occurred at 4.45 p. m.

On the 30th Dr. F. B. Mallory performed the autopsy, at which the following conditions were found: The jejunum was much distended, and the intestinal coils in the lower part of the abdomen were covered with fibrinous exudation. The intestinal suture was in the lower part of the jejunum, and was perfectly tight. On gently tearing away the adhesions of the sigmoid flexure to the left ramus of the pubes an abscess cavity about the size of a walnut was found lying between the pubes and the left side of the bladder. This abscess communicated with the peritoneal cavity by a ragged opening. The walls of the abscess were sponge-like, and the interstices filled with pus, thick and brownish-yellow in color. The left femoral vein was occluded by a dark clot. There was a rather dark area of solidification in the posterior portion of the lower lobe of the left lung, and a small amount of pus in the bronchi. Cultures from the liver and kidney showed the presence of the staphylococcus pyogenes aureus and colon bacillus. The colon bacillus was found in the lung. The anatomical diagnosis was, sutured intestine, abscess between left ramus of pubes and bladder, acute fibrino-purulent peritonitis, broncho-pneumonia.

In this case death undoubtedly resulted from general peritonitis resulting from the bursting of the abscess between the bladder and pubic ramus into the peritoneal cavity. The blow which ruptured the intestine having fallen upon the left inguinal region, resulted in all probability in a subperitoneal hematoma between the left ramus of the pubes and the bladder. This hematoma undoubtedly became infected by the extravasated feces, and its gradual suppuration was the reason for the failure of the patient's pulse to fall to normal, and of his continued bad look. The seventh day was probably the date at which it began to leak into the abdominal cavity. The abscess was so small and so protected by the bony wall of the pubes as to give on abdominal palpation no evidence of its presence except slight local tenderness, which was attributed to the contusion of the abdominal wall, the temperature remaining normal up to within two days of death; and the patient's weak pulse and generally poor condition rendered exploration in the absence of localizing symptoms undesirable. No pus was at any time found in the bottom of the pelvis when the drainage gauze was changed.

The high position of the abscess rendered it inaccessible to rectal examination.

Sections of the sutured intestine made and stained by Dr. E. H. Nichols showed that firm union of the sutured edges had taken place by organized fibrous tissue, thus demonstrating that with sutured intestine permanent repair is completed within eight days.

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A CASE OF RUPTURE OF THE SMALL INTESTINE FROM CONTUSION OF THE ABDOMEN; RESECTION OF THE BOWEL FIVE HOURS AFTER THE INJURY; RECOVERY.

BY FRANCIS S. WATSON, M.D., BOSTON.

The patient, a young man twenty-one years of age, was riding on a bicycle on December 1st, when he was struck in the upper part of the abdomen by the end of the pole of an express cart coming in the opposite direction. He was thrown from his wheel, "the wind knocked out of him." He recovered himself soon, and was driven at once to the Boston City Hospital. The accident happened at half-past five in the afternoon, and about five hours after he had taken food.

On arriving at the hospital his only symptom was slight pain and tenderness at the seat of injury, and he felt so well that he asked to be allowed to go home. He was kept, however. Three hours later he began to have general abdominal pain and tenderness, which steadily increased in severity. The temperature rose quickly to 102° F, and the pulse to 100.

I saw the patient five hours after the injury occurred. At this time there was marked rigidity of the abdominal muscles, great tenderness and pain over the abdomen, definitely localized. Pulse and temperature as stated above. There was no sign of shock, and the patient's color was good. On the upper part of the abdomen on the left side a little below the free border of the ribs was a slight red ecchymosis, and lower down on the opposite side were two similar marks somewhat smaller. There was no abdominal distention.

The abdomen was opened by a short incision in the median line half-way between the umbilicus and the ensiform cartilage. In the first eight inches of the small intestine drawn out of the wound two rents in the bowel were encountered; the larger was complete and involved half the circumference of the gut. The smaller one was partial, involving the peritoneal covering and a part of the muscular coat only. Beginning peritonitis was present. The entire length of the small intestine was involved in the inflammatory process, the rest of the bowel was not yet affected. The peritoneal covering of the small intestine was thickened, infiltrated and opaque. Its surface was occupied in many places by flakes of grayish adherent lymph, and the blood-vessels were markedly congested. The mesentery presented corresponding appearances in many parts. There was no extravasation of intestinal contents to be found. The mucous membrane was everted and rolled out over the edges of the large rent, which were as sharply defined as though cut with a knife. There was no evidence of hemorrhage of importance. Five inches of the intestine, including in it both rents, was resected, and the bowel was then united by a fine silk suture applied after the manner of Dr. C. W. Cushing's right-angled suture. The whole of the small intestine was then rapidly examined and lightly washed with sterile saline solution at the same time. The peritoneal cavity was irrigated quickly with the same solution, and a considerable quantity of this fluid was left within the abdomen. The external wound was then sutured tight with one row of silk sutures.

The patient was fed by nutrient enemata for four days after the operation; broths and beef-tea were then given by the mouth until the sixteenth day, when solid food was begun. The patient had an entirely uneventful recovery, without developing a single unfavorable symptom. He was allowed to get up on the twenty-first day, and went home on the twenty-fourth, perfectly well.

This case illustrates once more certain important points in connection with the subject of contusions of the abdominal wall, the principal ones of which are these: the necessity of recognizing the frequent occurrence of serious lesions of the abdominal viscera resulting from severe contusions of the abdominal wall, without penetration; that the absence of shock and external signs of severe injury, rise of temperature or pulse within the first few hours after the injury, furnish no proof of the absence of serious intra-abdominal lesion; the occurrence at any time within several days even, after the injury, of abdominal pain and tenderness, rigidity of the abdominal muscles, abdominal distention (whether singly or in combination), and especially if associated with vomiting, rise of temperature and pulse or a subnormal temperature, should be taken as very strong evidence of rupture or perforation of the intestine or stomach, which is the most frequent lesion produced by violent abdominal contusions. If signs of internal hemorrhage and shock are present, the probability of this lesion or of rupture of the liver is, of course, greatly increased.

These facts cannot be too strongly insisted upon, for upon the early recognition of the true nature of the condition rests the patient's chance of being saved in the only way in which this can be done, namely, by prompt laparotomy. There should be no waiting to see if the patient will not be a little better to-morrow before summoning the surgeon.

The patient is, practically speaking, sure to die if not operated upon. The mortality of cases that are operated upon is high, but it is undoubtedly true that a considerable part of the fatal results have been due to delay. Were all the cases operated upon within the first few hours, as this one was, they would yield I am sure very favorable results.

The Antitoxins Sold in Paris. — The health authorities of Paris have discovered that, although there is a law to the contrary, certain so-called antitoxic serums are being made and sold in that city by unauthorized chemists. A so-called tuberculin offered for sale there has been recently found to be an inert solution, and it is feared that many of the other so-called antitoxins are likewise innocent of the properties which they claim to possess.

Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D.

(Concluded from No. 5, p. 113.)

HEMIANOPSIA.

The occasional occurrence of transitory hemianopsia in migraine is well known. Harris[9] has recently noted it also as a transitory symptom in four cases of unilateral convulsions, and, after a careful review of the whole subject, he draws the following conclusions: Hemianopsia, rarely binasal, more commonly lateral and left sided, with accompanying constriction of the remaining half fields, may occur as a temporary phenomenon in hysteria. Hemianopsia due to a vascular lesion of the cuneus, of sudden onset, may begin with marked or total loss of vision, probably from inhibition of the other centre. The cortical centres are not divided into centres for light, form and color, and hemiachromatopsia may be due to a lesion anywhere between the chiasma and the cortex. Quadrantic hemianopsia may sometimes be due to a lesion in the internal capsule. The macular region of the retina is invariably supplied with nerve fibres on the same plan as the rest of the retina, each side from the corresponding side of the brain; in all cases of transient hemianopsia the dividing line invariably passes through the fixation point; the cortical centre for the macular region in the cuneus, however, is less liable to complete destruction and recovers earlier than the rest of the centre. Cases of persistent hemianopsia where the dividing line passes to one side of the fixation point are to be explained by the escape or partial recovery of the macular centre, or by the education of a new fixation point. Hemiopic visual spectra, such as scintillating scotoma, etc., are due to a discharge in the cuneus, but more complex phenomena, such as faces, etc., are elaborated in a higher centre, possibly the angular gyrus, and they occur in the half field only from reflex irritation by a lesion near the cuneus or the optic tract. Double hemianopsia does not necessarily cause complete blindness, as there may be a small area of central vision indicating the escape or recovery of the macular centre. The hemianopsia in migraine is due to an epileptic discharge, which may originate near the centre in the cuneus and sometimes proceed no farther, causing simply a temporary hemianopsia; at other times it may cause a unilateral convulsion without loss of consciousness, and at others a typical epileptic fit. Transient hemianopsia in such attacks may last for twenty-four hours or more, and may be due to vascular softening adjacent to but not involving the visual centre or path; it is rare in ordinary Jacksonian epilepsy, and is not apt to occur unless the visual centre be slightly damaged or hypersensitive and prone to spontaneous discharge, as in migraine. Such transient hemianopsia may also occur in the unilateral convulsions of general paralysis or possibly in uremia. The auditory centre may in like manner be paralyzed through spread of an epileptic discharge.

ACROMEGALY.

In thirty autopsies upon patients with acromegaly Tamburini[10] has found that there was always a tumor of the hypophysis. This tumor is usually due to a simple hypertrophy of the gland or a complete adenoma of the organ in which the principal elements of the pituitary body are preserved. In the crania of twelve giants there was found an enlargement and an excavation of the sella turcica, which leads to the belief that in these cases there was always a tumor of the hypophysis. Pathological growth of the bones, either during the period of formation and evolution of the organism (gigantism), or during a more advanced period (acromegaly) is always accompanied with tumor of the hypophysis. The fact that we never find atrophy of the hypophysis in acromegaly and that we never find symptoms of acromegaly in atypical tumors of the hypophysis shows that the disease does not depend upon the abolition of function of this organ. The constant presence of tumor of the hypophysis in acromegaly and gigantism and the nature of the tumor (total hypertrophy or typical adenoma of the organ with preservation of its constituent elements) favor the hypothesis that acromegaly is due to excess of function of the pituitary body. He does not attempt in this way to explain the pathogenic mechanism of the disease and, comparing acromegaly to exophthalmic goitre, he believes in an indirect intervention of the nervous system.

HEMORRHAGE IN NEURASTHENIA.

Ausset[11] calls attention for the first time to hemorrhage from the mucous membranes without any appreciable lesion sometimes observed in neurasthenics. He has collected six cases, two of which came under his own observation, in which there were attacks of hematemesis at various intervals of time, sometimes of a considerable amount, the patient vomiting nearly a quart of blood in an attack. The patients presented typical symptoms of neurasthenia, the attacks often came on as a result of some exhaustion or excitement. In a seventh case there were uterine hemorrhages. The hemorrhages had come on at varying intervals through a period of many years and the most careful examination failed to reveal any structural disease of the stomach or uterus. Similar hemorrhages have not infrequently been noted in hysteria. The vomited fluid in one case was analyzed and found to be blood mixed with saliva and gastric juice. The patients had all presented other symptoms of vaso-motor and gastric disturbance such as are common in neurasthenia, and the attacks always followed physical fatigue, too severe intellectual work, strong emotion, great joy or profound chagrin. They were preceded by an indefinable malaise, an inexplicable disquiet, and a feeling of impending trouble, but they came on rather suddenly, without special warning, and unattended with pain or any special sensation. After the attacks the patient felt weak and the ordinary neurasthenic symptoms were worse, but in a few days they returned to their usual condition. The trouble seems to occur only in confirmed neurasthenia, but it is of itself of no bad significance and does not affect the prognosis. It is due, he believes, to a vaso-motor paralysis, but there is also some action of the glandular elements; there is a rupture of the blood-vessels in the capillary net-work beneath the glandular epithelium, and the blood mixes with the glandular secretion and is expelled with it through the excretory canal of the gland.

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[9] Brain, xx, 308, Autumn, 1897.

[10] Revue Neurologique, November 15, 1897.

[11] Revue de Médecine, September, 1897.

HYSTERIA IN CHILDHOOD.

Bruns[12] has recently published an important monograph upon this somewhat neglected subject. One of the chief differences between the hysteria of childhood and that of adult life is that the former often presents itself in a monosymptomatic form, as a paralysis, a contracture, or a limited spasm, and that sensory disturbances, especially anesthesia and the hysterogenous or hysterofrenic zones, are often absent. Paralytic conditions, contractures, astasia-abasia, aphonia, mutism, stammering and obstinate blepharospasm are important symptoms. Symptoms of motor irritation, such as tremor, chorea, grimaces, tics and spasm are not infrequent, and attacks of a psychical nature, delirium, somnambulism, chorea magna and obsessions are also of importance. The commonest sensory disturbance is hyperasthesia of the joints, but amblyopia and amaurosis are occasionally observed. Boys are as frequently affected as girls. The affection is most commonly seen between the ages of seven and fourteen, but it is not rare in children under six. The severer cases were more frequently seen in children from the country, especially from lonely and distant villages. Poverty and defective training favor the onset of the trouble. The influence of heredity is somewhat exaggerated, but it is important. Direct imitation of alarming symptoms of any disease which may come to the child's notice, together with defective training, plays a very important part. A nervous and hysterical mother may train a child badly, but the bad influence of an alcoholic father must not be ignored. The symptoms are often of psychical origin and are associated with defective volition; all of them may be produced more or less voluntarily, but loss of knee-jerk, degenerative atrophy, and similar "organic" symptoms form no part of uncomplicated hysteria; immobile pupils, fever, burns, etc., which have been described as hysterical symptoms, awaken a suspicion of deceit, but are not observed in children. The disregard of anatomical rules (paralysis on the same side as an injury to the head), the fact that the attacks are easily excited and as easily suppressed, the affection of only certain functions of muscles (as in astasia-abasia) point to the psychical origin of the trouble. It is often hard to draw the line between genuine hysterical symptoms and conscious simulation; to the natural tendency of hysterical patients to exaggerate is added the lively imagination of childhood. The prognosis is distinctly better than in hysteria of adults; not only the individual symptoms but the hysteria itself may be cured. Before the age of six, and after the age of twelve, when the influence of puberty begins to be felt, the prognosis is worse. The longer the symptoms last, and the oftener attempts at cure have failed, the less likelihood is there of cure. The question of treatment is very thoroughly considered. Separation from parents and surroundings takes of course the first place, but, in addition, special treatment is often necessary. Except for tonic and strengthening treatment the only forms of treatment that are of advantage are those that affect the child's mind. Judicious neglect is of great advantage, especially in all paroxysmal attacks. Strong faradism and cold douches are of benefit, partly because they are unpleasant to the child, and thus lead him to control his symptoms. These form a part of what Bruns calls the treatment by "surprise," the direct command to "rise up and walk," on which he lays much stress, pushing it even to the point in some cases of direct corporal punishment. Suggestion may be of value, but he has not made use of it in the hypnotic state.

Ilberg, in reviewing Bruns's monograph,[13] takes just exception to the more heroic measures, believing that they often do harm to nervous children. Suggestion without hypnotism, gentle but firm commands, and careful educational measures will give better results with far less danger. Strümpell has stated that the "surprise" method produces either miraculous cures or no cures at all. But miraculous cures are rare, and, if they fail, they do much harm. Bruns, while admitting the occasional good results of illegitimate medicine, in the line of faith cures, practically criticises his own "surprise" method, by advising against all forms of illegitimate treatment as liable to do more harm than good.

In a discussion upon the subject of hysteria in childhood at the meeting of German naturalists and physicians in Brunswick,[14] Werner was not disposed to lay the chief stress in causation of the trouble upon overwork in school and bad hygienic conditions, but upon defective conditions in the homes and improper management by the parents. Löwenthal had also noted that hysteria in childhood was more apt to be monosymptomatic. Insufficient sleep was often an important etiological factor. Böttiger regarded hysterical symptoms as always of psychical origin, and thought that pathological fatigue, which plays so great a part in neurasthenia, had nothing directly to do with hysteria.

Terrien[15] reports eighteen cases in Vendée, where he thinks it particularly frequent: eight of these children were under four years of age. He considers it identical with the hysteria of adults, except that on account of the age it is often hard to determine some of the stigmata. He also thinks that it is not a purely psychical affection. It may simulate various organic diseases, especially meningitis; in one village he noted an epidemic of hysterical coxalgia, due to imitation. It may also be associated with other nervous affections. The diagnosis, on account of the difficulties in examining young children, is much more difficult than in adult life. The individual symptoms are probably less tenacious than in the adult, but they are so readily reproduced and other symptoms are so easily developed that he doubts if the prognosis be really any more favorable. An alcoholic heredity plays an important part, as well as a neurotic heredity; in Vendée six to eight litres of wine a day seems a very reasonable amount for one peasant. The prevalence of superstition has also a marked effect in that region. Isolation he found rarely practicable. Hypnotic suggestion gave him good results, but owing to the superstitions of the peasantry he was compelled to abandon it, and, since giving it up, the results of treatment have been less satisfactory.

Type-writers' Cramp. — The *Lancet* quotes a statement of the *Phonetic Journal* that a correspondent of the latter is suffering from this new form of "professional impotency" induced by a too assiduous use of the type-writer.

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[12] Die Hysterie im Kindesalter, Alt's Sammlung zwangloser Abhandlungen aus dem Gebiete des Nerven-und Geisteskrankheiten, i, 5, 6.

[13] Neurologisches Centralblatt, October 15, 1897.

[14] Loc cit., November 1, 1897.

[15] Archives de Neurologie, October, November, 1897.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES O. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, December 27, 1897, Dr. A. L. Mason in the chair.

ANATOMICAL SPECIMENS.

Dr. F. S. Watson: As an anatomical specimen I would like to show this, which is the left lobe of an hypertrophied prostate which I removed yesterday by enucleation and which closely resembles a uterine fibroid. The patient from whom the specimen came was a man fifty-four years old, a physician who has had hematuria for about four years. The use of the catheter was necessary owing to the impossibility of emptying the bladder spontaneously. There was much bladder irritability. He was at one time acutely anemic from the repeated hemorrhages. I performed a suprapubic cystotomy and found large intravesical projections of the prostate on either side of the vesical orifice; of the two there were the upper portions of the enlarged lateral lobes; no hypertrophy of the median was present. On one part of the left lobe and the corresponding part of the neck of the bladder was an area of granulation tissue which was the source of the hemorrhages. The left lobe obstructed seriously the outflow of the urine and I removed it readily by enucleation. Shelling it out with the forefinger after splitting the mucous membrane and the capsule covering its intra-vesical portion.

Dr. A. C. Klebs, of Citronelle, Ala., by invitation, presented the subject of

THE DIAGNOSTIC AND THERAPEUTIC VALUE OF TUBERCULIN AND ITS DERIVATIVES.[1]

Dr. V. Y. Bowditch: I wish to echo the sentiments of the Chairman in extending the thanks of the Society to Dr. Klebs for his interesting paper. I only regret that one who has had a wider experience than myself with tuberculin was not selected to open the discussion, for my present views are largely the result of reading the arguments pro and con for the therapeutic and diagnostic use of the substance and not from personal knowledge.

It is more than distasteful to me to be or to seem in any way an obstacle to anything that marks true progress in medicine, and yet I find myself at present, regardless of the weight of argument in favor of the use of tuberculin, in a conservative, I fear in certain respects, in an ultra-conservative position. I hold myself, however, glad and willing to be convinced; but I am not yet convinced. A year hence I may feel differently.

In regard to the therapeutic use of the tuberculin I have more than once given my experience in a few cases at the Carney Hospital several years ago. After negative results, convinced of the dangerous character of the remedy in the doses then used and heeding the warnings of Virchow offered at that time, I gave it up, determined to wait until I should hear more from Koch before using it again.

With the "T. R." tuberculin used therapeutically I have as yet had no experience, because with the dangerous elements which Dr. Klebs has mentioned, namely, the presence of living bacilli and other bacteria in some of the preparations, I should be unwilling to use it without a bacteriologist at my elbow to examine every specimen to insure against possible disaster. Under suitable conditions, however, I may use the substance in the near future therapeutically.

Now, as to the use of the old tuberculin as a means of diagnosis. I am fully aware of and greatly influenced by all that has been claimed and done in veterinary work, but as to its use for the above purpose in human beings I find myself still in what I have called already possibly an ultra-conservative position. I have never used it for this purpose. It has seemed to me that if there were any grounds sufficient to cause doubt as to the existence of tuberculosis it was better to give the patient the benefit of that doubt and urge measures suitable for its arrest without going to the extreme measure (as it seems to me now) of injecting tuberculin to get a possible reaction. I am confining myself now to cases of pulmonary tuberculosis. I can imagine cases of surgical tuberculosis in which a definite diagnosis is of supreme importance relative to the treatment, and in such cases I might deem the measure justifiable.

One argument against its use, and I believe it should be given due weight, is the fact that in cases where some acute non-tubercular process may be present we may be utterly misled by getting a reaction from the presence of an old latent tubercular process, which, as are known by hundreds of instances at the autopsy table, may have remained latent always and the existence of which may never have been suspected during life. For instance, supposing a patient is suffering from a simple acute bronchitis and at the same time is feeling run down from possible overwork or other cause. Suspecting tubercular trouble, we inject with tuberculin and obtain a reaction from the presence, as I have said before, of some latent nodule which has no connection with the present bronchitis. We instantly conclude that it is all of one and the same origin. It is easy to see what serious results might follow. Even granting that it is better to "err on the safe side" and tell a patient that the trouble is tubercular and make him act accordingly (although we have really made a mistake in diagnosis), we all know what such a diagnosis means to the mental condition of the patient, and how it would affect possibly his whole future action.

Again, I wish I felt as absolutely sure as those who advocate its use, that "it can do no possible harm in small doses," at the same time that it is granted that it can wake up a latent process which seems to subside when observing the temperature chart.

I have spoken of the different opinions I have read, and upon which I base my present position. Only this summer in the discussions at the Medical Congress in Moscow, Ziemssen has pronounced against it therapeutically and as a method of diagnosis. Certainly we know what his standing is; and only lately I have read correspondence from Berlin in which the evidence in favor of its use both diagnostically and therapeutically apparently is that it is on the wane. How much weight can be given to those statements I cannot say; it is simply that they influence me in my position now.

Such, Mr. Chairman, are the thoughts which occur to me and although, as I have said before, I dislike more than I can express to take the position of obstructionist to any true advance, I feel in duty bound to express my doubts.

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[1] See page 121 of the Journal.

It has seemed to me that the impression could easily be gained in the community by reading the medical journals that this method was virtually accepted by all of those whose work lies in this direction. That there are those who do *not* believe in the free use of the remedy I feel it only right to state; and I hope to hear a full discussion to-night.

In conclusion, I can only express what I did in addressing the Boylston Medical Society the other night. The diagnostic use of tuberculin is something which, feeling as I do at present, I should not wish tried upon myself or upon a member of my family; and I question how far I am justified in using it therefore on others. I repeat, however, that I am willing and glad to be convinced of my error if it be so; and in the future it is quite possible I may be using the substance freely.

Dr. E. O. Otis: I wish to express my gratification at the exceedingly interesting and exhaustive paper Dr. Klebs has given us.

In regard to tuberculin as a diagnostic test, the best results, as a rule, are obtained in the treatment of pulmonary tuberculosis the earlier this treatment is begun; hence the desirability of an early diagnosis and the value of any means that will assist in this, provided it is not accompanied with injurious effects. Sufficient evidence has been adduced to show that tuberculin is of value as a means of diagnosis when others fail. Koch, the discoverer of the bacillus and tuberculin, has used this test in 5,000 cases in which physical signs were absent and bacilli could not be discovered in the sputum, with "most reliable and satisfactory results";[2] and in his latest communication[3] says that used in more than 1,000 cases for an early diagnosis of tuberculosis, in not a single case could the slightest indication of an unfettering and transplanting of tubercle bacilli be observed. Maragliano, Gaffie, Von Jaksh, Krause, Ruedi, Straus, Grasset and Wedel, Springthorpe and many others in Europe; Trudeau, Whittaker, Von Ruck, White, Sears, Douglas Head and others in this country, have found it of value in diagnosis. Springthorpe[4] says by its use one can differentiate pleurisy, tubercular adenitis and lymph-adenomata, strumous and rheumatoid affections, tubercular and malignant ulcerations of the larynx. It has been found also of value in surgical diagnosis.[5]

Sears and Netter obtained valuable results with it in cases of acute pleurisy. There are, however, in the opinion of many observers certain risks connected with its use. Fränkel, Von Leyden, Naumyn, Schultzer, Kast, Dettweiler, Virchow, Houseman and Ziegler are united in this opinion if the patient has tuberculosis. No one has found it harmful to non-tuberculous persons. Further, it does not seem to have been definitely settled how much to inject and what is the reaction.

Mouton[6] formulates four questions to be answered:

(1) The dose for a reliable test?

(2) What rise of temperature should be considered a reaction?

(3) Is it possible for non-tuberculous persons to react, and tuberculous not?

(4) Is there danger in its use?

As to the dose, the majority of observers have found from one-half to ten milligrammes to be sufficient for a test, and generally without harm. Maragliano used one, three, and ten milligrammes; Mouton, one to ten, generally only to five; Grasset and Wedel, from two-tenths to five-tenths of a milligramme; Springthorpe, five milligrammes; Straus, ten milligrammes; Koch, one and a half to ten milligrammes; Gaffie, in infants, one-twentieth of one milligramme; Sears, one to five milligrammes, generally one; White, ten milligrammes; Whittaker, five, ten and twenty; and Trudeau, one-half, one and two milligrammes.

As to the second question, What rise of temperature should be regarded as a reaction? Starting with a normal temperature, a sharp rise to 102.5° to 104° or over, accompanied with cephalalgia, articular pain, and anorexia, occurring within twenty-four to forty-eight hours, appears to be the reaction which is considered as definite, although there still exists a difference of opinion regarding this question. Trudeau looks for a temperature of 102.5° to 104.2°; Whittaker, 103°. Mouton thinks that non-tuberculous persons do sometimes react and tuberculous not; but can we say that they are non-tuberculous if they react? And yet one can readily believe that a small encapsulated tubercular focus, in a bronchial gland for example, might not give any reaction. On the other hand, we know that well-marked or advanced cases of phthisis sometimes do not react, especially with small doses of tuberculin; but here the conditions are different, for the infection then is generally a mixed one. Coghill,[7] however, says that in proportion to the extent and activity of the tuberculous lesion, the greater and more prolonged is the reaction to the same doses of tuberculin, hence the more advanced and active the pulmonary lesion the greater the necessity for proportionally smaller doses and longer intervals in its administration; this would apply rather to the use of tuberculin as a therapeutic means than as a diagnostic test.

The last question, as to the *danger* connected with this diagnostic use of tuberculin, is the most important one for us to decide, and the most difficult. It is one, moreover, upon which opinions differ widely. If the cause of the reaction is an acute inflammation where the tubercle bacilli are at work, then the fear that the bacilli may be rendered mobile and tuberculosis from latent sources to be awakened and the disease disseminated, aggravating already existing symptoms, is not altogether an idle one; and it is this fear which has and does deter the majority of clinicians from this use of tuberculin. Used in the cautious way in which Trudeau, for instance, used it in doses of from one-half to two milligrammes, there seems to be no sufficient evidence to show that such fears have been realized. Whittaker has used it in a large number of cases for the last five or six years, and has seen no evil results from it; many other observers have had the same experience.

The use of the tuberculin test in suspected tuberculosis in other portions of the body than the lungs seems to me to be perhaps even more valuable than in suspected pulmonary tuberculosis.

Another difficulty and perhaps danger in the test is a certain amount of uncertainty in the quality and strength of the tuberculin used; but this can be obviated by using only that made in a known laboratory and first tested on animals. Trudeau, I believe, makes his own tuberculin in his own laboratory.

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[2] Editorial, Medical News, March 6, 1897.

[3] Ueber neue Tuberkulinpräparate, 1897.

[4] Glasgow Medical Journal, 1896, p. 341.

[5] Sandberg: British Medical Journal, 1896, p. 1108.

[6] Munchen. med. Woch., 1897, xliv, s. 579.

[7] Lancet, 1895, p. 1219.

Tuberculin has also been found to give more or less of a reaction in other diseases, such as syphilis, malignant affections, lepra, actinomycosis; but this seems to be an exceptional result and practically can be disregarded.

In the therapeutic use of tuberculin, while the majority who were, at its discovery, enthusiastic in its possibilities, have abandoned its use in disgust, a minority have patiently worked on with it, and with suitable cases in small doses have obtained encouraging results. Such men are Kaatzer, Spengler, Thorner, Coghill, Springthorpe, Von Ruck, Whittaker, Quimby, Trudeau and many others. The unfortunate and disappointing results at first obtained were undoubtedly due to its use in unsuitable cases — such as mixed infection with hectic fever; when the lesions are general, as in acute miliary tuberculosis or when they have assumed a rapid evolution; cachexia; amyloid degeneration; hemorrhage — and also to too large doses. The dangers seem to depend upon either a general intoxication or too intense local reaction. The only proper cases for its use are now understood to be pure localized tuberculosis with little or no fever — the incipient cases. Its action, according to Koch, is in producing an inflammatory irritation of the tissues about the tubercle, whereby death of the bacilli is effected. It is not now believed that its chief curative effect depends, as Koch originally maintained, upon necrosis. When one considers that Koch's original beginning dose was one milligramme or more, and that it has rapidly increased to 100, or even more milligrammes, and that this maximum dose was reached in a month or six weeks, and further that the remedy was used in these heroic doses in all sorts of cases, it is little wonder that such dire results followed. Koch now advises a beginning dose of his new T. R. tuberculin of one-five-hundredth of a milligramme, and the maximum dose twenty milligrammes.

Those experimenters who have continued the use of tuberculin and have obtained definite and favorable results from it, all begin with small doses, generally one-twentieth of a milligramme, and gradually and slowly increase. For example, Thorner begins in all cases with one-twentieth of a milligramme, followed by an increase of one-twentieth every other day until half a milligramme was reached. The increase was then made, one-tenth of a milligramme at a time at similar intervals, until one milligramme was reached. At this point, patients who showed fever were excluded from treatment. In other cases the injections were made twice a week, the increase being one-fifth of a milligramme until two milligrammes were reached, when an increase of half a milligramme was made until five milligrammes were given; the increase was then steadily advanced according to the condition of the patient, not giving higher than fifty milligrammes. Occasionally pauses for a few weeks were made, and then the treatment resumed, beginning with one milligramme and increasing as before but more rapidly. Used in this way, with properly selected cases, the results have at least been sufficiently encouraging to warrant further and continued trial.

As Kaatzer says, it is a harmless and useful remedial agent, and its curative properties are lasting. Whittaker still more emphatically says that tuberculin remains as yet the only radical address, and that the estimate of its value will increase, and its best results will be obtained in the decades of the new century; and he adds that in the dose of one-twentieth of a milligramme it is entirely free from danger.

It is interesting to note the results of animal experimentation with tuberculin, as made by Koch, Kitasato, Pfuhl, Trudeau and others. Koch, in his latest communication, says that he has succeeded in immunizing so completely a large number of guinea-pigs that they withstood repeated injections of virulent cultures without becoming infected: and in those guinea-pigs which after tuberculous injection received injections of T. R., without exception regressive changes were found in all organs that were already tuberculous when the treatment commenced.

It has been noted by Hance, Loomis and others that those who improve under the use of tuberculin are not so liable to relapse as those who improve under the ordinary hygienic treatment.

In view of the experience and results of the many careful and trustworthy phthisic-therapeutists who have from the first and still continue to use tuberculin to their own satisfaction, those who oppose its use, possibly with some prejudice, may pertinently ask themselves this question of Trudeau's:[8] "Are we in the future to cast these bacterial products aside and rely entirely on a favorable environment, and our efforts to be directed solely to improving nutrition, as in the past, or may we yet hope that with an enlarged knowledge of these complex products and their effects, a substance may yet be produced free from danger to the patient, and capable of staying to a greater or less degree the ravages of a disease against which our best directed efforts are at present too often of no avail."

Akin to this subject it may be of interest to state that through the kindness of Professor Ernst who procured the serum for me, and with the assistance of Dr. W. H. Smith, I am now experimenting with the anti-streptococcus serum in advanced cases of phthisis where the infection is a mixed one and the streptococcus exists. If it should become possible by this means to reduce the infection to a simple bacillary one, then it would seem that tuberculin could be used in these cases also, as suggested by Dr. Smith, with a prospect of favorable results.

Dr. A. Worcester: I have had some experience the last few years with the use of tuberculin and its modifications as a diagnostic agent and also as a therapeutic agent. I want, with all deference and respect for Dr. Bowditch, to protest against his arraignment of tubeculin as a diagnostic test because it might let in the light. I cannot think that is sound. Even if that latent nodule of which he has spoken might possibly remain latent and unknown throughout the life of that patient, he certainly will admit there are equal chances it would not remain innocuous. For myself, or for the body of any one dear to me, I hope I may never be unwilling to know so far as science can tell me what the pathological condition really is. If the use of tuberculin as a diagnostic test shall be proved to be injurious, I am willing to abide by that proof and am willing to give it up if its injurious effects shall seem in any way equal to the positive advantages that come from the certainty that it gives us. But I have not seen any harm from it. I have seen immense benefit from its use, in that it has relieved anxious families who feared that there was latent tuberculosis in their loved ones. We cannot, gentlemen, overestimate the advantage of such a negative; and how else can it be obtained? Dr. Klebs referred to its use in distinguishing the latent tuberculosis or incipient tuberculosis in persons supposed to be suffering from chlorosis. I have had such patients. I was unable to make the diagnosis of tuberculosis otherwise, nor was I able to relieve them except temporarily. Tonics and change of air would give a little help, but down they would drop again. On applying this test and discovering tuberculosis I could then treat these patients properly.

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[8] Transactions of the American Climatogical Association, 1892.

I disagree with the reader in thinking that tuberculin is of much more value as a diagnostic than as a therapeutic agent. I have no knowledge of what other men have done beyond the little I have seen with my own eyes. As I have several times reported to my colleagues and friends in this State, I became convinced when in the wards of the Charité that tuberculous patients were being cured there. There was a very noticeable difference in the patients there from those I had the opportunity of seeing in other hospitals devoted to the treatment of tuberculosis. I consider it the greatest fortune of my life that I had the chance of studying the cases there and the administration of tuberculin. On my return two and a half years ago I determined to take hold of tuberculous patients in earnest and begin what might be an imitation of the work done in the wards by Brieger. I thus date my own encouragement and peace of mind in the thought of this disease. Of course, any man is liable to overestimate the good of his work; but I ask you, gentlemen, if in your treatment of tuberculosis you have any reason to overestimate what advantage your treatment may have effected. Is there not, as regards tuberculosis, a wellnigh universal pessimism in the profession, and is it not rather rare that a man is glad to meet tuberculous patients and perfectly confident of his ability to do something for them? I have had but few cases of incipient tuberculosis. Most of the patients that have fallen into my hands, who have been willing to be treated by tuberculin or its modifications, have been cases of advanced tuberculosis referred to me by physicians after they were unwilling to do anything for them. I have seen remarkable results in cases of tuberculosis supposedly so advanced that there was little encouragement. Some of the gentlemen here present were kind enough, one year ago and two years ago, to examine some of these patients, and to give a prognosis to the effect that there was no possible chance for their recovery. Some of these patients have died, but some who were then sick in bed have since been discharged from the hospital and are doing their own work, earning their own living, perhaps taking care of their own children.

As regards the danger from administration of small amounts of tuberculin, I can show patients to whom I have given nearly 100 grammes of tuberculin; and if there is danger in one milligramme there ought to be some ill effect in a patient who has had 100 grammes injected hypodermically. As it is plain to me that it is of diagnostic value, so it is equally plain that it is of great value as a therapeutic agent. These are my reasons: I find it possible to immunize a patient with tuberculin; a patient who at first reacts to a milligramme can be immunized so as to receive one or two decigrammes daily without reaction; and I have not in a single instance where that immunity has been obtained failed to see a corresponding gain in the physical signs and the general condition of the patient. In the cases of advanced tuberculosis of course it is not possible to immunize, not possible to give tuberculin except in those cases where the fever runs low. I do not give tuberculin where the temperature rises above 100°. Where the temperature is higher I have given the modified tuberculins, and after varying periods of time I have found such patients immunized to tuberculin itself. I feel much indebted to Dr. Klebs and his father for having during the last two or three years kindly on many different occasions devoted hours and even days to the study of my patients and for giving me most helpful advice concerning them.

Dr. H. F. Hewes: In July and August of this year I treated four cases of pulmonary tuberculosis with Koch's new tuberculin, T. R. A full description of these cases and of the immediate action of the tuberculin was given in the *Boston Medical and Surgical Journal*, September 9th. The period of something over four months which has now intervened since the completion of treatment has proved a sufficient interval for passing a judgment on the efficacy of the tuberculin treatment in these cases. The treatment was given according to the method advised by Koch, the dose being doubled every second day up to 20 milligrammes.

The first case was a woman, twenty-three years of age; duration of symptoms eight months. She had been under my treatment two months before receiving tuberculin, and had been improving somewhat. The physical examinations showed areas of consolidation at the apices of both lungs; bacilli in the sputum in large numbers. The evening temperature averaged between 99° and 99.5° F. The patient took the treatment without showing any untoward reaction and felt much better during and at the end of treatment than she had felt formerly. She, however, lost seven pounds in weight during the treatment, and the physical signs were unchanged. Bacilli still present in the sputum. One month later, the condition being somewhat improved, she was given a single dose, 20 milligrammes. No reaction followed and the patient continued to improve somewhat in strength and general condition. At present, something over four months after the treatment, her condition holds its own. The cough is still troublesome and physical signs are absolutely unchanged, the bacilli quite as numerous in the sputum as before treatment. She had regained her weight and about four pounds more.

The second case was a man whose symptoms dated back something over two years. He had been very ill just before treatment, but had begun to improve. It was not a suitable case for treatment with tuberculin, T. R.; but as the patient was very earnest for the treatment, it was given him. The physical signs showed consolidation and cavity formation in the upper two-thirds of the left lung, much emaciation, tubercular ulceration of the left ventricular band of the larynx. Temperature 99.5°. Bacilli present. The patient received the tuberculin up to 30 milligrammes. After the first week of treatment he had much lassitude and weakness, and seemed much worse than before. At the end of treatment he was decidedly worse, and continued to fail for the next month. He lost twenty pounds and at the end of the month was obliged to take to his bed. One month later he died.

The third case was a colored woman. Symptoms dated back three years. Temperature 98.5°. Bacilli present. This patient had improved under the dietetic treatment for the nine months previous to tuberculin treatment. The treatment was interrupted by two distinct reactions consisting of a chill and rise of temperature and other symptoms of malaise. The patient felt much worse during treatment than formerly, and at the end of treatment she felt and was a wreck. During the month after treatment she failed steadily, and I feared that she was going to die. Since that time, however, she has begun to improve, and for the last two weeks she says that she has felt about as well as before treatment. Signs unchanged. Bacilli present.

In the fourth case the symptoms dated nine months. Consolidation at left apex. Temperature 99°. The case improved considerably under treatment. She felt better and went back to work. One month after completion of treatment she had a large hemorrhage with pain over the left side over the area of consolidation. Since the hemorrhage she has been much better and gained eighteen pounds. Signs of consolidation still present and bacilli still numerous.

This is a very brief survey of the cases, but enough I think to enable one to draw some conclusions as to the results of the treatment in these four cases. In none of the cases is there any evidence of eradication of the diseased condition. In two of the cases there were some signs which might suggest that harm was done by the treatment. The second case certainly had a tremendous loss in condition. He probably would not have lived through the winter, I think, under any circumstances; but the treatment certainly added to the discomforts of dissolution, if it did not hasten that process. In the third case there was much temporary loss, but the patient has now regained the condition present before treatment. The fourth case seemed improved, but there was pulmonary hemorrhage one month after treatment.

These results are no argument against the use of tuberculin in incipient cases. These cases are not of the type which Koch recommends for treatment, and had not the benefit of hospital care during treatment. In their character and condition, however, they do represent the type of case which is most common in our hospital work, a type for which we much need a remedy. I think the results in these cases would not encourage us to seek that remedy in tuberculin T. R.

Dr. F. I. Knight: When requested by the Secretary to say something on this paper I declined to take part in the discussion, because I felt I had not sufficient personal experience; and for that reason I do not wish to say anything now, but I would beg gentlemen who are going to report on this subject to give us more definite facts and not general impressions. If Dr. Worcester the next time he comes in would bring such a record as Dr. Hewes, for instance, it would be very much more satisfactory; not that I doubt his judgment, but we want exact details of cases.

Dr. Mason: I think at the City Hospital there has been no great conservatism about the use of tuberculin for diagnostic purposes. Little use has been made of it therapeutically for various reasons. Many of the patients come too late to be suitable subjects for this method of treatment. I mean to say since the first year in which Koch's tuberculin made its appearance, when many cases were treated, early and late, with some disastrous results, as we all remember; but for diagnostic purposes we have found it useful. I have brought three charts out of a considerable number as showing the reaction in non-febrile cases. In one the temperature was below the normal, the very striking reaction, 6° F., occurring after what, perhaps, might be considered by some of the speakers a large dose, that is, five milligrammes. Smaller doses I found were not efficacious always for a positive diagnostic reaction, so that I resorted to five milligrammes as the first dose, and usually with satisfactory results.

The first case was that of a young girl with supposed tubercular peritonitis with little or no fever, pain in the abdomen, very slight effusion, if any, and doubtful diagnosis. The tuberculin test gave such a positive reaction that she was operated on at once by laparotomy and eventually left the hospital greatly improved. I have not heard from her since.

Another case was one of tubercular pericarditis in the service of Dr. Williams, a man in whom the reaction was almost dangerous from the severity of the symptoms. He died subsequently from pulmonary tuberculosis.

The third case illustrates one of the points referred to by Dr. Klebs, the striking reaction that occurs in the syphilitic. A girl with abdominal effusion, doubtful diagnosis, thought to be probably cirrhosis of the liver, although she was not addicted to the bottle, presented this very marked reaction from tuberculin; and the abdomen was opened. There was no tuberculosis of the peritoneum. Iodide of potassium was freely given, but she died about a year after; autopsy showed syphilitic induration of the liver, with gummata. Probably that explains the reaction.

These are a few out of quite a number of cases that have been treated at the City Hospital by Drs. Williams, Sears, Jackson, and, I think, most of the physicians. It appears to me that there is no dread of this material as a diagnostic agent if given in suitable cases.

Dr. E. O. Otis: I should like to ask Dr. Hewes if in his four cases he found the streptococcus in the sputum; and I should also like to ask Dr. Klebs and Dr. Worcester if they use tuberculin in mixed infection in which both the bacillus of tuberculosis and the streptococcus are found in the sputum.

Dr. Hewes: I found streptococci in marked numbers in none of my cases, and there was no evidence of mixed infection that I could make out. Two cases showed no pyrexia at any time, and the other two showed as the highest temperature before treatment 99.5°. The bacillus of tuberculosis was practically the only organism I found in any numbers in the sputum. In my experience of the use of tuberculin for diagnosis in 18 cases, I have seen no results which would prevent me from using it for this purpose.

Dr. H. F. Vickery: About the dose to inject for diagnostic purposes, I have heard the objection made to a small dose, that it that fails and after some days you give a larger dose, you give it to a patient who has got used to the medicine; so that there is a certain advantage claimed from giving a pretty fair-sized dose the first time you give any. I should like to ask Dr. Klebs when he closes the discussion to speak on that point, whether that objection is of any account. About the giving of tuberculin for a test I had *a priori* exactly the unfavorable opinion Dr. Bowditch had; but I have yielded to the overwhelming evidence of the harmlessness of the procedure. I have personally seen a good many cases injected with tuberculin without ill effect.

Dr. Klebs: In reply to Dr. Otis's question whether I use tuberculin in cases of mixed infection I wish to answer in the positive in cases of double diagnosis, in general we must admit that we know very little about this mixed infection. When we do not make cultures of the streptococcus we do not know whether it is a virulent type or not, the simple presence of streptococci in the sputum allows no conclusion. In typical cases of mixed infection I think there cannot be great advantage from the use of tuberculin.

In answer to Dr. Vickery's question, the objection he mentions is a real one; and therefore I mentioned in this paper that when we gave a test injection we begin with a small dose and wait four or five days to overcome the immunization produced by this dose and then we get just the reaction as before.

I quite agree with Dr. Bowditch as to his conservatism and I think we have to be conservative; but I do not wish to understand by conservatism not to try a remedy at all. I think we have to go very cautiously forward in the use of a preparation we know can be of danger, but as we have ways to avoid it, our conservatism must not hamper legitimate progress.

As to whether the test is absolutely certain in cases of tuberculosis. I have said it cannot be an absolute test; but taking into account the two possibilities, syphilis and lepra and its limitations in general, we can draw conclusions very easily.

As to the dangers of the preparation, Dr. Otis said that Virchow, Houseman, Ziegler and others are of the opinion that there are risks connected with the use of tuberculin. It should be borne in mind, however, that these men are pathologists, and drew attention to certain risks at a time when the large doses were in use. We have yet to hear of similar results in recent times. After repeated injections there may be a danger. As mentioned, I have noted albumin in the urine after repeated injections.

As to the streptococcus serum, I have tried it in a few cases, from the theoretical point of view that, if we have mixed infection, especially pronounced hectic, it would be very agreeable to overcome it. I have not found any advantage from its use.

I believe that the general practitioner is a much better judge of any *remedy* in tuberculosis than we who do work in institutions.

Dr. Worcester spoke of immunization to tuberculin. Now if you immunize a patient to tuberculin, you put him in a somewhat artificial condition in which he does not react to tuberculin for some time, but tuberculin immunity does not mean cure and after a certain time you get again the reaction to tuberculin and then we have to begin again.

As to the Charité in Berlin, that is an admirable institution, and I would not say anything against the work which Brieger has done there, but I think it is not the ideal way of disposing of the tubercular poor. I don't think it is very hygienic. Then, too, those cases cannot be followed, and many of them go out and die later somewhere in the east of Berlin, being previously reported cured or improved.

The Practice of Medicine in Arizona. — In March, 1897, Arizona passed a law stipulating that all applicants for licenses to practise medicine in that Territory must not only possess a degree from a reputable medical school, but must also pass an examination before the Territorial Board of Medical Examiners.

THE MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A stated meeting was held at the Medical Library, Boston, on Wednesday, February 2, 1898.

The meeting was called to order at eleven A. M. by the President, Dr. Henry P. Walcott. Fifty-eight Councillors were present.

APPOINTMENT OF DELEGATES AND COMMITTEES.

On nomination by the Chair, the following delegates to other State medical societies were appointed:

Maine: Drs. E. N. Whittier, of Boston; J. A. Fitz-Hugh, of Amesbury.

New Hampshire: Drs. H. E. Marion, of Brighton; J. A. Gage, of Lowell.

Rhode Island: Drs. J. M. Harlow, of Woburn; A. H. Cowdrey, of Stoneham.

Connecticut: Drs. J. C. Hubbard, of Holyoke; A. Post, of Boston.

New Jersey: Drs. E. B. Harvey, of Westboro; J. A. Houston, of Northampton.

Committees were appointed:

To Audit the Treasurer's Accounts: Drs. F. I. Knight, F. G. Morrill.

A communication from the Chicago Medical Society was read soliciting the members of the Society as follows:

> You are urgently requested to write a short personal letter to, *or to wire*, your own senators and representative in Washington, or any other congressman you may have influence with, protesting against the passage of Senate Bill 1063, known as the Antivivisection Bill. Senator Gallinger is chairman of the committee having the bill in charge, and has given notice that he will call for a vote on the bill at an early date. Hence you should send your protest without delay. It is believed that thousands of such messages pouring into Washington within the next ten days will enable those on the ground in charge of the opposition to the bill to defeat it.

The Society by vote, and by communications to the members of Congress from this State, has already entered its protest against the passage of the bill in question.

A portrait of the late Dr. Cotting was presented by his family to the Society.

Dr. Draper offered the following:

> *Resolved:* That the gift of the portrait of Dr. Benjamin E. Cotting be accepted, and that the thanks of the Society be sent to the donors for their thoughtful and liberal act.

Dr. Cheever, in seconding the motion, said that Dr. Cotting might be regarded as the father of the Society for the latter half of this century. Advocating its rights and duties, he held up a very high standard of medical morals.

The resolution was unanimously adopted.

Motor-Cradles. — The latest addition to the scientific *armamentarium* of the nursery, according to the *Medical Press and Circular*, comes in the guise of a motor-cradle. Furnished with this labor-saving contrivance the nursemaid of the future may economize time and temper to the behoof of her charges. The question whether babies should be rocked at all, either by hand labor or by machinery, is quite another thing. Perhaps some scientist will kindly investigate the philosophy of the effects of rhythmical motion upon babes.

THE BOSTON

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THE CAFFERY BILL.

THE Senate Committee on Public Health and Quarantine at Washington has submitted to that body, through Senator Vest of the committee, a report upon the various plans which have been referred to it for the creation of a Department of Public Health.

As might have been anticipated from the constitution of that committee, the report is wholly in the interests of the Marine-Hospital Service, which, with the powerful support of the Treasury Department, has better facilities for persuading congressmen than can be enjoyed by any interest or interests distant from Washington.

The Marine-Hospital Service was established in the Treasury Department for the sole purpose of caring for the sick sailors of the merchant marine. Such hospitals were once necessary because general hospitals were few and hardly sufficient for the needs of the permanent population in their vicinity; but the seaport cities have now hospital accommodations large enough to receive the ordinary sailors, while those attached to the navy would naturally be still cared for in the hospitals of that service. Under a succession of energetic chiefs the Marine Hospital has acquired functions foreign to its organization, and now demands the oversight of the public health work of the nation, a function not justified by anything in its constitution or experience.

If any existing department in Washington could properly be placed in charge of our quarantine work, the navy would seem to be the proper body, for its medical officers have visited all quarters of the globe, and are more familiar than any other public servants with the foreign diseases which produce so much disturbance when introduced into this country.

The great sanitary need of the country, however, is something of far greater importance than a quarantine against yellow fever or cholera. The disgraceful deficiency of the government at Washington in this regard lies largely in the fact that a few cities and less that five States have done the only creditable public health work of the country in later years. It has been the hope of many that the growing belief in really scientific methods for the prevention of disease might find some encouragement in the halls of Congress; but it now seems probable that the same Senate is willing to hamper the methods of investigation which have given us a means for controlling diphtheria, and to enlarge the powers of the Marine-Hospital Service for the sole purpose of creating a quarantine against yellow fever and cholera alone.

The larger part of Senator Vest's report, which accompanies Senate Bill No. 2680, is devoted to the discussion of the constitutional right of the United States to protect its inhabitants against a contagious disease introduced into this country from abroad; and, fortunately, the conclusion is reached that the general government has that right, but it hardly seems necessary at this late day to spend much time upon the question of a right to save human life when Congress has more than once authorized more drastic measures for the suppression of diseases among the domestic animals than any now demanded for man's protection.

So long as the Senate regards its associate from New Hampshire, Dr. Gallinger, as a sufficient representative of the present views on preventive medicine, we are not likely to get any better plan for a public-health service than this presented by Senator Vest; but if any of our readers are in a position to do missionary work in instructing any senator in the beneficent functions of the great sanitary boards of other countries, let such hasten to the task.

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THE RELATION BETWEEN THE NOSE AND THE SEXUAL APPARATUS.

MARK TWAIN, as a result of his critical study of the German language, came to the conclusion that as so many of the nouns were made by adding a prefix or an affix to either *Zug* or *Schlag*, it would simplify the language if all other nouns were suppressed. In the same way we find in medicine the peripheral irritation of so many reflex nervous phenomena can be traced either to the generative apparatus or to the nose that it is folly to subject our patients to annoyance by seeking further for a cause, at least until these two regions have been thoroughly explored.

The influence of the sexual organs upon the rest of the body has always been recognized. Some years ago one of our medical sages was in the habit of calling the attention of his students to the influence of sexual excitement on the deltoid muscle, as seen, for instance, in the barn-yard cock, the frog, the stallion and other lower animals, and even in the young men in the lower classes in our cities.

The influence of the nose is being more and more appreciated each year. Abnormal nasal cavities not only cause serious pathological symptoms, but they deprive the owner of his just share of the enjoyments of life.

"Wer liebt nicht Wein, Weib und Gesang,
Der bleibt ein Narr sein Leben lang."

The poor fellow was probably simply suffering from nasal obstruction. Physiologists have long known that the flavor of wine, or any other taste except a half-dozen of the crudest, is due to the nerves of smell and not to those in the mouth. More recently we have learned that all the finer qualities of the singing voice are possible only when the nose and accessory cavities are in proper condition and properly used. Can we be surprised, then, at evidence which seems to show that the third is equally dependent upon the same organ?

A relationship between the nose and the reproductive organs is very evident in the lower animals, although in man the sense of smell as a sexual guide has been largely replaced by the other senses. But we find that there is an increasing number of cases reported in medical and general literature to show that it is by no means entirely replaced. There is no question that many ideas, even chaste ideas, may be aroused by the sense of smell. Many authors have unconsciously or otherwise used the influence of smell upon sexual impulses in their romances. In Zola's realistic pages the reflex value of odors is frequently made prominent.

Is it not to be expected that these two sources of delicate nervous impulse, the nose and the genitals, each of which influences the body so profoundly, should influence each other in many subtle ways?

A thorough and scholarly article on different aspects of the subject by J. N. Mackenzie[1] has recently appeared. Dr. Mackenzie appreciates the interest and importance of the subject, and concludes thus: "The study of the relations between the nose and the sexual apparatus opens up a new field of research, of pleasing landscape and almost boundless horizon, which bids to its exploration not only the physiologist and pathologist, but also the biologist. Above all it brings us face to face with a serious problem of life, an interesting enigma, whose significance it will be the task of the future to divine." The thoroughness with which the author has studied the subject may be inferred from the following quotation: "Sneezing is sufficiently common, particularly during coitus. Quite a number of such cases have come under my personal observation in persons of robust health and whose nasal organs were apparently free from disease." He shows that the subject is not new. He quotes from several ancient Greek and Latin authors to show that it was commonly thought that a man's sexual powers depended upon the the size of his nose, and that a woman's virginity could be proved by her throat, and similar observations of the wise men of old. It had also been noted that catarrhal symptoms are often caused by sexual excitement, and it is this part of the subject, in connection with the local changes which take place in the nose during different states of the genital organs, coitus, menstruation, pregnancy, etc., which form the principal part of the paper.

The author covers both the physiological and pathological sides of the question with a thoroughness which makes his paper a valuable addition to the literature of the whole subject. The paper shows incidentally that co-education in our best medical colleges does not, as was claimed by some of its opponents, tend to limit free discussion of subjects which to the non-medical mind might seem likely to cause embarrassment to a bisexual assemblage.

A recent monograph by Fliess[2] approaches the subject from the other direction. He finds certain sensitive spots in the nose which seem to him the origin of genital troubles, and he reports cases in which he has relieved dysmenorrhea by cocainizing and cauterizing these spots. If his observations are confirmed, we may be able in the future to do away with one of our two common sources of peripheral irritation and treat all of our patients through the nose. And if we can also recover the lost art of the ancients, and add to our requirements the diagnosis of the sexual condition of those we meet by the size and shape of the nose and mouth and neck we shall add greatly to the chastity of the race; for who would dare to transgress if his transgression were to be written on his face?

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THE BILL TO RESTRAIN THE NEW YORK CITY BOARD OF HEALTH.

There is much opposition to the bill introduced into the Legislature by Senator Brush curtailing the powers of the New York City Board of Health, and Mr. Strauss, the President of the Board, has had statistics prepared showing the value of the work which it is proposed to interfere with. The manufacture of vaccine virus for the Department was begun in 1876. From 1868 to 1877 there was a total of 1,466 deaths from small-pox in the city. In the decade following there were 936 deaths from the disease, and in the decade ending last year there were but 458 deaths from it. The manufacture and sale of diphtheria antitoxin by the Department was authorized in 1895. In 1895, 1896 and 1897 there were 2,450 diphtheria patients treated with antitoxin, of whom 2,087 recovered, and 363 died. In 1894 there were 2,870 deaths from diphtheria, but in 1897, with antitoxin in more or less general use, there were only 1,591 deaths from the disease. Mr. Strauss also points out that there is no other city in the State where either vaccine virus or antitoxin is produced in large enough quantities to supply New York's demand.

At a meeting of the Medical Board of the New York Hospital, held January 31st, resolutions were adopted commending the results achieved by the Health Board in the distribution and use of preventive remedies and condemning the Brush bill. Dr. E. L. Trudeau, the distinguished authority on tuberculosis, who himself narrowly escaped death from the disease, and who has for many years been the superintendent of a sanitarium at Saranac Lake, where the results have been most gratifying, has sent a communication to President Strauss in which he expresses the opinion that the passage of the bill, which, it will be remembered, takes tuberculosis out of the list of infectious diseases, would be a grave menace to the cause of progressive sanitation and to the welfare of the community. It should also be mentioned that Dr. Abram Jacobi has withdrawn from the Committee of the County Medical Society, which was instrumental in the framing and introduction of the bill.

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[1] Johns Hopkins Hospital Bulletin, January, 1898.

[2] Berlin, 1897.

MEDICAL NOTES.

Dr. Welch Appointed to the Maryland State Board of Health — Dr. William H. Welch, of Johns Hopkins Hospital, has been appointed by the Governor of Maryland a member of the State Board of Health, and has accepted the position.

Small-Pox in the South. — At Atlanta, Ga., only 12 new cases of small-pox were reported there during the week ending January 29th. In Alabama the disease is on the increase, and 175 cases were reported to the Board of Health during that period of time.

Alleged Origin of Yellow Fever Epidemic. — The committee of the Mississippi Legislature appointed to investigate the yellow fever of last summer has reported that the yellow fever originated at Ocean Springs, Miss., beyond all question, but not from the United States Marine-Hospital quarantine station at Ship Island. According to the results of investigation the yellow fever got into this country much earlier than supposed, as early, indeed, as the latter part of April, and not from Cuba but from Guatemala. It is thought to have been introduced by a family, residents of Mississippi, who had been temporarily staying in Guatemala, and who came to the United States on the Central American steamer *Breakwater*. Their baggage was not fumigated or disinfected. They went direct to Ocean Springs, where one of them was taken sick with fever. Within a few days fever started in their immediate neighborhood, and from that time fever of some character prevailed in Ocean Springs all the summer, although the diagnosis of yellow fever was not made until September. The committee attributes the introduction of the yellow fever to the fact that the quarantines of the Gulf States against the West Indies and Central America go into effect on May 1st, whereas the *Breakwater* brought the disease into the country in April, or before the quarantine service was put in operation.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, February 9, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 84, scarlet fever 32, measles 41, typhoid fever 9.

Philadelphia Physicians Visit the Boston City Hospital. — Dr. A. C. Abbott, director of the City Bacteriological Laboratory of Philadelphia, Dr. Woodward of the Board of Health, Dr. W. M. Welch, physician in charge of the Municipal Hospital, and other city officials have recently made a visit of inspection to the Boston City Hospital with a view of studying the new surgical and laboratory buildings with reference to the construction of the new wings to be added to the Municipal Hospital of Philadelphia. The construction and equipment of these buildings are among the best in the country.

Annual Dinner of the Boston City Hospital Club. — The Boston City Hospital Club had its annual dinner at Young's Hotel on Wednesday evening, February 2d. One hundred and ten members were present. The President, Dr. Geo. W. Gay, presided very felicitously. Speeches were made by Messrs. L. G. Burnham, a trustee of the hospital; W. B. Rice, of Quincy, Mass., who presented that city with a hospital; Dr. Dudley P. Allen, of Cleveland, O.; Drs. Clarence J. Blake and Maurice H. Richardson, of the Massachusetts General Hospital; J. W. Lovett; John B. Walker, of New York; and Dr. Geo. B. Shattuck, the President-elect of the Club. Dr. J. Bapst Blake read a humorous poem.

Tuberculous Cattle. — The Committee on Agriculture, of the Massachusetts House of Representatives, gave a hearing last week on the Bennett bill for an appropriation of $50,000 for expenses in connection with the suppression of contagious diseases among cattle, horses, etc. The bill was introduced for the purpose of bringing the subject of tuberculosis before the Committee on Agriculture, and the amount named in the bill was of no special significance. The Cattle Commissioners ask for $150,000. The advisability of reducing the amount of compensation paid by the State, from the full amount to two-thirds, or even one-half of the value of the animal was discussed. The opinion was expressed that the Massachusetts law should be modified to conform to the United States law relative to the condemnation of meat from alleged diseased animals. Dr. Herrick, of Worcester, spoke of the decrease in the amount of general tuberculosis found. In 1895 the amount of general tuberculosis was 32.6 per cent., in 1896 it was 25.1 per cent., and in 1897 but 3.61 per cent. of general tuberculosis was found.

A Separate Massachusetts Board of Lunacy. — At a meeting of the Committee of the Massachusetts Medical Society on State and National Legislation, and the committees appointed by the Suffolk District Medical Society, the Boston Society for Medical Improvement, and the Boston Medico-Psychological Association to petition the Legislature of Massachusetts to establish a separate Board of Lunacy, which was held January 31st, the following propositions were unanimously adopted to be advocated at a hearing before the Committee on Public Charitable Institutions on Wednesday, February 9th, at 10.30 o'clock, at the State House: "(1) A separate board of lunacy should be created. (2) The State shall have the care, custody and control of all the dependent insane within its limits, and their support shall be paid for from the treasury of the Commonwealth. (3) The board shall be composed of five members, to be appointed by the Governor, one of whom shall be its executive officer, which officer shall receive a sufficient salary, the amount of which shall be determined by the board." The chairmen of the committees of the Massachusetts Medical Society, Medical Improvement Society and Medico-Psychological Society favor the modification of the last proposition, so that it shall read: "one of whom *may* be its executive officer," leaving it to the board to determine that matter when appointed. Such a hearing was held, and a large attendance was present.

NEW YORK.

Convalescent Homes. — In the annual report of the Charity Organization Society of the City of New York, just made public, the statement is made that there is urgent need for convalescent homes for the after-care of hospital patients; the environment of the hospital being unfavorable for speedy convalescence, and the pressure for hospital accommodations frequently inducing the discharge of a patient long before he is able to resume regular employment. There is as yet inadequate provision for chronic invalids, especially consumptives and cancer patients, and additional homes for incurables are needed. The report also deplores the fact that lack of financial support has restricted the operation of diet kitchens for the destitute sick.

A Death from Tubercular Leprosy. — Henry Albury, aged eighteen years, died at the Kingston Avenue Hospital, Brooklyn, on February 2d, of tubercular leprosy characterized by marked elephantiasis. Young Albury was the son of a wealthy tobacco merchant of Key West, where he was attacked by the disease five years ago. He received the best medical treatment, but without avail, and became a celebrated case among the dermatologists. Four years ago he was placed in the institution in which he died, and he was there carefully attended by Drs. C. E. Barber and J. M. Winfield, of Brooklyn.

Vital Statistics — The reports of the Bureau of Vital Statistics of the Health Department show a reduction in the mortality of the city since the beginning of the year. During the week ending January 8th there was reported in the Borough of Manhattan 770 deaths, representing an annual death-rate of 19.88 per thousand of the estimated population. In the week ending January 29th there were but 631 deaths, representing an annual death-rate of 17.22. In this week there were in the whole city, with an estimated population of 3,138,899, 1,121 deaths, representing an annual death-rate of 17.01. While in Manhattan Borough the death-rate was 17.22, in the Bronx it was 22.08, in Brooklyn, 16.08, in Queens, 15.89, and in Richmond (Staten Island), 19.27. It strikes one as somewhat curious that the mortality should be so much larger in the suburban district of the Borough of the Bronx than in the more thickly populated portion of the city below the Harlem, with its crowded tenement-houses, but it is possible that the large number of charitable institutions in this region may afford a partial explanation of the circumstance.

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Miscellany.

THE PREVENTION OF TUBERCULOSIS IN BROOKLINE, MASS.

As a means of spreading reliable information relative to tuberculosis and the best means for preventing it, the local Board of Health has ordered to be distributed to every family in town a circular of the Massachusetts State Board of Health, which for this purpose has been somewhat abridged and amended:

The object of the State Board of Health in preparing this circular is to furnish information (1) as to the nature of pulmonary consumption, (2) the conditions which favor its spread, and (3) the best methods of preventing it.

The circular explains the nature of consumption and its causation by the bacillus of tuberculosis, and enumerates and explains the conditions which favor its spread, and the means by which they can be prevented. The conditions enumerated are: defective ventilation, overcrowding of dwellings, factories and workshops, insufficient and badly selected food, dampness of soil, intemperance and undue physical or mental strain, overwork, worry and anxiety. As preventive measures are given the prevention of overcrowding, efficient ventilation, household and personal cleanliness, the selection of healthful occupation, the avoidance of the inhalation of dust, a nutritious and easily digested diet, the exclusion of milk from infected animals from the food-supply, the thorough cooking of suspected meat, and avoidance of overwork, worry and anxiety. Directions for the proper disposal of the sputa of consumptives are given, and also for the efficient disinfection of rooms vacated by consumptives. The order of the board concerning expectoration in public places we have noticed in our last issue.

The board has also distributed to the medical profession of the town an announcement that free examinations for the bacteriological diagnosis of typhoid fever by the Widal test have been arranged for by the board. As some fifty cases of malaria of tertian type and several of quotidian occurred in Brookline during the past year, the importance of securing facilities for such a test is evident.

The intelligent and progressive action of the Brookline Board is an example worthy of imitation by other towns and municipal boards of health.

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THERAPEUTIC NOTES.

Pyelitis. — (Pepper):

℞	Potass. bromid. Sodii bicarb.	āā gr. cix
	Ext. belladonnæ	gr. iv
	Ext. buchu	ʒ i
	Syr. sarsap. comp.	q. s. ad. ℥ iv

M. S. ℥ ss t. i. d.

Acute Catarrhal Bronchitis. — The *Medical Record* gives two formulas, the first by Wood and the second by Da Costa:

℞ Potass. citrat.	ℨ ss
Apomorphinæ hydrochlor.	gr. i
Syr. ipecacuanhæ	℥ ss
Succi limonis	℥ ij
Syr. simplicis	q. s. ad ℥ iv

M. S. ℨ ss. in water every three hours.

℞ Vini ipecacuanhæ	ℨ ij
Liq. potass. citrat.	℥ iv
Tr. opii camph Syr. acaciæ	āā ℥ i

M. S. Tablespoonful three times a day.

A Wash for the Itching of the Scrotum. — The *Revue Médicale* for November 24th gives the following as Leistikow's formula:

℞ Corrosive sublimate	from 4½ to 7½ grs.
Alcohol	375 grs.
Chloroform	5 drops
Distilled chamomile water	375 grs.
Cherry-laurel water	750 grs. M.

Suppositories for Bleeding Hemorrhoids. — The following is taken from the *Medical News*:

℞ Ferri subsulph.	gr. iii
Plumbi acetat.	gr. i
Mass. hydrarg.	gr. ss
Ol. theobrom.	q. s

M. Ft. suppos. No. 1. Sig. Insert one suppository morning and evening.

Anesin, a New Local Anesthetic. — This substance, which has been described as an aqueous solution of acetone chloroform, has been brought forward by Vamossy as a substitute for cocaine; he says it is a good local anesthetic, free from toxic properties. — *Deutsche Medicinische Wochenschrift.*

For the Relief of Migraine. — Excellent results are reported by Eshner from the administration in this affection of the fluid extracts of gelsemium and cannabis indica. The dose is three to five drops of each, given three times daily, until physiologic action becomes apparent. — *Medical News.*

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Correspondence.

CLIMATE OF SOUTHERN CALIFORNIA.

Redlands, San Bernardino Co., Cal.
January 21, 1898.

Mr. Editor: The climate of Southern California is a source of never ending surprises, even to those who know it best. And, in spite of all that has been written in reference to it, few people in the East have definite ideas upon the subject. They believe it to be one of the most genial, sunny and healthful climates in the world; and this it undoubtedly is, but its variations in temperature, its rainfall, and its effects upon invalids and others who seek benefit from it are little understood.

This uncertainty is not altogether the fault of writers. The variations in the climate of the very limited section of country known as Southern California are so marked and depend so much upon purely local conditions that the mind of the reader is confused, unless he has been in the country and understands its topography. Thousands of physicians in the East send patients to California in a haphazard way, simply giving them general instructions to "go to South California and stay out doors." As often as otherwise these patients, on arrival, find everything different from what they had anticipated, are bitterly disappointed, and fail to receive the benefits that they had anticipated. In many instances this result is due to ignorance of the country. In many others it is inevitable, because the climate is expected to perform miracles — something that no climate ever does.

Statistics are of very little value, although physicians and others are fond of revelling in them. They study reports of the average rainfall, the relative humidity, the number of sunshiny days, and the daily variations of the thermometer, and attempt to deduce from these a definite opinion as to whether the climate will benefit a particular case. The difficulty is that all of these facts are secured by averaging the conditions obtaining for a number of years; and, when the individual reaches Southern California, he finds that he has come in an extreme year, and that the weather is altogether too wet or too dry, too warm or too cold, to suit his case. The result is disappointment.

Take the rainfall, for instance. The average in a certain interior town is twenty inches a year. A fairly steady shower for twenty-four hours means an inch and a half of rain. Therefore the rainfall at this place is equivalent to about thirteen really rainy days in a year. Yet in one exceptional year, within the last decade, there was rain for forty consecutive days in this vicinity. A careful record shows that, during the past 27 years, the annual rainfall at this place has varied between 8.11 inches and 37.51 inches. The former record was in 1895-96, the latter was in 1883-84, the record being kept from July to July, and not from January to January. During January of the dry season there was a trifle over two inches of rain; during March there were nearly three inches; during February there was none. The remaining three inches were scattered through four months. This was certainly a dry, warm year. During the wet season there was rain every month except August; and there were heavy rains every month from December to May inclusive. The heaviest were in February, with a total of 12.20 inches, March with nearly 10 inches, and April with nearly six. The tourists to Southern California that year were doubtless thoroughly disgusted, for they always desire sunshine. Yet it is probable that, taking into consideration all of the residents of this particular section of Southern California, the climate of the wet year was productive of less sickness than the climate of the dry year. This is an anomaly which the Eastern physician, who regards the State solely as a refuge for consumptives, fails to understand. He is looking for a dry atmosphere, an air which will arrest the rapid destruction of tissues caused by consumption, and he does not stop to consider other conditions of health. But it is doubtless true that a temporary excess of moisture in the atmosphere, in a climate which is naturally dry, is better for the average citizen than a deficiency.

A dry year in California is more productive than a wet one of colds, pneumonia, catarrh, *la grippe* and similar diseases. This is particularly true of the interior points. The reason for this is in the great difference in temperature, in a dry season, between sun and shade and the rapid falling in temperature in the early evening. Allured by the warmth and brightness, people exercise in the sun and then sit or stand in the shade without precautions against taking cold. Perspiration is quickly checked and a cold is the result. As soon as the sun goes down in this dry climate the earth parts with its heat very rapidly, as it is quickly dissipated through the thin atmosphere. There is accordingly a sudden chill on the air early in the evening and, unless one is prepared for it, a cold is often the result of a few minutes' exposure to this chill. People who have resided in the country for years complain that they take cold as readily as they formerly did in the East. Diseases resulting from colds are very common, although not usually as severe as the same ailment in a more severe climate. *La grippe*, for instance, is prevalent, but in a comparatively mild form, not often producing complications which threaten life.

A dry season is much more productive than a wet one of those electrical storms which are the most disagreeable feature of Southern California's climate. The deserts which compass the whole region on the north, the east and the southeast are storehouses of electrical energy. In the East when the atmosphere is surcharged with electricity the result is a thunder-storm, and the electricity passes from the clouds to the earth in bolts of lightning. In California, under similar conditions, there is a wind-storm, blowing from the deserts south or westward. This often extends to the ocean, although its worse effects are felt inland. In winter it is simply a harsh wind, tempered by the snows on the mountains over which it passes. In summer it frequently raises the temperature to 106°, or even 110° in the shade. There is a disagreeable tension about it, summer or winter, which is exceedingly trying to the nerves. In an average year there is perhaps half-a-dozen of these tempests; in a dry year there are frequently twice or thrice that number.

Although statistics are of no value in particular cases, because the tourist who desires an average year invariably happens upon an "exceptional" one, yet they serve to illustrate general conditions and may be quoted for that purpose. February is usually a snug month in the East. The following is an accurate record of variations in temperature for February, 1894, at an inland town in Southern California well known as a health resort. Its altitude is 1,500 feet. The readings were taken from a reliable, self-registering thermometer hanging out of doors but partially protected by a veranda. In the open the minimum readings would have been three or four degrees colder. The minimum and maximum readings for each day are stated together omitting the days of the month, and are as follows: 33, 53; 33, 56; 38, 59; 45, 60; 35, 60; 44, 58; 37, 58; 42, 58; 37, 58; 38, 51; 32, 54; 32, 55; 34, 59; 37, 63; 42, 67; 39, 55; 32, 57; 33, 59; 36, 57; 46, 55; 47, 63; 42, 58; 36, 64; 38, 64; 37, 69; 40, 66; 44, 70; 42, 68. The average minimum temperature of this month was a trifle over 38°; the average maximum a shade less than 60°. The relative humidity varied between 18, which point is reached twice, and 67, which point is also reached twice. The average was about 42. This was a dry year, the total rainfall being only a little over 10 inches. During the month in question only an inch of rain fell. There were only two rains, both during the night. Five days were cloudy, and there was one "norther," or desert wind full of electricity.

Such a month would be quoted as typical by enthusiasts upon the climate of Southern California. No rain except at night, and then only a little; comfort in sitting out of doors in the sun every day except the five cloudy days; no frost; no fog; only one disagreeable wind. Yet, even in such a month, there are dangerous possibilities for taking cold for those who, from ill-health, are susceptible to cold. The maximum temperature is usually reached at one or two o'clock in the afternoon and the air continues warm until the sun sets at five or a little later. Then there is a sudden and very perceptible drop, sometimes amounting to ten degrees. After sunset the air frequently continues to grow colder until sunrise the next morning, the minimum usually being reached just before sunrise. During the pleasant part of the day the air is cool enough to be bracing yet the delicious sunshine permits one to sit or walk or ride at will out of doors. The danger is in neglect to protect the body properly or to go within doors soon enough at nightfall.

The contrasts already mentioned give the State a bad reputation with disappointed tourists. An Eastern lady writing in *Lippincott's* a few months ago, said: "As every one knows, when the rainy season sets in in Southern California it is a practical deluge, which lasts for days and sometimes for weeks." This is certainly a very inaccurate statement, easily disproved by such records as those quoted above. Yet it would apply in a way to exceptional winters, and the person who wrote it probably visited California in an exceptional winter. During the days just before and just after Christmas, 1897, there were eight during which there was frost in Southern California, and, in fact, all over the State. In exposed localities the thermometer went to 21°. People found difficulty in keeping warm, and good fires were in order from early morning to late at night. Overcoats were in demand. During the next ten days there was no frost. Doors and windows were left wide open the greater part of the day. Families sat in comfort throughout the evenings without a fire, and people rode and walked without overcoats. Roses, geraniums and other flowers were everywhere in bloom, uninjured by the cold weather preceding. Within a week, still later, there was a snow-storm over a wide area of Southern California. It blocked the mountain roads, and the snow was two feet deep in the valleys close to the mountains. In a popular tourist resort, also the centre of one of the most noted orange-growing districts, the snow was two inches deep all over the town and, in some places, orange-trees were broken down by the combined weight of the snow and the fruit. The snow was wet and clung to the foliage, but did not freeze to the trees, and it disappeared after an hour or two of sunshine. This was the severest snow-storm since January 12, 1882, when twelve inches of snow fell in the same valley.

The tourist, happening to arrive in this section during the period of three weeks covering these three sudden transformations in weather, would have been told that the frost and the snow were exceptional. This statement would have been true but he would not have believed it. In fact, tourists are so often told that the weather of Southern California is "exceptional," that they greet the word with an exasperating smile of incredulity; and they very often write or report to their friends that the climate is a fraud and the people are all liars. This is a deplorable state of affairs, but it cannot be helped as long as the climate persists in playing these tricks upon everybody.

(*To be continued.*)

RECORD OF MORTALITY

For the Week ending Saturday, January 29, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	689	248	12.45	19.35	1.75	.30	3.00
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	458	143	14.52	12.76	1.32	2.20	7.70
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	158	44	6.93	13.23	2.52	1.89	2.52
Boston . . .	517,732	188	51	7.95	16.96	.53	2.12	2 65
Cincinnati . .	405,000	107	—	7.44	15.81	—	1.86	.93
Cleveland . .	350,000	79	23	1.26	8.82	—	1.26	—
Pittsburg . .	285,000	87	28	11.50	20.70	3.45	2.30	3.45
Washington .	277,000	100	28	8.00	18.00	1.00	4.00	1.00
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	32	8	9.39	3.13	—	—	6 26
Nashville . .	87,754	24	5	4.16	16.64		4.16	—
Fall River . .	95,919	32	9	18.78	18.78	15.65	3.13	—
Lowell . . .	87,193	23	5	—	21.75	—	—	—
Cambridge . .	86,812	32	9	9.39	12.52	—	—	9.39
Lynn	65,220	25	10	—	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	14	1	—	21.42	—	—	—
Lawrence . .	55,510	17	6	11.76	23.52	—	—	5.88
Springfield . .	54,790	13	6	7.69	7.69	—	—	7.69
Holyoke . . .	42,364	8	1	12.50	12.50	—	—	12.50
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	3	0	—	—	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	9	2	—	22.22	—	—	—
Chelsea . . .	32,716	9	0	—	33.33	—	—	—
Haverhill . .	31,406	7	0	—	—	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	7	0	—	28.56	—	—	—
Fitchburg . .	28,392	1	1	—	—	—	—	—
Taunton . . .	27,812	8	2	—	25.00	—	—	—
Quincy . . .	22,562	6	3	33.33	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	1	—	—	—	—	—
Everett . . .	21,575	1	0	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	6	1	16.66	16.66	—	—	16.66
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,116; under five years of age 656; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough,

erysipelas and fevers) 229, acute lung diseases 350, consumption 274, diphtheria and croup 83, diarrheal diseases 36, typhoid fever 28, measles 27, scarlet fever 22, whooping-cough 17, cerebro-spinal meningitis 10, erysipelas 6.

From measles New York 17, Philadelphia 10. From scarlet fever New York 20, Boston and Lawrence 1 each. From whooping-cough New York 6, Cincinnati 5, Philadelphia and Pittsburg 2 each, Boston and Woburn 1 each. From cerebro-spinal meningitis New York, Boston and Washington 2 each, Worcester and Woburn 1 each. From erysipelas Philadelphia 3, New York 2, Boston 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending January 22d, the death-rate was 20.6. Deaths reported 4,440; acute diseases of the respiratory organs (London) 567, measles 228, whooping-cough 134, diphtheria 55, fever 42, scarlet fever 39, diarrhea 23.

The death-rates ranged from 13 5 in Cardiff to 23.4 in London; Birmingham 21.1, Bradford 20.5, Croydon 15.1, Gateshead 19.1, Halifax 20.5, Hull 18.1, Leeds 20.2, Leicester 16.2, Liverpool 22.8, Manchester 20.6, Newcastle-on-Tyne 15.9, Nottingham 19.0, Portsmouth 16.2, Sheffield 19.7, Sunderland 20.3, West Ham 15.3.

METEOROLOGICAL RECORD

For the week ending January 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..23	29.40	38	42	34	100	86	93	E.	W.	24	12	R.	O.	.93
M..24	29.90	30	36	25	66	78	72	N.W.	N.W.	18	24	C.	C.	
T ..25	30.08	26	32	19	49	62	56	W.	S.E.	10	4	C.	O.	
W..26	29.42	28	34	23	95	89	92	N.E.	N.W.	12	9	N.	O.	.56
T ..27	29.78	23	28	18	54	73	64	W.	W.	6	8	C.	C.	
F...28	29.98	12	18	7	44	34	39	N.W.	N.W.	14	8	C.	C.	
S...29	29.93	10	16	3	67	70	68	N.	N.W.	12	14	O.	C.	
☞														1.49

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JANUARY 29, 1898, TO FEBRUARY 4, 1898.

A board of officers to consist of Col. Charles H. Alden, assistant surgeon-general; Major James C. Merrill, surgeon; Captain George D. DeShon, assistant surgeon, is appointed to meet at the Army Medical Museum Building in this city on Tuesday, April 12, 1898, at 10 o'clock A. M., or at such time thereafter as practicable, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

First-Lieut. Benjamin Brooke, assistant surgeon, is relieved from temporary duty at the Army and Navy General Hospital, Hot Springs, Ark., to take effect April 6, 1898, and will then repair to this city and report in person on April 12, 1898, to the president of the examining board, for examination as to his fitness for promotion, and upon the completion of his examination will report in person to the Adjutant-General of the Army for orders.

The following named officers (assistant surgeons, with rank of First-Lieutenant) will report in person to the president of the examining board appointed to meet at the Army Medical Museum Building in this city, for examination as to their fitness for promotion, and upon completion of their examinations will return to their proper stations: Alexander N. Stark, Charles Lynch, Edward L. Munson, Charles E. B. Flagg, James M. Kennedy, Guy C. M. Godfrey, William F. Lewis.

The leave of absence on surgeon's certificate or disability, granted Major Charles K. Winne, surgeon, is extended two months on surgeon's certificate of disability.

Major Egon A. Koerper, surgeon, is relieved from duty at Fort Crook, Neb., to take effect upon the expiration of his present leave of absence, and will then report in person to the commanding general, Department of the Platte, for duty as chief surgeon of that department.

A board of officers to consist of Lieut.-Col. William D. Wolverton, deputy surgeon-general; Major John Van R. Hoff, surgeon; Captain Frank R. Keefer, assistant surgeon, is appointed to meet at Vancouver Barracks, Wash., on Tuesday, February 22, 1898, at 10 o'clock A. M., or at such time thereafter as practicable, for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion.

First-Lieut. John S. Kulp, assistant surgeon, will report in person on February 22, 1898, to the president of the examining board, appointed to meet at Vancouver Barracks, Wash., for examination as to his fitness for promotion.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a regular meeting of the Society at 19 Boylston Place, Wednesday, February 16th, at 8 P. M.

At 8 o'clock. Short communications by Dr. C. J. White and others.

At 8.30 o'clock. Dr. R. C. Cabot: "Recent Advances in Blood Diagnosis, with Lantern Demonstration." Dr. H. F. Hewes will open the discussion.

E. W. Taylor, M.D., *Secretary*, 416 Marlborough St.

The Boston Medical Society. — A regular meeting of the Society will be held on Tuesday evening, April 8, 1898, at 47 Chambers Street, at 8.30 P. M.

Subject: "When to Operate on a Lacerated Perineum," by Dr. J. S. Lockhart.

The profession at large is invited to be present.

M. Gerstein, M.D., *Secretary.*

RECENT DEATHS.

Aaron Young, M.D., M.M.S.S., died at Belmont, January 13, 1898, aged seventy-nine years.

Woodbridge Ruggles Howes, M.D., M.M.S.S., died in Hanover, February 5, 1898, aged eighty years.

Theophilus Parvin, M.D., LL.D., professor of obstetrics and gynecology at the Jefferson Medical College, died at his home in Philadelphia, on January 29th, at the age of sixty-nine years. Dr. Parvin was born at Buenos Ayres, Argentine Republic, where his father was a missionary, on January 9, 1829. He received his early education in Philadelphia, and subsequently at Indianapolis, where he was graduated from the University of Indiana in 1847. He then returned to Philadelphia, where he took a course in medicine at the University of Pennsylvania, obtaining his degree from the medical school there in 1852. He practised for a while at Indianapolis. He filled chairs successively at the Ohio State Medical College, the University of Louisville and the Indianapolis Medical College. He was called to the chair of obstetrics and gynecology at the Jefferson Medical College in 1883. Professor Parvin was a thorough and accurate scholar, and early won a reputation as an authority in his chosen branch. He was an honorary member of several obstetrical societies in Edinburgh, Berlin and elsewhere, and was always a prominent contributor to obstetric literature.

BOOKS AND PAMPHLETS RECEIVED.

Electric Treatment in Gout and the Uric-Acid Diathesis. By Robert Newman, M.D., New York. Reprint. 1897.

Serum Therapy with Report of Cases. By John M. Allen, A.M., M.D., Kansas City, Mo. Reprint. 1897.

Sir James Young Simpson and Chloroform (1811-1870). By H. Laing Gordon. New York: Longmans, Green & Co. 1897.

Tonic and Spasmodic Intestinal Contractions with Report of Cases. Appendicitis Complicating Ovarian Cyst and Simulating Torsion of the Pedicle, with Three Cases. By X. O. Werder, M.D., Pittsburg, Pa. Reprints. 1897-98.

Orthopedic Surgery. By James E. Moore, M.D., Professor of Orthopedic and of Clinical Surgery in the College of Medicine of the University of Minnesota; Fellow of the American Surgical Association; Member of the American Orthopedic Association; Surgeon to St. Barnabas Hospital, etc. With 177 illustrations. Philadelphia: W. B. Saunders. 1898.

Elements of Latin for Students of Medicine and Pharmacy. By Geo. D. Crothers, A.M., M.D., Teacher of Latin and Greek, St. Joseph (Mo.) High School; formerly Professor of Latin and Greek, University of Omaha, and Hiram H. Bice, A.M., Instructor in Latin and Greek, Boys' High School, New York City. Philadelphia, New York and Chicago: The F. A. Davis Co. 1898.

Manual of Pathology, including Bacteriology, The Technic of Post-Mortems, and Methods of Pathologic Research. By W. M. Coplin, M.D., late Professor of Pathology and Bacteriology, Jefferson Medical College, and Pathologist to Jefferson Medical College Hospital and to the Philadelphia (Blockley) Hospital, etc. Being a second edition of the author's "Lectures on Pathology," rewritten and enlarged. With 268 illustrations, many of which are original. Philadelphia: P. Blakiston, Son & Co. 1897.

Original Articles.

MASSACHUSETTS GENERAL HOSPITAL.

CLINICAL MEETING OF THE MEDICAL BOARD, DECEMBER 10, 1897.

DR. W. T. COUNCILMAN, by invitation, spoke on

CEREBRO-SPINAL MENINGITIS.

Cerebro-spinal meningitis has prevailed in Boston in the form of an epidemic during the past winter and spring. One hundred and eleven cases of the disease were treated in the Boston City Hospital, the Massachusetts General Hospital and the Children's Hospital between June, 1896, and October 1, 1897. At the time of the appearance of the first case in June there had been no case of this form of meningitis in the hospitals for a number of years. The first case occurred in June, 1896, one in the following September and three cases in December. In 1897 one case occurred in January, 10 in February, 23 in March, 29 in April, 21 in May, 14 in June, seven in July and three in September. At the present time the disease continues to prevail, and many more cases have been seen this autumn than in the autumn of 1896.

The disease has been epidemic in Boston a number of times. The first appearance of the disease in Massachusetts was in 1806, one year after its appearance in Geneva in 1805. It has been generally supposed that this was its first appearance, but it is more than possible that many of the early epidemics were this disease, although in the absence of clear clinical records and post-mortem examinations it is impossible to be certain of this. The first epidemic of the disease prevailed in the New England States until 1816. There was another epidemic between 1864 and 1866, and still another in 1874.

A table of the ages of the 111 cases shows that the disease prevailed principally in young adults. Only one case was seen in a child under one year of age. A table of ages of our 111 cases agrees almost exactly with the table of the same number of cases given by Leichtenstern in his report of the epidemic in Cologne in 1885. A great deal of stress should be laid on the rarity not only of epidemic meningitis but of all forms of meningitis in children under one year of age. Nothing more clearly shows the inaccuracy of general mortality tables than the ages given in the cases of meningitis. In nearly all of these tables a large percentage of cases is attributed to children under one year of age. In looking over these mortality tables one receives the impression that errors in the diagnosis of meningitis are not uncommon.

The mortality of the 111 cases was 68 per cent., which is comparatively high. Hirsch gives the mortality as varying from 20 to 75 per cent. The greatest actual and relative mortality was found in the cases in April and May. Most of the epidemics of cerebro-spinal meningitis reported in the literature have appeared in the late winter and spring, although there have been a number of exceptions to this general rule. A map of the city giving the distribution of the cases shows them to have been pretty well scattered over the city, there being only two localities where they were especially numerous. Generally but a single case came from the same family, although there were several exceptions to this, in one case three coming from the same family, and in another two.

A great deal of interest attaches to the sporadic cases of cerebro-spinal meningitis. We can only be certain that these sporadic cases are the same as the epidemic form when the organism associated with the epidemic form has been found in them. So far we have only been able to find but one instance in which the diplococcus intracellularis of Weichselbaum, the organism of epidemic cerebro-spinal meningitis, was found in a sporadic case. In most of the sporadic cases no cultures have been made, but so far as we can judge from the clinical and anatomical descriptions many of these represented the true epidemic form. Almost all observers who have been acquainted with the epidemic form of the disease speak of the presence of sporadic cases occurring both before and after the epidemics. The single cases seen here in June and September may be considered as sporadic. We think it may be generally assumed that cases of sporadic meningitis which recover are of the epidemic variety. So far we have not been able to find a case, which from its association with other conditions could be regarded as due to the pneumococcus or streptococcus, which has recovered. Certainty with regard to the sporadic cases can only be known by careful anatomical and bacteriological investigation. The bacteriological examination of the fluid removed by spinal puncture is of special importance.

The first description of an organism which might be regarded as the diplococcus intracellularis was given by Leichtenstern in 1885. He found in the exudation in the meninges a few diplococci, sometimes single, sometimes in groups, similar in arrangement to gonococci, enclosed in white corpuscles. Schwabach found diplococci in the pus cells in a case of otitis media secondary to meningitis.

Most of the bacteriological examinations made on cases of meningitis up to the past few years have seemed to show that the pneumococcus was the cause both of the epidemic and most of the sporadic cases. This was probably due to the fact that the pneumococcus is very frequently found in sporadic meningitis, and in the epidemic form the diplococci may either be mistaken for the pneumococci or an accompanying pneumococcus infection mask the diplococci.

The first definite description of this organism was given by Weichselbaum in 1887. The organism was described by him as a diplococcus which in the lesions is found almost solely within the cells. In cultures the organisms grow singly, in pairs and in tetrads. Both in cultures and in the tissues they were decolorized by Gram. There were few confirmations of the discovery of Weichselbaum until 1895, when Jäger found the same organism in 12 cases of epidemic cerebro-spinal meningitis which occurred in the garrison at Stuttgart. Jäger's description added but little to the previous description of Weichselbaum.

Post-mortem examinations were made in 35 of the 111 cases, and the diplococcus intracellularis was found in cultures, on microscopic examination of the exudation, or in sections of the tissues, in all but four cases. In most of the cases they were found in all three methods of examination.

In one of the four negative cases they had previously been found in the fluid withdrawn during life by spinal puncture. Two of the other cases were very chronic, and the fourth was a chronic case of mixed infection with tuberculosis. In a certain number of cases cultures failed to give the organisms although they were abundantly present as shown by cover-slip examination of the meninges and microscopic sections. The organism is very difficult to grow and from a number of tubes inoculated, in many cases only one or two tubes would show a few single colonies. We have found Löffler's blood-serum mixture best adapted for its growth. Had agar been used for the primary cultures there is no doubt that in many cases no growth would have been obtained. There is considerable irregularity in staining, some organisms being brightly stained, others more faintly. Sometimes these differences in staining are seen in a single pair of organisms, one being more brightly stained than the other. There may also be considerable variation in size, and the larger organisms stain more imperfectly. In these swollen organisms there is often a brightly stained point in the centre while the remainder of the cell is but slightly colored. This condition may have been mistaken by Jäger for a capsule around the organism. These variations in size and staining appear to be due to degeneration and are more common in old than in fresh cultures. In the tissues the diplococcus is almost strictly confined to the interior of polynuclear leucocytes. It has no definite position in the cell and is never found in the nucleus. The number of organisms found in the cells varied from a single pair to such numbers that the nucleus of the cell was frequently obscured. In no case were the diplococci found except in connection with the lesions of the disease. So far as could be learned from cultures of the blood, liver, spleen and kidneys the organism does not produce septicemia.

Lumbar puncture was performed in 55 cases, and in a few cases several punctures were made in the same individual. In the fluid obtained diplococci were found on microscopic examination or in cultures in 38 cases; in 17 of the cases they were absent. The average duration of time from the onset of the disease before spinal puncture was made was seven days in the positive cases and 17 days in the negative. The longest time after onset in which a positive result was obtained was 29 days.

The character of the fluid obtained by spinal puncture varied greatly. In some cases, even when diplococci were found in it, it was almost clear, showing only a slight turbidity when examined against a dark background. In most cases where the puncture was made early in the disease the fluid was turbid, and in twenty-four hours a large amount of sediment formed at the bottom of the tube. The amount of fibrin in the exudation varied greatly. In a few cases so much was present that the fluid coagulated and the tube could be inverted. In one chronic case of marked intermittent character three punctures were made, one before, one after and one during exacerbation. In the fluid obtained before and after the exacerbation no diplococci were found. The fluid obtained during the exacerbation was more cloudy, and contained diplococci. These would seem to show that in the intermittent cases the exacerbations are due either to a fresh growth of the organisms or to a fresh invasion of the parts which had been previously comparatively free. In the fluid obtained in the early punctures almost the only cellular elements were polynuclear leucocytes. Later large epitheloid cells and lymphoid cells were found among the pus cells. No ill effects were seen from spinal puncture.

Too much cannot be said of the importance of spinal puncture in making the diagnosis of the disease. As a diagnostic measure it ranks in value with the examination of the sputum. There should always be a microscopical and bacteriological examination of the fluid obtained in order to ascertain what organism is present. In no other way will it be possible to arrive at certainty with regard to the nature of the sporadic cases.

In all of the post-mortem examinations careful microscopic examination was made of the tissues. In general for histological purposes portions of the brain and cord and other organs were hardened both in Zenker's fluid and in alcohol. For the study of nerve degeneration small pieces of tissue were hardened in Muller's fluid or in formaldehyde, followed by Muller's fluid, preparatory to staining by Marchi's method. The amount of the exudation varied in the acute and chronic cases. In the most chronic cases there was general thickening of the meninges and only small masses of degenerated cells were found in the place of the former exudation. In cases dying two or three days after the onset there was but a slight amount of purulent exudation found. The amount of fibrin in the exudation varied, and was never so great as was found in cases of meningitis due to the pneumococcus.

In addition to the acute inflammation found in the meninges of the brain and cord, lesions of the tissue were found. In places there was a circumscribed infiltration of the tissue with pus cells which extended from the infiltration in the meninges. The vessels were dilated, and the spaces around the vessels filled with pus cells, which extended into the surrounding tissue. In two cases there was extensive softening, with purulent infiltration and hemorrhage in the cortex of the cerebellum. Lesions were found in both the white and gray matter, consisting principally in foci of fine hemorrhages, with some purulent infiltration. There was a definite increase in the cells of the neuroglia, both in connection with the acute lesions and at a distance from them. The neuroglia cells were swollen, their nuclei large and vascular, and contained much chromatin. Around these large nuclei there was a faintly stained irregular mass of granular protoplasm. Many of the cells contained two nuclei, and in places there were groups of four or more nuclei with a considerable amount of protoplasm around them. In all of these places nuclear figures were found. They presented the same form as other nuclei, and in some cases both spindles and centrasomes were distinguished. In addition to the changes in the neuroglia, proliferation was found in the connective tissue of the brain and cord around the blood-vessels. The inflammation of the meninges extended along the cranial nerves and along the anterior and posterior spinal nerve roots.

The cranial nerves most affected were the second, fifth and eighth. The examination of the eyes in two cases showed a choroido-iritis, which was due to a direct extension along the sheath of the optic nerve. Diplococci were found here and in the purulent exudation within the eye. The same thing was true of the ear. Secondary otitis media was found in a number of cases, some of which recovered. In all of these numbers of diplococci were found in the pus.

The nasal secretion in 19 of our cases was examined by means of cover-glass preparations, the material being taken from high up in the nasal cavities with the aid of a platinum loop. Of the 19 cases, 10 showed the presence in the nasal secretion of diplococci decolorized by Gram's method, and identical in morphology with the diplococcus from the brain. Similar Gram decolorizing diplococci were also found within leucocytes in the nasal secretion of two cases of convalescing meningitis. Attempts were made to isolate this organism in cultures in 10 cases in which microscopic examination showed them to be present, but without success.

With reference to the occurrence of this organism in the nasal secretion of patients not affected with meningitis 12 hospital patients chosen at random were examined. In the nasal secretions of two among these 12, diplococci like the preceding were found by coverglass examination. They were not cultivated. From the results of these examinations it would seem either that the diplococcus intracellulari may be met with in the nasal secretion of patients who have not meningitis or that other species of diplococci identical with this morphologically and in staining peculiarities may be found.

It is greatly to be regretted that it was not possible to obtain cultures of the organisms from this locality, for only by that method combined with inoculations can the identity be established. At any rate it is impossible to regard the presence of diplococci in the nose, decolorizing by the Gram stain, as of so much diagnostic value as has been claimed by Scherrer.

Degenerations were shown by the Marchi method in the nerves of both the brain and cord. The spinal ganglia were affected in all cases, and in four cases in which the Gasserian ganglion was examined an acute inflammation (sometimes to an intense degree) was found in this. Degeneration was shown by the Nissl method in the ganglion cells of the brain and cord. The studies of this degeneration have not been completed.

The condition of the lung is interesting on account of the relation which has very generally been supposed to exist between epidemic cerebro-spinal meningitis and pneumonia. In 13 cases there was merely congestion with more or less edema. In seven cases there was broncho-pneumonia, more marked in the lower posterior portion of the lung. In two cases there was characteristic croupous pneumonia, one in the stage of red hepatization bordering on gray. Pneumococci were found in these cases in cultures and on microscopic examination. In eight cases pneumonia due to the diplococcus intracellularis was found. Nearly all of these cases came from the last part of the epidemic. It is very possible that the lesions which in some of the earlier cases were described simply as broncho-pneumonia, were really due to the diplococcus intracellularis.

These lesions consisted macroscopically of areas of consolidation in various parts of the lung, more particularly in the lower lobe, and they were most numerous beneath the pleural surface. The foci varied in size from a pin's head up to that of a pea, and on section some of them resembled small hemorrhages in the tissue. In other cases the periphery of the area was distinctly hemorrhagic and the centre opaque and yellowish. In one case the consolidation of the lung was so extensive that it might easily have been regarded as croupous pneumonia, particularly as the pleura over it was covered with a definite fibrinous exudation. On section, this large area was composed of a number of irregular grayish foci, with softened centres, and with hemorrhagic and edematous tissue between them. The lung tissue in the yellowish centres was frequently broken down, and pus oozed from this. On microscopical examination, the central areas showed in most cases a purulent infiltration of the tissue with beginning abscess formation. The alveoli contained large numbers of pus cells; their walls were found infiltrated with pus and in places entirely broken down. The foci of consolidation did not appear to be bronchial in origin. The bronchi in the vicinity often contained pus cells but their walls were not infiltrated.

The duration of the disease in the cases in which diplococcus pneumonia was found was: in two cases, three days; in two cases, two days; in two cases, five days; in one case, nine days; in one case, 23 days; and in one case, 74 days. It will be seen from this that the lung complications due to the pneumococcus can take place in almost any period of the disease. In the case of 74 days' duration the lesions in the brain and cord could be regarded as almost completely healed, and the lesions in the lungs were acute. In one case in which the apparent history of the disease was of only two days' duration, the lesions were so advanced that they seemed possibly to antedate those of the brain, providing the history as given by the patient's relatives was correct. Immense numbers of diplococci were found in the pus cells in the lung. They were most numerous in the cells in the centres of the foci where softening was taking place. In the centre of one of the foci a small branch of the pulmonary artery occluded by a thrombus formed of pus cells containing large numbers of diplococci was found. It seems probable that this thrombus may have come as an embolus from the meninges and may have produced an infection of the surrounding tissue.

There was great variation in the size of the spleen. In general it was not much enlarged, and was probably smaller than in most of the acute infectious diseases. In only three cases was it found considerably enlarged. The average weight in the adult cases was 163 gm. The lymphatic glands in the uncomplicated cases were never found enlarged.

The liver presented no change beyond acute degeneration. In two cases extensive acute lesions were found in the kidneys. In one of these the acute lesions had no connection with the meningitis, but were due to an accompanying infection with diphtheria. In the other case there was an acute hemorrhagic nephritis. In this there was an accompanying acute pericarditis, the organism causing which could not be ascertained. The only lesions found in the kidney which could be properly attributed to the meningitis were acute degenerative lesions which were always present.

The intestinal canal was found normal in every case.

In two cases there was acute pericarditis, accompanied in one case with foci of necrosis and purulent infiltration of the myocardium. In several other cases in which the myocardium was examined histologically it was found normal.

Lesions of the skin were found in but one of the cases on which post-mortem examination was made. In this case over the upper and lower extremities, chest and abdomen, there were numerous small, dark-purplish spots in the skin, varying in size from a pin's head up to that of a pea. On microscopic examination of these areas there was intense congestion and dilatation of the blood-vessels of the skin, with small and diffuse hemorrhages immediately beneath the epithelium. In some of the larger areas there was some purulent infiltration in the centre. No diplococci were found in these lesions.

There is no doubt that acute meningitis may be produced by the entrance into the meninges of a number of infectious organisms. These forms are rarely primary. The organisms enter the meninges either by the formation of a communication between the meninges and some cavity where they may be accidentally present (as in the middle ear and nose) or by the extension to the meninges of an infectious process in the vicinity (mastoiditis, erysipelas), or they are brought to the meninges by the blood from some other focus in the body (pneumonia, endocarditis). In tuberculous meningitis we have never found a single case in which the lesions in the meninges could be regarded as primary. We believe that all infections of the meninges other than the diplococcus intracellularis are fatal, but this can only be determined by microscopic and bacteriological examination of the exudation obtained during life by spinal puncture. If tubercle bacilli, pneumococci or streptococci are found with the evidences of meningitis in a case which recovers, it would settle the point; clinical evidence, without spinal puncture, will not.

Dr. Mark W. Richardson read by invitation a paper on

RECENT BACTERIOLOGICAL STUDIES IN TYPHOID FEVER.

During the past two years no subject, perhaps, unless it be the antitoxin treatment of diphtheria, has inspired more interest among the medical profession, and occupied more space in medical literature than that of typhoid fever.

The cause of this unusual interest has been, as is well known, the discovery of a certain specific, so-called serum-reaction, which takes place when a fluid culture of the typhoid bacillus is treated with the blood of a person afflicted with typhoid fever. This reaction, consisting in a loss of motility in the bacilli, and in a clumping together of the individual organisms, has come to occupy a most important place among our methods of diagnosis. The blood conditions necessary for the production of this phenomenon may appear for the first time at almost any stage of the disease. The earliest recorded case was upon the third day. The average time is about the tenth day; and, in a minority of cases the reaction does not appear until convalescence, or perhaps not until the occurrence of a relapse. Unfortunately the number of these late cases reported continues to increase, and the value of the new phenomenon in diagnosis is thereby considerably diminished. In this connection the experience in the medical wards of the Massachusetts General Hospital since about the middle of August is interesting.[1]

Out of 45 cases there was a late reaction in seven, and these came upon the 19th, 23d, 25th, 31st, 37th, 38th and 41st days respectively. Of these, moreover, three appeared first in convalescence when the temperature had been normal 10, 12 and 21 days. We are forced, therefore, to conclude that, whereas a positive reaction indicates almost absolutely a typhoidal infection, present or past, a negative result carries with it little if any diagnostic significance, and in such cases we must look to other procedures, bacteriological or otherwise, for our diagnosis.

The isolation of the typhoid bacillus from the stools has always seemed a most logical method of diagnosis for typhoid fever; but, up to 1895, this procedure was accompanied by almost insuperable bacteriological difficulties. In 1895 Elsner and Capaldi, by the invention of suitable differential media, brought this method of diagnosis within reach; but the almost simultaneous discovery of the serum-reaction by Pfeiffer, and its perfection by Widal, deprived immediately typhoid stools of an interest which was already beginning to be considerable. With the experience, however, that the serum-test has its limitations has come a certain amount of reaction; and it seems probable that the bacteriological examination of the stools will come now into more general use, and make up partially, at least, for the deficiencies of the serum-test. Indeed, such a plan of action has been announced recently by the Board of Health of New York, and it is hoped that the system of public typhoid diagnosis in that city, already very complete, will become of even greater efficiency.

During the past year I have had a considerable experience with typhoid stools, and my conclusions have been in complete accord with those of most other observers. There are few cases in which the bacilli cannot be isolated, although, I must confess, the search can sometimes be a long one. The bacilli rarely appear before the end of the second week, although positive results have been reported as early as the seventh day. Further, the bacilli may persist for a considerable time after the cessation of fever, having been found as late as the 41st day of convalescence. In my work I have made use of the potato-gelatin of Elsner and the agar according to Capaldi, media which are not perfect, by any means, but which serve the purpose fairly well. Hiss, of New York, has announced recently a new differential medium, and it is possible that with it much better results can be obtained. In this connection I will refer once more to four of the seven cases mentioned above as having retarded serum-reactions. In three of these bacilli were cultivated from the stools of the 19th, 20th and 23d days, the reaction appearing first on the 19th, 23d and 25th days respectively. In the fourth case the reaction appeared first on the 37th day, whereas bacilli were found in the urine of the 36th day.

These cases, with other similar ones published by other observers, certainly go to show that cultivation methods can have a considerable value. The investigation of stools is, however, a task which requires not only a considerable knowledge of bacteriological methods in general, but also of typhoid differential media in particular, and the procedure is, therefore, hardly one to be employed by the profession at large. The serum-test, on the other hand, is more susceptible of general use, and could be carried out by any physician who has access to a microscope and a typhoid culture. The more one has to do with the serum-test, however, the more, I think, one realizes that a considerable experience is necessary, oftentimes, to interpret correctly the phenomena which take place under the microscope; and this fact, together with the necessary employment of fresh typhoid cultures, will throw most of this work into the hands of those connected with bacteriological laboratories.

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[1] The determination of the serum-reactions has been, in all cases, carried out by Drs. Badger and Potter, junior internes at the hospital. For permission to publish the results I am indebted to Drs Fitz and Shattuck, visiting physicians.

I wish to call your attention next to investigations which have been carried on recently with reference to the presence of the typhoid bacillus in the urine of typhoid patients. During the past three months I have made cultivations from 96 specimens of urine from 24 typhoid cases. In 26 of these specimens, representing seven cases, the typhoid bacillus was found. Moreover, the bacilli were always in very large numbers, and in practically pure culture. Indeed, a single drop of urine often contained thousands of organisms, and the gross specimen often showed a distinct cloudiness, due undoubtedly to the immense numbers of bacilli present. The organisms do not appear generally till late in the disease, about the end of the third week, but I have had a positive result as early as the 15th day. The presence of the bacilli in such large numbers is due, I think, not to their excretion as such by the kidney, but to their active multiplication in the bladder. Furthermore, I have found that the bacilli are practically always associated with a certain amount of albuminuria, but that, on the contrary, considerable amounts of albumin may exist without bacilli.

In proving the typhoid cultures thus obtained the following methods were used:

(1) Hanging drop, for size, shape and motility.
(2) Growth on gelatin stab and plant.
(3) Growth on bouillon.
(4) Growth on sugar agar. No production of gas.
(5) Growth on peptone solution. No production of indol.
(6) Growth on potato. No visible growth.
(7) Growth on litmus-milk. No coagulation. Very slight production of acidity.
(8) Two test solutions of Capaldi and Proskauer.
(9) Reaction to typhoid serum.
(10) Growth upon the typhoid differential medium of Hiss. Diffuse cloudiness with no production of gas.

The interest which attaches to this series of observations lies, as it seems to me, not so much in its relation to diagnosis as to disinfection and public health, for it has been found that four of the seven positive cases retained their bacilli in undiminished quantity up to the time of their departure from the hospital. Upon their discharge they were carefully instructed as to disinfection, and urged to send weekly specimens for further examination; but, as is usual, they have in most instances failed to do as directed. One specimen received ten days after departure still showed bacilli. In another the organisms had disappeared. I am, thus, not in a position to say how long typhoid bacilli may persist in the urine, but it is apparent that they remain long enough to be important factors in the starting of new epidemics. If it is proper to quarantine diphtheria patients until Klebs-Löffler bacilli can no longer be cultivated from the throat, it would certainly seem that typhoid convalescents, passing with every micturition pure cultures of the typhoid bacillus, should be subject to similar supervision.

Can anything be done to hasten the disappearance of the bacilli?

Upon this point my experience is confined to a single method of treatment applied to a single case. In this instance the bladder was washed out with antiseptic solutions. At first boracic acid was used in two-per-cent solution, but with little if any effect. Finally corrosive sublimate (1 to 7,000) was employed, and the bacilli disappeared entirely, not to return for thirty days at least. It would seem, therefore, that, in antiseptic irrigation, we have a possible means for freeing permanently these cases of their dangerous character. Whether it is possible to accomplish the same end by the internal administration of salol and similar remedies must be determined by further observation.

In a single case I have been able to isolate the typhoid bacillus from the sputum, and that, too, upon each of three consecutive days. This patient, during a relapse, developed in one chest signs indicating either a pleuritic effusion or a pneumonia. The diagnosis being in doubt an exploratory puncture was made with negative result, and a condition of pneumonia thus made very probable. I have since wondered whether, in another similar case, the presence of typhoid bacilli in the sputum might not be used as an argument for the presence of a pneumonia as against a pleuritic effusion. The sputum in 15 cases of uncomplicated typhoid fever showed no bacilli.

The association of a pneumonia with the presence of the typhoid bacillus suggests, of course, the causation of the one by the other, but such a theory can become tenable only after much more extended study and observation.

Finally, I have to report the results of three observations made upon typhoid cadavers, to determine, if possible, the manner in which the typhoid bacillus, as so often happens, reaches and infects the gall-bladder. The most probable theory has been that of an ascending infection from the intestine through the bile-ducts, although the possibility of infection through the circulation could not be absolutely ruled out.

In these three cases cultivations were made upon Capaldi agar from the contents of the colon, ileum, jejunum, duodenum and gall-bladder, and with the following results:

In Case 1, although there was marked ulceration of the intestine, and although the clinical course and serum-reaction all indicated typhoid fever, not a typhoid bacillus could be cultivated from any organ.

In Case 2 the gall-bladder presented pure cultures of the typhoid bacillus; but the intestine, though showing typical typhoid ulceration, revealed no typhoid bacilli.

In Case 3 also there was a pure culture of the typhoid bacillus in the gall-bladder. Moreover, the duodenum and jejunum showed similar pure cultures, and it was not until the ileum was reached that colon bacilli began to appear at all.

The result in this third case seems to me quite remarkable, and to speak very strongly for the theory of ascending infection. Unfortunately no cultures were made from the gall-ducts, so that the chain of evidence is not absolutely complete. Moreover, there is, of course, the possibility that the infection was originally through the circulation, and that the bacilli in the intestine were, so to speak, excreted in the bile, or, perhaps, what is more probable, the gall-bladder was infected originally through the bile-duct by a few organisms which, after indefinite multiplication, descended again in large numbers into the intestine.

These observations, then, while proving nothing, strengthen, I think, the theory of ascending infection. This must be my only excuse for bringing them to your notice this evening.

Dr. F. C. Shattuck: Dr. Richardson speaks of certain special sources of error in connection with the Widal reaction. I would like to ask a little more minutely what those are.

Dr. Mark W. Richardson: I referred especially to the small clumps which sometimes appear with blood from patients surely not typhoid. Perhaps still more confusing are the reactions that take place just on the limit of time, so to speak. The limit is set at one-half hour with a dilution of 1 to 10. If one gets a reaction in three-quarters of an hour with 1 to 10, one hardly knows what to say, and it is necessary then to judge by the manner of clumping and by certain forms of motility or lack of motility which the experienced eye takes in, and the significance of which one not experienced would be unable to appreciate.

PURULENT GENERAL PERITONITIS FROM CARCINOMA OF HEAD OF THE APPENDIX.

Dr. J. H. Wright: I wish briefly to report a rare case which has come under my observation in the autopsy-room of the hospital. The case was one of general purulent peritonitis of obscure origin. The autopsy failed to reveal any definite starting-point of the peritonitis. The appendix had some adhesions about it, but no good evidence of perforation. As a matter of routine the appendix was hardened and sections made. As a result we found a small primary carcinoma of the head of the appendix which this photograph is designed to show. You see just at the junction of the tumor with the wall of the gut a perforation which undoubtedly was the starting-point for the peritonitis. The other photographs show the finer structure of the tumor and the infiltration of the muscular coat with the cancer cells.

This occurrence of a primary carcinoma of the appendix seems to be a very rare one. I have not exhausted the search of the literature, but in the textbooks there is no reference to the occurrence of primary carcinoma of the appendix. The character of the tumor was the usual one seen in the alimentary canal — adeno-carcinoma, the epithelial cells tending to arrange themselves into tubules.

I have also here several microscopic preparations which I would like to show after the meeting, namely, a preparation from a case of glanders and a preparation from a case of actinomycosis, both of which were admitted to the hospital during the past six months.

BRAIN SECTIONS.

Dr. W. F. Whitney exhibited a series of sections of a brain with intra-cerebral hemorrhage, which had been prepared by Kaiserling's method.

(To be continued.)

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THE DIAGNOSTIC AND THERAPEUTIC VALUE OF TUBERCULIN AND ITS DERIVATIVES.[1]

BY A. C. KLEBS, M.D., CHICAGO, ILL., AND CITRONELLE, ALA.

(Concluded from No. 6, p. 123.)

As to the characteristics and the technique of the test, as such, I have already stated that the result depends very much on the preparation used. This fact has only recently been brought to general professional attention. Kasparek, Straus and others have, in opposition to earlier observers, noted the greater intensity in action of tuberculin derived from cultures of the bacillus of human tuberculosis, as compared with that from cultures of the bacillus of aviary tuberculosis. This is of some importance, as a good deal of the obtainable tuberculin is produced from this latter source, which of course modifies the comparison of results. But not only is it true that the source from which we take the bacilli for the culture affects the quality of the tuberculin derived therefrom, but more especially do the age, the virulency of the culture and the relative quantity of bacilli and culture fluid, as well as the nature of the medium used, the degree of concentration after evaporation and the time during which the culture was exposed to heat affect also its quality. In order to have always a uniform preparation of tuberculin I have used exclusively a tuberculin prepared in the laboratory of Dr. Edwin Klebs. This preparation is obtained by slowly concentrating cultures of equal age, virulency and volume to one-tenth of their original quantity. The concentration is obtained by evaporation on the water-bath, but in variation of Koch's procedure — *in vacuo* at a low temperature. We adhere to this process of evaporation at a low temperature, because the resulting preparation, though in every respect as active as Koch's tuberculin, seems to produce less annoying by-effects. This result may, of course, be accidental; but the results in all cases in which we used it — and we use it as a test in nearly every case — seem to corroborate this statement, that the by-effects are less serious.

In using this preparation I make up a one-tenth-per-cent. or a one-per-cent. solution in sterile water — not finding any advantage in the normal salt solution — measuring the desired quantity with a graduated pipette and taking it up into a syringe from a sterilized watch-glass. The injection is made anywhere in the body, preferably where the skin is loose, so as to make it easier to give the injection deep in the subcutaneous tissue and not into the skin proper, as the injection on the skin often causes very painful infiltration around the point of puncture, which may be the source of an elevation of temperature and therefore disturb the reliability of the test.

Before any injection is given the uninfluenced type of temperature is ascertained (temperature every three hours) for at least four or five days. The injection is then made, preferably in the morning (temperature taken every hour or two hours). As initial dose (for diagnosis) I use in nearly every case 0.0005 (one-half of the one-tenth-per-cent. solution). Many cases, especially those with inconsiderable lesions, respond readily to this dose. If no result is obtained within twenty-four hours I give another injection, but not before four days after the first injection. The dose I generally use then is 0.001 (one-tenth of the one-per-cent solution). If this is negative also, a week has to elapse before I make another injection of .005. If this be positive, I draw, generally, definite conclusions; if negative, and other general points induce any suspicion, I inject finally 0.01, but regard a positive result only as definite under certain circumstances; a negative one, of course, does not mean anything either way.

It is important now to consider what elevation of temperature is necessary to constitute a positive test. It is evident that temperatures of 102° F. and even 104° F., as we can observe them, are sufficient to make the test positive; but as it is not our intention to induce temperatures of such height, which certainly are not of indifference to the subject, we have to look out for other criterions. We can say that it is not alone the height of the temperature elevation which is a conclusive proof, but more so the character of the curve the temperature describes in the twenty four to thirty-six hours following the injection. Here it has to be noted that very often, I believe in the majority of cases, the temperature does not rise within a few hours after injection, but remains nearly normal throughout the whole day, showing typical elevation on the next day after twenty, twenty-four or even thirty hours. The fact that such delayed reaction occurs is worth noting. I once saw the patient of a colleague, to whom we had given a second test injection in the morning, call at the physician's house late in the evening to report with delight his normal temperature. The colleague was much in favor of abandoning the suspicion of tuberculosis on this evidence, but the high elevation of temperature on the next morning renewed his attention.

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[1] Paper read before the Boston Society for Medical Improvement, December 27, 1897.

The curve described by the temperature at the time of the febrile reaction usually shows a steep ascent, especially when setting in twelve hours or more after the injection. It stays at the highest point for a short time only (two or three hours are the exceptions) and descends critically. The descent by crisis is quite characteristic, and but few cases show an exceptional course. Rarely the critical descent reaches the normal line or even goes below it. Nearly always the temperature remains slightly elevated, and the temperature curve of the next day shows signs of disturbance. The temperature curve merits our closest attention; and the careful observation of it, especially the comparison of the curve one week before the injection with that after it, gives us more valuable information than the mere statement of a certain height reached, and the comparing it with the usually adopted standard of normal temperature. In general the temperature rise of two degrees Fahrenheit is necessary in order to conclude that the result of the reaction is positive, — at least I have found it so, and I always use the preparation referred to, excluding as far as possible any other reason for this elevation.

Taking into consideration all these facts, and remembering well that by no means can we regard the tuberculin test as an absolute diagnostic criterion, nor that its action is entirely specific, we have nevertheless to look at it as a most valuable contribution to our diagnostic outfit. The technique is extremely simple, and there is no reason why it should not become as necessary a part of every physician's diagnostic appliances as the stethescope, speculum and microscope; and more than that, just as free examinations of sputum are made in order to obtain the early diagnosis of the disease in the poor, free stations should be established for the application of the test in large cities. The early diagnosis of phthisis has everywhere been recognized as of the highest importance, and yet this valuable test in the lapse of seven years has reached the full appreciation of veterinarians and cattle-growers only, and this after and with hard fighting. It is astonishing how few physicians recognize its full value. When, seven years ago, Koch's celebrated words that "phthisis in the beginning can be cured with certainty by the remedy," were repeated in the different parts of the world, the closest attention was paid everywhere to the investigations following, and every one tried to contribute his share to the statistics which accumulated in enormous numbers. But after the storm was over and the "certain cure" remained still to be found, the whole subject was dropped, and even the diagnostic value forgotten. And, besides, diagnostic improvements in general do not find their way as easily as "sure cures" — even the microscope is still a *terra incognita* to so many. Furthermore, there seems sometimes to be an aversion to the early pronouncing of the diagnosis of tuberculosis — personal considerations, and wrongly applied delicacy are often to be blamed for it. Nevertheless, there has been much progress in this line, and tuberculosis is no longer regarded so universally as the hopeless scourge of suffering humanity.

Now there are better-founded objections to the general introduction of tuberculin as a diagnostic test of human tuberculosis and these are chiefly its alleged danger to the patient. The anatomical investigations which induced the "tuberculin Katzenjammer" showed clearly that direct harm was often done by the injection, the possibility of mobilization and dissemination of the bacilli, produced by the activity of the reactive changes have been clearly demonstrated by careful observers (Virchow and others). But we have to remember that very high doses were used at that time — doses which are in no way necessary for mere diagnosis. The *small* doses which we use for diagnosis are perfectly harmless; and I have, in accordance with the experience of others, never seen any danger resulting from them. We regard generally .02 as the maximum dose which can be injected safely; still we would not begin the test with this dose, but always start with doses of decimilligrammes. In the literature on the subject we find great differences in the opinions about the needful dose. As already said, this is probably due to differences in the preparations employed. So, for instance, Grasset and Vedel (Montpellier) who use .0002 or .0003 for the first injection, regard .0005 as conclusive; Troudeau's highest dose is .003, Straus regards .01 as giving a reliable test, while Maragliano gives even higher doses.

I have dwelt at some length on the diagnostic value of the preparation, because that is by far the most important part of its usefulness. The diagnosis of early phthisis will always remain the first condition for its successful treatment. Whatever specific may still be discovered, its application will then only have true value when applied to those cases which have no extensive and constitutional changes, which by antitoxic or antibacteriological procedures alone cannot be overcome, and which are again and again the source of new infections.

Koch's claim that the early cases of tuberculosis can be cured with certainty, had no scientific basis at all, nor have any proofs been given of it since that time. We can attain with repeated injections of tuberculin a certain immunity against this preparation itself. But although this process of immunization is often accompanied by a remarkable general and symptomatic improvement it does not produce the definite arrest of the disease. Tuberculin-immunity does therefore by no means signify immunity to tuberculosis. Tuberculin represents a part of the toxins contained in the bodies of the bacilli and in the culture fluid, and this is an indefinite modification. This is sufficient reason to make the crude tuberculin unfit for the purpose of immunization, but there are more practical reasons also:

its high toxicity especially forbids its prolonged use even in weak doses. There has been recently a tendency to attribute good results to its action when used in these weak doses, which do not rise to objectionable by-effects. I have found that doses of even decimilligrammes, when given for a long period, without causing any marked reaction, seem to have a decidedly objectionable effect on the circulatory and uropoetic system, a marked albuminuria having been observed in almost every case. These are signs that the preparation, even in small doses, has not an indifferent action. Experience teaches that in the treatment of tuberculosis the Hippocratic principle "not to do any harm" has to be strictly adhered to; and as pathological observations have undoubtedly shown that very serious damage may be done by the prolonged use of it, it is necessary to abandon it, at least in its original form. As to the small doses which warrant an adherence to the *nil nocere* principle, there are no evidences that they give final and definite results.

The question as to how we may explain improvements after the use of such doses of tuberculin has not yet been satisfactorily answered. The theory of its producing necrosis in the tubercular tissue and in this way helping to eliminate the bacilli is correct, but does not cover all possibilities. We see sometimes, in lupus, after certain doses (small) a local reaction without general symptoms or fever, but this does not occur often enough to warrant us in drawing similar conclusions on the same results in pulmonary lesions. Its most probable method of action is by gradual immunization, by transformation of the toxins into antitoxins in the body, or by the stimulation of such antitoxic qualities, naturally in the organism.

Koch's new theory that his old tuberculin or his T. O. conveys only toxin immunity, while T. R. produces bacterial immunity, may be correct as far as T. O. is concerned, but does not hold for the old tuberculin, which contains the active principles of the culture in changed form (by heat). We have therefore adhered to the method of concentration *in vacuo*, which preserves to a certain extent the normal entity of the bacillus and its culture. Koch's newest method of preparing his tuberculin excludes heat entirely and employs for the total extraction of the active principles of the bacillus (without the culture fluid) physical means only. The method as used by him, the triturating of the bacilli in a mortar, cannot possibly be carried out aseptically, hence the unanimous reports of frequent contamination of this preparation by other bacteria. The larger the quantities produced by this method, the greater are the chances of such contamination. I have made experiments with T. R. which was not contaminated and found it to give much more violent reactions than the crude tuberculin. I would therefore attempt to use it even less than the old tuberculin.

Another method of preparing tuberculin, and at the same time preserving the chemical integrity of the culture, has been carried out, closely imitating Buchner's procedure of isolation of the active substances contained in yeast (zymasis) by hydraulic pressure. A contamination can be excluded more easily by this method and the preparation derived by it seems to offer similar properties to Koch's new tuberculin. Nevertheless the fact remains that in all the preparations so derived directly from the bacillus, there are contained bodies of unknown chemical constitution which, even in extremely small doses, have a most deleterious effect on the human economy. They also seem to favor the mobilization and dissemination of the bacilli.

Edwin Klebs has very carefully studied the different bodies which he could isolate by chemical means from the bacillus and its culture soil, and has found two groups chiefly of albuminoses, whose physiological action shows striking differences. One has a marked effect on the heart and the vaso-motor system, similar to that of certain alkaloids, while the other seems to represent the curative properties, which he regards as being anti-bacterial. Koch admits, also, in his newest publication, the presence of anti-bacterial properties in the bodies of the bacilli, a fact which he has always denied heretofore, and which was for seven years upheld by E. Klebs in opposition to the discoverer of tuberculin. By certain alkaloid reagents Klebs was able to precipitate those substances which have only toxic properties, and he arrived in this way at an albuminoid body which is almost free from such toxic admixtures and seems to develop curative changes without disagreeable or deleterious by-effects. I have seen the animals which he has treated with this substance, which he calls tuberculocidin, and there is no doubt that they show evident signs of arrested tuberculosis. It is to be wished that these experiments may be repeated by other observers.

I have been using tuberculocidin on a great number of cases, but do not think that I am in a proper position to speak either favorably or unfavorably of it. In all the cases treated we have carried out rigid measures of a hygienic and dietetic nature, with all the important details of a systematic treatment, under direct supervision, in our institution in Citronelle, where there are favorable climatic conditions. We know that these measures alone have yielded most excellent results since the time Brehmer introduced them to us. As I hear, Dr. E. O. Otis has already addressed you on this subject and I am certain it has found an excellent defender in him. Nevertheless I cannot help feeling, that since using tuberculocidin I have had better results than before, especially when I note its action in advanced cases, in which all other methods are powerless.

The great difficulty in judging of the value of any remedy in tuberculosis is the almost absolute impossibility of obtaining reliable statistics. The prolonged course of the disease is probably the chief difficulty, for after the first improvement the cases treated escape further observation; and so many cases reported as cured have soon after the report taken a "heavenly course," we make it a rule not to pronounce any case cured before at least two years have elapsed, and then only with certain limitations and instructions. Statistics covering a term of years below this limit have no conclusive value whatever, they serve only as a guide for a modification of our method beside showing what has proved to be reliable in past experience. Another obstacle to reliable statistics is the present classification of the cases in stages, referring to the probable underlying pathological lesions and their extent. This is most unsatisfactory, but it is difficult to see how a change for the better can be made. Perhaps the further development of the tuberculin test promises a solution.

If tuberculin did not prove itself to be what its discoverer claimed for it, it has certainly furthered the cause of the investigation of tuberculosis in general, and this has been one of the most neglected subjects of internal medecine. It is to be hoped that the development of this subject will be of still greater help in the fight against humanity's bitterest foe. Tuberculin has certainly already helped in the prevention of the disease; and this is much. As to those methods of treatment which are easily accessible to everybody, and which need only more general attention and energetic elaboration, I mean the hygienic, dietetic, and especially the institutional methods of treatment, — they will lose none of their value by the discovery of the long-looked-for specific. On the contrary, just as we need laboratories in which these questions may be worked out scientifically, so also we need institutions where the results obtained may be applied correctly, where accurate ideas about the disease may be taught, and where measures may be carried out beneficial both to the individuals treated and to the many with whom they may come in contact later. Only the collaboration of these two factors will assure the best results.

Summarizing our conclusions on tuberculin, we may say:

(1) That tuberculin is a most valuable aid in the diagnosis of early human tuberculosis, with due observation of limitations.

(2) That there is no danger in its application as a diagnostic test.

(3) That a tuberculin prepared always after the same method and standardized by previous animal tests should be used in order to insure uniformity of results.

(4) That the therapeutic value of the crude tuberculin is limited by its injurious by-effects.

(5) That the method of preparing the new tuberculin of Koch makes it impossible to exclude contamination with other bacteria and therefore renders it dangerious for *therapeutic* purposes.

(6) That also a non-contaminated preparation of new tuberculin offers the same and even greater dangers in its application as a *remedy.*

(7) That by elimination of certain toxic substances from any of the tuberculin preparations (or perhaps by their passage through an animal body), a preparation (tuberculocidin) can be obtained, curative properties of which can be demonstrated in animal experiments, and which seems to influence beneficially early cases of pulmonary tuberculosis.

(8) That we have no remedy and probably never will have a remedy of absolute certainity in tuberculosis in its different stages; and that the eradication of the disease can be successfuly attempted only by the united efforts of the different communities; by rigidly inforced methods of prevention; by isolation of already infected cases in well-directed special institutions and by the general education of the public on the subject — in one word, by a sincere fight, like the one now so successfully undertaken in this State of Massachusetts.

The Editor of the "British Medical Journal." — The council of the British Medical Association, at a meeting held January 19th, unanimously elected Dr. Dawson Williams editor of that paper. Dr. Williams has been assistant editor for the past seventeen years, and had full editorial charge during Mr. Hart's absence.

EYE-STRAIN.[1]

BY FREDERICK C. CHENEY, M.D.

The importance of eye-strain as an etiological factor in the various forms of functional headache is now so well recognized, both by the medical profession and laity, that I shall refer to this subject but briefly. An ocular headache is usually accompanied by more or less pain in the eyes, although it is often entirely absent, and the patient can read or sew for hours without discomfort. The sight may be defective, though in a large number of cases it is normal or practically so — for distance and near. There may be intolerance of light, increased lachrymation, redness of the eyeballs or lids, or these symptoms may be entirely absent. In other words, the fact that the eyes seem perfectly well to the patient and appear perfectly normal to an observer does not exclude eye-strain as a possible cause of the trouble. In regard to the situation of the headache: it is most often frontal or occipital, but it can be general or localized in any part of the head, and vary in character from a dull pain to a neuralgia of the greatest intensity. It is sometimes accompanied by nausea and vomiting, though there may be no stomach disturbance whatever. It may begin in the morning and wear off during the day, or begin late in the day, gradually increase in severity and finally be relieved by a night's sleep. It may occur daily or at irregular intervals, or assume more or less of a periodic character. In fact, any case of recurrent headache, not of organic or toxic origin, may be ocular, and probably the larger proportion is.

I wish especially, in this paper, to call attention to two or three other conditions that are dependent, to a greater or less degree, upon eye-strain.

Vertigo arises, of course, from various causes, and is not infrequently a symptom of serious organic disease. There are many cases, however, that are of ocular origin. At times it is associated with asthenopia and headache, but it is often met with in individuals who have little or no pain in the head and comparatively little discomfort in using the eyes. It may occur at any age, but in my experience is more frequent during the latter half of middle life, and is then apt to be regarded by the patient as a forerunner of apoplexy. The attack is often of an extremely mild character, causing the patient but momentary discomfort, while in other cases it lasts for a number of minutes and is of sufficient severity to necessitate sitting or lying down. A mild feeling of dizziness frequently accompanied by slight nausea and lasting for hours is another form of the trouble, and being generally associated with prolonged use of the eyes, its origin is more often recognized by the patient. In regard to frequency, there may be a number of attacks during the day, or they may be separated by intervals of days or even weeks.

Drowsiness, as a result of eye-strain, is not very generally recognized, or, if so, is not regarded as of sufficient importance to demand serious attention. Preceding sleep, it is, of course, an agreeable physiological condition. Occurring during the day, or in the early evening, it is an annoyance, and at times an extremely irritating one. To the average individual, it is of no great consequence: he gets sleepy when he tries to read in the evening, concludes that he has worked too hard or eaten too much, as he often has, and goes to bed. If the drowsiness happens to be associated with pain in the eyes, or headache, an oculist will probably be consulted, and it will disappear after the eye defect has been corrected.

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[1] Read at the Clinical Section of the Suffolk District Medical Society, November 17, 1897.

I was consulted a few years ago by a minister whose only symptom of eye-strain was extreme drowsiness on attempting to write his sermons. There was no pain in the eye or head, and he could see well enough in a good light. He was forty-five years of age, and had come to the conclusion that the trouble resulted from an effort in using the eyes, which proved to be the case. Another patient, a bookkeeper, who suffered still greater annoyance from this symptom, was seen last year. There was some headache and asthenopia. but his especial complaint was of feeling tired and sleepy most of the time. He often found it almost impossible, even during the morning hours, to keep awake when at work on his books. He had taken a vacation, but the trouble began again when he returned to his work. An examination showed a considerable degree of astigmatism, and correcting glasses were prescribed for constant use. He reported three or four weeks later that the drowsiness had almost entirely disappeared and that he was feeling much better generally. These two cases are not exceptional, and I have reported them simply to illustrate the degree of annoyance that may sometimes arise from this symptom.

Every practitioner is familiar with the patient who complains of feeling mean and played out most of the time, but has nothing especial the matter with him. He gets up feeling tired, and is glad when night comes. He sometimes improves under medical treatment, but is often overworked and needs a rest. Most of these patients get better, and an occasional bracing up keeps them in running order. Some of them feel well only occasionally; they go through life tired, and seem intended for a life of leisure rather than for hard work. Others break down and have "nervous prostration." All this misery cannot, of course, be attributed to eye-strain, but it is undoubtedly a fact (and one becoming more generally recognized) that many of these cases gain faster, and are less liable to "break down" in the future, if an existing eye-strain is relieved. With the class that may be called *eye-laborers* — students, bookkeepers, sewing women and the like — the ciliary is probably the hardest worked muscle in the body, even if the eye is normal. If, in addition, this muscle is called upon to correct hypermetropia or astigmatism, it is not surprising that the added strain is often the last straw in breaking down the overworked man or woman.

PROOF-READERS' MISTAKES — "Among the sickness of the plague in India are a colony of monkeys, near Hurdwar, and the authorities are now busily engaged in trapping and isolating deceased animals." — *Medical Press and Circular.*

Trapping would seem to be an unnecessarily difficult method of catching "deceased" animals. Under the heading, "A Bloodthirsty Physician," the same journal notes the following misprint: "Our attention is called to an advertisement of Aseptolin-Edson, which is appearing in the medical journals, containing the startling statement: 'Out of a number of cases of consumption treated therewith, only one proved unsatisfactory. Aseptolin has far surpassed our most *sanguinary* expectations'"

Clinical Department.

TWO CASES OF ABSCESS OF THE LIVER.[1]

BY HENRY JACKSON, M.D.,
Assistant Visiting Physician, Boston City Hospital.

CASE 1. Geo. McK., twenty-one, single, suffering with multiple small abscesses in the liver, entered my service on July 24th. The previous history was negative except that three years before his entrance to the hospital he was confined to bed by an acute appendicitis. At this time he was in Providence; according to the statement of the patient there was a tumor in the region of the appendix, with severe abdominal pain. No operation was performed. The pain lasted about one week, but the patient was confined to his bed for four weeks. Since then his health has been good.

For two weeks before entrance to the hospital his appetite was poor; he had headache and at times vertigo; there was also some palpitation and distress in the region of the heart. He continued at his work as a surveyor on the Boston & Albany Railroad at Newton until four days before entrance to the hospital; then after a hard day's work he had severe pain in the right iliac region which caused him to stoop forward when standing; nausea and vomiting soon followed. Two days later there was a chill followed by sweating, severe headache and delirium; the next day several chills, fever, vomiting and a good deal of pain in the right iliac region. The bowels were constipated.

Physical Examination. — Expression is somewhat anxious. Mind perfectly clear. Some tenderness in the back of the neck, a symptom noted as cerebrospinal meningitis was considered as possible in that at the time there were several cases of this disease in the hospital. No enlargement of the heart; at the base a soft musical murmur heard over the pulmonic area. Lungs, liver, spleen, not abnormal. There was general abdominal tenderness, most marked in the right iliac region, where gurgling was felt; no rose-spots.

Examination of the blood showed no plasmodia malariæ. Leucocytes, 7,800.

July 26th. No change in general condition. A positive Widal reaction was reported. I consider that this was probably an error due to some fault in the technique, as several subsequent examinations gave a negative result.

July 27th. Leucocytes, 8,000. Quinine was given, 20 grains after the temperature fell a degree and a half. The quinine produced no effect upon the fever or the chills.

July 30th. Mental condition bright. No complaint was made of abdominal tenderness. The spleen was found to be somewhat enlarged. No enlargement of the heart. There was some tenderness in the right side of the abdomen, but there was not sharply localized tenderness at McBurney's point. There was no rigidity of the muscles of the right side of the abdomen, and the legs were fully extended without causing pain. Severe chills recurred daily towards five o'clock and on the 27th, 29th, 30th there was also a chill in the morning. Leucocytes, 16,800.

July 31st. Leucocytes, 23,000. Slight jaundice appeared to-day.

August 1st. Leucocytes, 33,000.

Up to August 5th there was a gradual loss of flesh and strength. The jaundice became more marked, and the liver extended from the 20th interspace to just below the ribs. There was slight dulness in the lower part of the right back.

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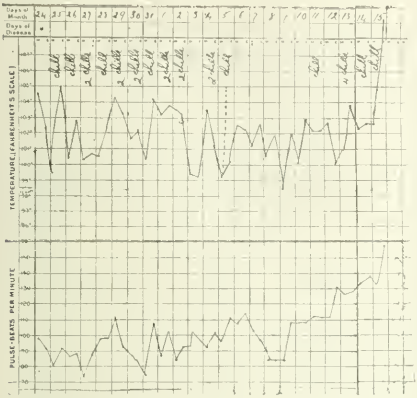
[1] Read at the Clinical Section of the Suffolk District Medical Society November 17, 1897.

After consultation with Dr. Munro it was decided to aspirate the liver, on the supposition that we had to deal with an abscess of the liver. He was etherized, and three punctures made in the region of the liver anteriorly, and one posteriorly. All were negative.



From August 5th to August 11th there were no chills, and his general condition improved a little.

August 12th. Leucocytes, 19,000.

August 13th. Again a chill. I saw him on the surgical side, and suggested as a possible diagnosis malignant endocarditis, considering this diagnosis probable in view of the negative result of the puncture made, and because a new murmur had appeared in the mitral area. The abdomen was a little tympanitic, and there was some tenderness in the region of the appendix.

August 15th. There was a violent chill at 10.30 P. M., his temperature rising to 109.5°. His death occurred three hours later. Up to the last his mental condition was bright, modified only by mild delirium at the time of the intense fever which followed the chill.

In arriving at a diagnosis we considered typhoid fever, appendicitis, malignant endocarditis, general tuberculosis, pyemia from some source not determined, and abscess of the liver.

Autopsy. Two hundred c. c. brownish fluid in the peritoneal cavity. Old adhesions between the great omentum and the right iliac wall. The appendix and cecum were bound down by old adhesions. The interior surface of the appendix was roughened and the walls thickened. Heart and lungs not abnormal. Spleen, 475 gm. Liver enlarged. On the anterior surface many small white patches, especially on the left lobe; on the under surface multiple abscesses. On section many abscesses found, especially in the left lobe. The portal vein was occluded by yellow adhesive thrombi and pus.

Anatomical Diagnosis. — Chronic appendicitis and chronic peri-appendicitis, multiple abscess of the liver, abscess of the mesenteric glands, acute splenic tumor.

The origin of the abscesses in the liver was obscure, as there was found aside from the acute supperative process in the liver only the chronic appendicitis and the acute inflammation of the mesenteric glands. The duration of the disease was seven weeks, four before entrance to the hospital and three in the hospital; so it is possible that the primary trouble may have been an exacerbation of the chronic appendicitis, especially as there was found in the appendix a little inspissated pus, though there was at the time of the autopsy no evidence of a recent acute inflammation.

Case II. The history of this case is very incomplete and I report it only because of the interest attaching to the rare disease found, namely, amebic abscess of the liver.

On July 28th an old man was brought to the hospital in a state of marked collapse. He had walked into the Boston Dispensary, and was at once sent to the hospital by ambulance. He was pale, covered with a cold sweat; pulse small, intermittent and irregular. There was abdominal pain, and a history of obstinate constipation for eight days and no movement for five days. It was considered indiscreet to operate at once, and he was placed in bed and stimulants given.

I saw him in consultation with Dr. Munro the next day. In the right hypochondrium was a large, tense, hard mass, extending about four inches below the edge of the ribs. The liver dulness began in the fourth interspace. Over the lower right front a friction sound was heard. The diagnosis appeared to be between an enlarged liver and subphrenic abscess with depression of the liver.

At the autopsy there was found an enormous amebic abscess of the liver; amebæ were found. In the upper part of the colon were two chronic ulcers.

There was during life no history of a preceding dysentery. His wife said he had had good health up to the last four years, though he had been subject to attacks of obstipation.

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CANCEROUS STENOSIS OF THE PYLORUS.[1]

BY G. LIEBMANN, M.D.

The case I wish to report is that of a man forty-three years of age who had always been well up to the time of the advent of his fatal sickness, a little over a year ago; a man who did not offer symptoms of emaciation — he was thin before — but he had not a cachectic appearance at all. His appetite was good from the start of his sickness until he died. That was one of the most peculiar phases in this case, that his appetite was good from the start. He was taken about one year ago with what appeared to be paroxysms of spasmodic pains or cramps in the epigastrium and in the right hypochondrium. At first it was thought the paroxysms indicated gall-stones. The liver was enlarged and the region of the gall-bladder somewhat tender. These paroxysms soon lapsed into continuous suffering so that the man could not sleep and could not enjoy life at all unless under an anodyne; a small quantity of an anodyne would relieve him. His appetite, as stated, was good; tongue was clean; and the examination of the contents of the stomach showed that there was hydrochloric acid present in more or less normal quantities. The total acidity was at first 90, later 44. The pain complained of in the epigastrium could not be localized to one point as in ulcer. The man was sitting continually supporting his epigastrium so much was his suffering. After a test-supper the stomach never was found empty in the morning, and even after a fast of twenty-four to thirty hours his stomach was never empty. One characteristic was that the stomach was never clean, no matter how long the irrigation lasted. Under these circumstances I came to the diagnosis of pyloric stenosis, recommended the man to go to the Massachusetts Hospital, and suggested an operation for relief. In case it should be a malignant growth of the pylorus it would at least make him comfortable for the rest of his days, or in case it should be a benign thickening, an hypertrophy or hyperplasia, it might be expected that the man by the establishment of gastroenterostomy might be saved entirely. Apparently the hospital physicians disagreed with me, and the patient was soon again discharged.

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[1] Read at the Clinical Section of the Suffolk District Medical Society, November 17, 1894.

He came to me again with the same symptoms of stagnation and retention of food in his stomach, and his suffering increased. I treated him for a little while with intra-ventricular faradization, which relieved the pain for a few days, and also relieved the retention of chyme in the stomach. The washings showed for one week a better condition; there was not quite as much food retained as before, but this lasted only one week, and then there came grumous masses that seemed to indicate admixture of blood. His condition grew worse and worse, so that I gave him a letter to Dr. Einhorn, of New York, who agreed with me that there was a mechanical obstruction, and in so far dissented with me that he assumed the presence of a carcinoma, from the fact that he thought on palpation he felt a tumor; besides, on account of the liver being enlarged and a few of the inguinal glands being swollen, he became still more firm in that conclusion. I had inclined to the diagnosis of ulcer with cicatricial thickening, on account of the presence of the normal amount of hydrochloric acid and on account of the appetite (as mentioned before) being intact, a fact I never before noticed in any cancer, also on account of the absence of the thick fur and covering of the tongue generally found in cancer; and, furthermore, there were some other symptoms missing that do not occur to me now. In my practice I always found a great repugnance to meat in cases of cancer. This man liked to eat meat up to his last days; and in consideration of all these symptoms, with the high percentage of acid being present and no tumor being felt by myself, I had come to the diagnosis of ulcer. As the result showed, I was mistaken in that.

There was found, upon the operation being performed by Dr. Willy Meyer, of New York (in the German Hospital), a carcinoma involving the pylorus and also extending along the lesser curvature. The man died soon after the operation, I am sorry to say. I wrote to Dr. Einhorn about the cause of death, and he could only tell me that the operation was performed successfully. A communication was established between the stomach and the jejunum, but very likely there was heart failure, although the doctor wrote that the surgeon told him that an embolus in the brain might have been the cause of death. I want to bring this before the Society on account of the atypical course in this case of cancer. There was also absent lactic acid.

A CASE OF ANTITOXIN POISONING.[1]

BY JOHN LOVETT MORSE, A.M., M.D.,

Physician to Out-Patients at the City Hospital and at the Infants' Hospital, Boston.

A. B., male, thirty-two, and, as far as known, in good health, developed on April 28th, after a week of continuous exposure to diphtheria, a slight sore throat. The throat was generally reddened and rather dry. No culture was taken. As a precautionary measure he was given five cubic centimetres (500 units) of the Massachusetts State Board of Health antitoxin. It was injected with aseptic precautions and no local symptoms developed at any time at the seat of injection. The throat was entirely well by May 1st.

He remained in his usual health until 12.30 P. M., May 3d, when a slight urticaria was noticed. By 1.15 P. M. there was marked malaise, chilliness and vertigo. At 2.15 P. M. he fainted while telephoning. He was put to bed; and the body, face and extremities were found to be covered with large blotches of urticaria, so profuse as to be almost confluent. The chilliness and vertigo continued, and nausea developed. There was no headache, however, and the temperature was normal. There was no diminution of the urticaria until 6.00 A. M., May 4th, and it did not entirely disappear until several days later. The whole surface of the body was covered all the time, but the severity of the process varied in different portions at different times. At one time the face would be puffed up; at another the feet would swell enormously; at another the hands; and so on. The swelling was greater in the feet than elsewhere, however. The thighs were deep purple, and remained so for several days. The nausea continued, and by 6 P. M. vomiting came on, and continued uninterruptedly every fifteen or thirty minutes for twelve hours. The vomitus was watery, acid, and occasionally bile-tinged. During the night the uvula and pharynx became considerably edematous. This undoubtedly extended down the esophagus to the stomach, as swallowing was difficult and caused pain throughout the whole length of the esophagus. This was not relieved before the night of May 4th. The respiratory mucous membrane was fortunately not involved. The temperature remained normal, but the pulse was rapid and irregular. There was no diarrhea. There was, however, almost complete suppression of urine, only three or four ounces being passed in twenty-four hours. This was very thick and high-colored but did not contain albumin. At the end of the first day a general glandular enlargement had developed, which lasted for about ten days. Those in the groins were as large as walnuts. The patient was much prostrated, lost nearly ten pounds in weight, and was unable to resume his work for a week.

Two explanations for these unusual and severe symptoms naturally suggest themselves, namely, some idiosyncracy on the part of the patient to horse serum, or something toxic in the serum. Neither explanation seems entirely satisfactory in the present instance, however; for the patient had two years previously taken seven cubic centimetres of Behring's antitoxin with no bad effects beyond a slight urticaria, lasting twelve hours, on the thirteenth day; and the serum from this horse, taken at the same time, was used in other cases without evil results. No one, however, was injected from the same bottle. It is barely possible that some fermentative process may have occurred in this bottle and have caused the trouble. It may be, however, that the patient was unusually susceptible at this particular time. At any rate this experience emphasizes the disagreeable, if not dangerous, symptoms which may occur as the result of injections of horse serum and suggests caution in the indiscriminate use of immunizing injections.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, November 17, 1897.

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Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

E. W. TAYLOR, M.D., SECRETARY.

REGULAR Meeting, Wednesday evening, November 17, 1897, DR. F. W. WHITNEY in the chair.

DR. F. E. CHENEY read a paper on

EYE-STRAIN.[1]

DR. J. L. MORSE reported

A CASE OF ANTITOXIN POISONING.[2]

DR. H. JACKSON: Three years ago before Dr. McCollom had charge of the South Department I was on service in the contagious wards of the Boston City Hospital after the introduction of antitoxin. In a considerable proportion of cases there was some skin lesion of a varied form following the antitoxin. This rash appeared in some instances as late as three weeks though usually about a week to ten days after the injection of the antitoxin. The usual eruption seen was a simple urticaria, but several cases were seen in which there was a rash which it was extremely difficult to diagnose from a beginning scarlet fever: the rash was certainly scarlatiform. In children, and most of the cases of course were in children, there was considerable elevation of temperature, the temperature at times rising to 104° or 105° F., and in such instances the children appeared very sick, often more sick than they had with the original disease. I have not seen an extension of the disease into the buccal mucous membrane, and my chief impressions of the disease would be that it is multiform in its manifestations, usually accompanied by fever, and in children, at any rate, usually producing pretty severe general symptoms. I know of one case in an old lady in whom the symptoms were very severe. There was in that case a severe heart collapse, similar to the symptoms suggested by Dr. Morse's paper in the irregular pulse and rapid heart, and for a time her life was considered to be in considerable danger. She ultimately recovered. I know of no case at the City Hospital in which death has ensued as result of this poison. I think no satisfactory statistics have been collated to suggest what might be the origin of this rash; but I know it has been suggested in Germany that it was found only in the blood from certain horses. I remember reading that the blood of one horse was given up; they did not use it because so many cases of urticaria or skin lesion arose in the use of the blood from that animal. It does not seem to me very likely that it is due to some extraneous poison. I think the poisonous principle lies rather in the serum of the blood of the particular horse or in some entirely unknown quantity connected with the manufacture of the antitoxin in the blood of the horse rather than in some extraneous form of decomposition.

DR. J. L. MORSE: In this case I wished to call attention especially to the very acute onset of the symptoms and to the fact that they were apparently entirely vaso-motor in origin.

DR. H. JACKSON reported

TWO CASES OF ABSCESS OF THE LIVER.[3]

DR. G. LEIBMANN read a paper on

CANCEROUS STENOSIS OF THE PYLORUS.[4]

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MEDICAL SOCIETY OF THE STATE OF NEW YORK.

NINETY-SECOND ANNUAL MEETING, ALBANY, JANUARY 25-27, 1898.

FIRST DAY. — MORNING SESSION.

THE meeting was opened with a prayer by the REV. CHARLES A. RICHMOND, of Albany.

The President, DR. SENECA D. POWELL, then delivered his

INAUGURAL ADDRESS.

The affairs of the Society throughout the State were reported as prosperous and in the same excellent condition as in the past, the only shadow being the death of twelve members. The work of the State Board of Examiners was commended. During the year 862 candidates for license to practise medicine were examined, 627 being accepted and 235 rejected, an average of 22 per cent. The defective law in regard to the sale of poisons was touched upon, and it was recommended that the Society take some action in the matter. It was also recommended that no change be made in the method of electing the officers of the Society or in the place of meeting, that is, Albany.

The annual report of the Treasurer was read, showing a balance on hand of $2,877.65.

The annual report of the Committee on Legislation followed, in which was detailed its work during the year. This consisted chiefly in opposing bills which would have been injurious to medical men had they been allowed to pass.

The annual report of the Regents' Office was then read. It was also stated that of the 862 applicants examined for license to practise, 545 were graduates of New York institutions, and that their examination papers were more satisfactory than those presented by graduates of medical colleges of other States. The zeal shown by the medical colleges of the State in elevating their standard was highly commended.

DR. WENDELL C. PHILLIPS, of New York, read the first paper of the day, entitled

EAR MANIFESTATIONS IN GENERAL DISEASE,

in which he called attention to the fact that but little attention is given to ear symptoms accompanying the exanthemata and other debilitating constitutional diseases. Carious teeth and adenoid growths in the pharynx were also given as common cause of middle-ear disease and consequent deafness.

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[1] See page 153 of the Journal.
[2] See page 156 of the Journal.
[3] See page 154 of the Journal.
[4] See page 155 of the Journal.

Dr. **Lucien Howe**, of Buffalo, emphasized the importance of treating these ear symptoms early before they have become chronic.

Dr. **Holt**, of Portland, Me., also spoke in the same strain, and referred to ear manifestations occurring in the course of Bright's disease.

Dr. **John O. Roe**, of Rochester, then read a paper upon

CASES OF ACUTE NON-DIPHTHERITIC INFLAMMATION OF THE LARYNX REQUIRING THE PROLONGED RETENTION OF THE INTUBATION-TUBE.

The first case was that of a child, thirteen months old, who suffered from such severe dyspnea that the tube was retained for over six weeks. In a second case, a little girl aged three years, the tube was worn for nine weeks. In both cases bacteriological examination proved them to be non-diphtheritic.

Dr. **T. F. C. Van Allen**, of Albany, read a paper entitled

THE REPORT OF A CASE OF UNUSUAL CONTRACTION OF THE VISUAL FIELD AND DISORDER OF THE COLOR SENSE FOLLOWING AN INJURY.

The patient was a painter, twenty-two years of age, who had fallen from a scaffold, sustaining a dislocation of the right shoulder, fracture of the right humerus, and a cut on the head. There was no fracture of the skull. There was some swelling and ecchymosis of the eyelids after the injury, but vision was apparently normal. Some weeks later he discovered that the text became blurred when he attempted to read; but it was not until he went back to his work that he found he could not distinguish colors. Examination showed the visual field much contracted and color perception impaired. His perception of red was not far from normal, but he could not distinguish blue from green. Alcoholic and tobacco amblyopia could be excluded, and the condition was considered due to the concussion and nervous shock caused by the fall.

Dr. **C. B. Herrick**, of Troy, then read a paper entitled

THE RAILWAY SURGEON AND HIS WORK.

The author said that there are six thousand railway surgeons in the United States. That their existence is warranted was shown by the fact that more than forty thousand of the million of men employed on railroads are injured annually. The character of the injuries which the railway surgeon is called upon to treat differs from that of other wounds in that they are usually inflicted by enormous weights in motion and with tremendous crushing force. In cases where the upper extremity is concerned, the railway surgeon is conservative, but prolonged treatment in the effort to save a crushed lower extremity is considered unadvisable.

THE RIVALS OF THE PHYSICIAN IN PRACTICE

was the title of a paper read by **Reynold W. Wilcox**, M.D., of New York.

The counter-prescribing "doc" of the corner drugstore, the instrument-maker, the massage-operator, the bath-attendant, the trained nurse, and the barber, were mentioned as the rivals of the physician. The veterinary surgeon was cited as the only individual who refuses to prescribe for a human being.

AFTERNOON SESSION.

Dr. **John H. Pryor**, of Buffalo, read a paper entitled

WHAT SHALL THE STATE AND COUNTY DO FOR THE CONSUMPTIVE,

in which he advocated the establishment by the State of special hospitals for this class of patients. The fact was brought out that in the State of New York 13,000 persons die annually of consumption.

THE ADVANTAGES OF STATE CONTROL IN MEDICINE.

A paper on this subject was read by Dr. **William Warren Potter**, of Buffalo. The results accomplished under the present system were given as follows: (1) The establishment of a preliminary requirement which makes it necessary for the medical student to possess qualifications equal to those of a high school graduate; (2) The establishment of the four years' course in medical colleges; (3) The examination by the State of candidates to determine their right to obtain a license to practise medicine; and (4) the rejection of 22.68 per cent. of the candidates who have applied for the State license since September 1, 1891, at which time the law went into effect. The author also advocated a national clearing-house, in which the different States should be represented, to pass upon the diplomas of physicians who desire to leave one State to reside in another.

Dr. **R. C. M. Page**, of New York, read a paper upon

ANEMIA.

The author stated that, as a rule, anemia is secondary to some other condition which causes a deficiency in the number of red blood-corpuscles, and differs from leukemia in that in the latter condition there is an increased number of white corpuscles associated with enlargement of the spleen. The term chlorosis should be restricted to the condition occurring in young girls with delayed menstruation, for in these cases there is often no anemia. Pernicious anemia is especially apt to occur in women between the ages of twenty and forty after repeated pregnancies. In this condition there is a diminution of the red corpuscles without increase of the white and no enlargement of the spleen. A diagnostic point is the temperature which reaches 100° or 101° F. Death is generally due to intercurrent disease. For simple anemia he advocated the administration of iron, iodide of potassium, and arsenic.

EXPERT MEDICAL TESTIMONY,

was the title of a paper read by Dr. **J. B. Ransom**, of Dannemora, in which he suggested that medical experts be appointed by the court, such experts being qualified for the purpose by an examination as to fitness by the board of regents.

Dr. **Evarts M. Morrell**, of Yonkers, cautioned medical men against testifying in a line of work with which they are not familiar, and emphasized the fact that when they do give testimony they should charge a large fee.

Dr. **A. Walter Suiter**, of Herkimer, said that bills which had been framed in the past to regulate expert medical testimony had invariably failed because they were unconstitutional. He objected to the appointment of experts by the presiding judge, on the ground that judges are human and therefore apt to be partial.

DR. LANDON CARTER GRAY, of New York, also thought that it would be difficult for a judge to act impartially in appointing experts, although this might be guarded against by the board of regents furnishing a list from which such experts are to be selected. Any change from the present method would be met with opposition on the part of the legal profession and he feared nothing could be done without co-operation from that quarter.

DR. JOHN T. WHEELER, of Chatham, then read a paper on

THE COLD-WATER TREATMENT OF TYPHOID FEVER IN PRIVATE PRACTICE.

The author said that he had used sponging in these cases since 1875 in a series of 120 cases, only one of which was fatal. This mild measure was resorted to in preference to the cold bath, which is considered too heroic by many people. He never has employed antipyretics. In very weak patients a preliminary rubbing is given instead of whiskey. Hemorrhage is a contraindication to sponging; pneumonia does not necessarily contraindicate it. Friction alone often quiets the restlessness. Much can be left to the nurse, who has a better opportunity than the physician of watching the effect of treatment. It is important that treatment be instituted early.

DR. HENRY L. ELSNER, of Syracuse, followed with a paper entitled

THE VAGARIES AND WANDERINGS OF GALL-STONES, WITH CLINICAL REPORTS.

The author narrated several unique cases. In one, in which the symptoms seemed to indicate pyloric cancer, a gall-stone weighing 23 grammes was discharged, followed eleven days later by the discharge of a second one nearly as large as the first. In another case a stone escaped from the gall-bladder and was found in the retroperitoneal space back of the pancreas, where it had caused symptoms resembling those of cancer of the pancreas. In a third case 601 small stones were found in the gall-bladder after the patient had suffered from repeated attacks of biliary colic. Operation was advised in all cases in which the symptoms of gall-stones are persistent.

DR. EDWARD D. FISHER, of New York, then read a paper entitled

PARALYSIS, PROGNOSIS AND TREATMENT.

The subject was considered under the following headings: (1) cerebral, (2) spinal, (3) peripheral, and (4) muscular. The first form is due to meningeal or intracranial hemorrhage, thrombosis, tumors, injuries, etc., and is usually unilateral. Disease of the anterior horns of the spinal cord, hemorrhage, new growths, injuries, compression and spinal fracture were given as cause of the second variety. The third form, which is accompanied by marked sensory symptoms, is usually caused by some constitutional dyscrasia, as rheumatism, gout and lead-poisoning. The etiology of the fourth variety is not well understood, but the condition is supposed to be due to an hereditary developmental defect. The prognosis is not favorable except in the third form of the disease. Hydrotherapy, massage and electricity are indicated, and sometimes give beneficial results.

EVENING SESSION.

PRACTICAL EXPOSITION OF THE X-RAY IN MEDICINE AND SURGERY.

Apparatus and technique were demonstrated in an interesting manner by **DR. SAMUEL LLOYD**, of New York.

DR. FRANCIS H. WILLIAMS, of Boston, then read a paper entitled

THE X-RAY IN MEDICINE.

The author gave his experience with the x-ray in medical cases, and stated that more definite information can be obtained by this means than by percussion and ausculation in diseases of the heart, such as dilatation and hypertrophy, and in diseases of the lung and pleura, particularly tuberculosis, emphysema, pleurisy and empyema. A case was narrated in which the progress of a tuberculous invasion of the lungs was clearly shown by the x-ray.

THE X-RAY IN SURGERY.

DR. ARTHUR L. FISK read a paper on this subject, which was illustrated by stereopticon views of skiagraphs of many complicated bone injuries.

THE X-RAY — CLINICAL EXPERIENCES.

DR. WILLIAM HAILES, Jr., of Albany, followed with a paper detailing his clinical experiences with the x-ray, and demonstrated improved methods in microscopic projection.

SECOND DAY.

DR. E. F. BRUSH, of Mount Vernon, read a paper entitled

THE HYGIENIC MANAGEMENT OF DAIRIES,

in which reference was made to the various ways in which milk becomes contaminated in the stable and dairy, all of which would be done away with if proper hygienic methods were employed.

DR. W. H. HEATH, of Buffalo, followed with a paper on

THE MUNICIPAL CONTROL OF MILK-SUPPLY IN CITIES AND VILLAGES.

The author spoke of the system employed in Buffalo in regard to supervision of the milk-supply, and strongly urged that the State Board of Health adopt a similar system and insist upon its enforcement in every city and village throughout the State. The necessity for inspection of dairies was emphasized.

DR. HERMAN E. HAYD, of Buffalo, read a paper entitled

SOME POINTS IN THE TECHNIQUE OF THE ALEXANDER OPERATION.

The operation which picks up the ligament at the external ring was advocated and the necessity emphasized of saving the knuckle of fat which presents at the external opening, as this is an important landmark. The end of the ligament is then cut off and the latter transfixed through a thick portion of the muscle, care being taken not to draw the suture too tight in approximating the pillars. He is opposed to the operation in which the canal is opened, as this favors the production of hernia.

Dr. Edwin B. Cragin, of New York, followed with a paper on

THE PRESENT STATUS OF VAGINAL OPERATIONS FOR DISEASE OF THE PELVIC ORGANS.

The vaginal operation was advocated in three classes of cases, namely, (1) pus cases in which the removal of the uterus and appendages is indicated, (2) cases in which the exudate indicates the necessity for drainage without removal of the uterus, and (3) cases of small fibro-myomata. The value of morcellation, the Mikulicz vaginal drain, and the use of ligatures were emphasized.

Dr. W. E. Ford, of Utica, read a paper entitled

REMOTE CONSEQUENCES OF EXCESSIVE UTERINE HEMORRHAGE.

The fact was pointed out that in lacerations of the cervix which extend above the internal os, the loss of blood is apt to be large. The degeneration of the endometrium which follows keeps up the bleeding and, as a result, a neuritis is set up which is the beginning of the so-called neurasthenia uteri. In these cases trachelorrhaphy fails to cure the nervous symptoms, and amputation of the cervix should be performed. The blood-count in these patients shows that there is no true anemia present.

Dr. J. Riddle Goffe, of New York, presented a paper on

THE ANATOMY AND FUNCTION OF THE PELVIC FLOOR IN WOMEN, AND THE OPERATION FOR REPAIR OF INJURIES DUE TO PARTURITION.

The author stated his belief that the function of the perineum is entirely passive, and that it serves three purposes, namely, (1) it fills in a certain amount of anatomical space between the outlets of the two canals, the vagina and the rectum; (2) it gives attachment to the movable end of the levator ani muscle; and (3) it gets out of the way, or, more correctly, is drawn out of the way of the advancing head in parturition and of the fecal mass in defecation. All active movements of the pelvic floor is accompanied by the levator muscle, under which name the author includes all the muscular structures of the floor of the pelvis. This levator muscle was described as cone-shaped with a bony origin and a tendinous attachment, the bony origin being the entire circumference of the pelvis and its attachment the tendinous centre known as the perineal raphe. Lacerations of the pelvic floor are serious in proportion to the degree of impairment to the structure and functions of the levator ani muscle which they produce, and any operation for the repair of such lacerations must restore to this muscle its distal attachment. The following method was advocated: Beginning with the highest carunculæ on either side and reaching the highest point of the rectocele, a triangular flap is removed; then, with the finger of the left hand in the rectum, the needle is inserted about one-fourth of an inch from the angle of the denudation, passes through the mucous membrane, sweeps out toward the side of the pelvis, and gradually curves toward the median line until it emerges near it and about an inch down the rectocele. It is then withdrawn and again inserted an eighth of an inch on the opposite side of the median line and swept back through the tissues in a reverse direction until it emerges upon the mucous membrane at a point equally distant from the angle of denudation to correspond with the point of insertion. A second stitch is inserted a quarter of an inch farther down the edge of the mucous membrane and corresponding to the first suture. The two or three succeeding sutures similarly passed bring together in front of the rectocele the separated edges of the muscles and fascia, and the last is passed down around the entire circumference of the denuded surface. The suture material employed is silver wire. One of the advantages of the operation is that it is followed by but little pain, and the patients are confined to bed but a few days.

Dr. W. Gill Wylie, of New York, considered the Alexander operation an ideal one in selected cases, but thought it was often employed where it was not called for. Vaginal work gives as good results as does that done by the abdominal route. The speaker now employs clamps in the place of ligatures, believing that the vagina is left in a better condition when the former are used. He agreed with Dr. Goffe in regard to the function of the transversus perinei. He considered it a very active muscle which retracts and everts the mouth of the vagina when it is lacerated.

Dr. Albert Vander Veer, of Albany, was in favor of the Alexander operation in cases of movable retroversion, but thought it could often be avoided by palliative treatment. Cases in which vaginal work is done should be carefully selected. The speaker was one of the first to employ this method, having removed a fibroid through the vagina eighteen years ago. He heartily agreed with the views expressed by Dr. Ford in his paper.

Dr. F. W. Sears, of Syracuse, agreed with Dr. Goffe that lacerations of the perineum are usually caused by the passage of the shoulders.

Dr. Ford said that he had been employing an operation very similar to that described by Dr. Goffe, and that he had obtained very good results.

Dr. George M. Edebohls, of New York, read a paper entitled

THE OTHER KIDNEY IN CONTEMPLATED NEPHRECTOMY.

The importance of determining the presence and condition of the other kidney when nephrectomy is contemplated was strongly urged by the author. The presence of a kidney can usually be ascertained by palpation alone; to determine its condition, cystoscopy and catheterization of the ureters may be employed. As a final resort, lumbar incision and exploration were advocated. This procedure was first practised by the author in 1894, and he has employed it in two additional cases since that time.

Dr. Bristow said that in a large series of autopsies he had never met with a case of single kidney, although he had seen several in which one or both kidneys were situated below the brim of the pelvis and furnished with a double set of blood-vessels. He thought the condition of single kidney so rare as to make exploratory incision unjustifiable.

Dr. Willy Meyer, of New York, agreed with the author that all means should be employed to ascertain the condition of the other kidney. He recommended that suprapubic cystotomy be performed, if necessary, for this purpose.

Dr. Edebohls said that he knew of three cases in which only one kidney was present, as proved by autopsy.

(*To be continued.*)

Recent Literature.

An Epitome of the History of Medicine. By **Roswell Park**, A.M., M.D., Professor of Surgery in the Medical Department of the University of Buffalo, etc. Illustrated with portraits and other engravings. One volume, royal octavo, pp. xiv, 348. Philadelphia, New York and Chicago: The F. A. Davis Company.

Washington is the only city in America containing the material needed for original research in medical history and bibliography; even the library of the Surgeon-General's office needs the care of ripe medical scholars after the arduous labors of Dr. Billings, who has so ably and energetically formed the "skeleton."

Dr. Park, no doubt, felt this when he began an "Epitome of the History of Medicine." It is hard to conceive how a greater number of interesting facts could be crowded into the same space; it is to be regretted that they are not more judiciously grouped and related. A list of the authorities consulted shows that they have been selected with too little regard to the results of modern scholarship in general or in medical history. Renouard's classifications are unfortunate at the best; Daremberg is a monument of learning distorted by national and other prejudices; Bouchut is beneath criticism; Baas is not a *good* compend even; Haeser is better in a later edition than in that used by Dr. Park, and then is not noted for infallibility; the remaining antiquated treasuries of facts need to be used with a much better conception of the philosophy of history than has been displayed by the writer if he wishes to furnish a good compend, a work, by the way, at present capable of rendering the greatest service to American medicine.

We miss, for instance, an account of the connection of the doctrines developed at Alexandria with the thought of the Middle Ages; Arabian and Jewish philosophy are mingled; and there is no clear statement of the developments of these philosophies from orthodox Mohammedanism and Judaism, nor of their influence upon the thought of Western Europe; Averroes particularly is singularly unappreciated; the "portrait," by the by, copied from one of Raphael's great allegorical paintings, is simply an attempt to realize a conception formed by a school of thought, with which the artist sympathized, of what the legendary "doubter" might look like. There is no satisfactory statement of the relation of medicine to the great movement of the renaissance; no explanation, in other words, is given why the supreme importance of Vesalius and his works was not realized and has never been till our day, in spite of the learning of Haller, Boerhaave and Albini. There is merely a slur at Paracelsus, in spite of the great critical studies of modern bibliographers and historians; the simple confidence in French writers, like Daremberg, upon this point is inexcusable.

The writer does not clearly set forth the course of scientific and philosophical thought during the seventeenth and eighteenth centuries; and the references to positive philosophy are not satisfactory. There is a confusion of material, a mingling of what concerns anatomy, physiology, surgery and practical medicine, to say nothing of botany and chemistry, these latter being handled in a very step-motherly fashion, which prevents any thing like a clear conception of the development of medical science. The sketch of Fothergill and Lettsom should, at least, have mentioned their interesting American relation; and it is probable that a mention of Cotton Mather and Winthrop would have followed a better knowledge of the evolution of our science in America.

Not a few statements need correction. For instance, Hans Sachs (born 1494, died 1576) could hardly have been a "business colleague" of Jacob Boehme (born 1575, died 1624); no doubt it was simply meant to state that both were shoemakers. The *lithograph* of Pinel could hardly have been an *eighteenth* century production, and most of the so-called "steel plates" are "copper plates." Vesalius described the heart as a muscle with considerable detail, so that "Steno did not first prove it to be such"; and Senac should have been mentioned for his epoch-making studies in this connection. The statement that the "Arabian school kept alive all the learning of the past and clarified rather than made it turbid" is questionable.

It is a pity that, at this day, the name of Dr. Beaumont should have been omitted; some time it will be recognized that his study of the "physiological action of the gastric juice" is the greatest single contribution which America has made to modern medicine. Dr. Charles Wells, mentioned so honorably by John Stuart Mill, the learned and industrious Dr. Thomas Cooper and a number of other American workers besides should have been duly remembered.

May we hope that the author, having gathered so much of real value, and being endowed, as he is, with so much liberality and candor, will, in a second edition, order his material so as to demonstrate the correctness of his estimate of the value of medical history.

Practical Pathology for Students and Physicians. By **Aldred Scott Warthin**, Ph.D., M.D., Instructor in Pathology, University of Michigan. Ann Arbor, Mich.: George Wahr. 1897.

This book shows that its author possesses a thorough practical acquaintance with its subject-matter.

It is nearly evenly divided into two parts, respectively devoted to Directions for Post-mortem Examinations and to Histological Technique.

The part on post-mortem work is very well written, and can be read with profit by pathologists.

The part on histological technique follows chiefly the plan of the well-known work of von Kahlden, and contains also useful hints for clinical examinations by laboratory methods.

The book will be found to be a very satisfactory manual for the pathological laboratory.

Manual of Gynecology By **Henry T. Byford**, M.D., Professor of Gynecology and Clinical Gynecology in the College of Physicians and Surgeons of Chicago, etc. Second Edition. Pp. 596. 341 illustrations. Philadelphia: P. Blakiston, Son & Co. 1897.

The first edition of this work has already been reviewed in these pages, and of the second edition it is only necessary to say that carcinoma, sarcoma and cystic tumors each receive a separate "part" in this volume. "New parts on the anatomy of the pelvic organs and venereal diseases" have been added, and many of the chapters have been almost entirely rewritten.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M.D., F.R.S. Revised and edited by Thomas Stevenson, M.D., London, F.R.S., etc. Twelfth American, with citations and additions from twelfth English, edition, by Clark Bell, LL.D., etc. Philadelphia: Lea Brothers & Co. 1897.

A new edition of Taylor's Medical Jurisprudence is always welcome. As is usual, those changes which appear in the English edition are distinctly in the line of improvement, and, while not adding appreciably to the size of the work, do add to its value.

In all, the present volume is some forty pages longer than its predecessor, largely made up by American notes; and it is unfortunate that it cannot be said that the value of the work is increased in proportion to its length. Especially is this true of the concluding chapter, entitled "Medico-Legal Surgery," in opening which the American editor says, "Medico-Legal Surgery should be considered under three separate and distinct heads: Military Surgery, Naval Surgery, and Railway Surgery." From our point of view it is hard to see why it should, or why either of the three should, be considered under the head of Medico-Legal Surgery.

It may be of interest to some to know of the organization of the Army Medical Department, the Medical Corps of the Navy, and of the National Association of Railway Surgeons. It is also of passing interest that the American editor is an officer, and reads a number of papers before the meetings of the Medico-Legal Society. A new edition of a work of this character is, however, hardly the place that one would think of going to for the information.

A Text-Book of Diseases of Women. By Charles B. Penrose, M.D., Ph.D., Professor of Gynecology in the University of Pennsylvania. Pp. 528. Philadelphia: W. B. Saunders. 1897.

This admirable volume of a little over 500 pages is perhaps the best of the recent text-books for students. It is clear, concise, well-illustrated, and is, in effect, a thorough exposition of the present status of gynecological practice in America. It is rendered especially admirable for the use of students by the author's adoption of and thorough adhesion to the principle of stating clearly one good method of treating each disease and avoiding complex discussion of moot points. This plan always stamps a book strongly with the individuality of its author; but Dr. Penrose is to be congratulated upon the fact that he carefully avoids the eccentricity of recommending extreme views on the ground of personal bias. The book is one which is well worth a careful perusal by any teacher of this subject, and which can be unhesitatingly recommended to students.

Injuries and Diseases of the Ear. By McLeod Yearsley, F.R.C.S. London: The Rebman Publishing Co. 1897.

This collection of monographs will be of interest to all general practitioners as well as to students of otology; the different subjects are handled in a very practical manner and the treatment is more nearly up to date than is common in text-books on this subject. Indeed, while it varies somewhat from that in use in our vicinity, especially as to anesthesia and adenoid operations, yet, on the whole, the book may be thoroughly commended in almost every detail.

THE BOSTON

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IMAGINATION.

Medical history is full of the effects of imagination. As we study critically the work of the pioneers in medicine we find everywhere a tendency to substitute for the facts of observation a fabric of ideas dependent, in great measure, upon their own subjective states. It is only with the growth of more exact scientific methods that we have come to subordinate such vagaries to the test of accurate observation and experience. Yet even now, were we as critical of ourselves as our descendants are likely to be of us, we should still note a strong tendency to the exercise of imagination in many of the details of our daily work as physicians. To what extent this tendency is prevalent is hardly to be recognized until we make a definite effort toward its study.

To banish the element of imagination absolutely from any walk in life would undoubtedly be unfortunate; but as scientific men we cannot be too careful in recognizing whither its indulgence may lead. Of interest and value, therefore, is an investigation now before us, directed to the end of determining with accuracy the scope of imagination in the observance of certain objects. This work has been ingeniously attempted by Dr. George B. Dearborn in a paper in the January number of the *American Journal of Psychology.*

The apparatus for the investigation was simple; it consisted of the figures formed by pressing gently with the fingers a drop of ink between two squares of paper, the blots thereby produced representing a great variety of design. These were conveniently arranged on uniform bits of paper for subsequent tests.

The subjects experimented on were, for the most part, students in the Harvard Pyschological Laboratory and a certain number of professors and their wives, the average age being about thirty-five. Every subject was examined as to his or her early life, and information obtained as regards familiarity with various animal forms, fairy stories, mythology and the possible habit of watching clouds and other natural forms as a pleasure of the imagination. Among the subjects were two poets and two artists, who, both in readiness and variety of response, stood well toward the top of those experimented upon.

A large number of the blot-cards were arranged in regular series. Each subject in turn was directed to look at the blot-card, right side up, turning neither the card nor the head. As soon as a consciousness of the first suggested image, even though it were vague, came into his mind, he was directed to react by a tap. The time of his reaction was then noted, and as concise a description as possible given of the general nature of the object as suggested by the ink-blot. None of the subjects had seen the blot before the time of the experiment. As would be expected, a great variety of replies to the general question, "What is it?" were handed in. The grand average of time in forming a conception of the object suggested by an ink-blot was 10.3 seconds, with naturally, enormous individual variations. Each subject was instructed to report the first object which the blot suggested to him in each of a hundred and twenty cases. The comparison of these object-images is of extreme interest, and gives one a definite idea of the great variation in the play of the imagination in different individuals of the same general culture. Some of the objects imagined with the time required for the conception to be formed are as follows:

	Seconds.
"Demon on a beast"	4.
"Monster's Head"	16.3
"Head of an Arab"	8.
"Running animal, frisking"	2.
"Girl in tall cap, seated"	4.
"Running pea-fowl, head on one side"	6.2
"Chimera"	11.5
"New style lady's bonnet"	70.
"Head of some one-eyed creature"	33.5
"Bat flying"	47.8
"Two shrimps"	20.
"Half of sweet-pea bloom"	3.5
"Snake coiled around a stick"	3.

Many other equally curious and interesting imaginings are noted in this altogether readable article. The writer concludes as follows:

> "Why one subject should see in a blot a 'cabbage head' and the next an 'animal with his mouth open,' or why a professor should be reminded by a blot of 'half a sweet-pea blossom' and his wife of 'a snake coiled around a stick,' of course no one can at present pretend to explain. There is a temptation in such cases of association as these, to call the results the choice of chance; but this means too little — or too much. It is clear, that, as a general principle, the experience, and especially the early experience, of the subject, has important influence. For example, study of the records shows that subject 'H,' a purely domestic woman, is reminded most often of domestic objects; while subject 'O,' who is an artist and student of mythology, sees in the blots many picturesque and fanciful things. The difference in the imaginations of the country and city bred is clear. Altogether, there is evidence here that the laws of the reproductive imagination, still, for the most part hid in the neural paths, are substantial laws which may one day be found out entirely and reduced to words and to more or less of mathematical certainty of statement. Meanwhile it is something to establish, if possible, in a manner unmistakably demonstrable, the empirical conditions under which this 'faculty' of mind performs its marvellous combinations and effects, for the imagination is one of the most interesting as well as important phases of mentality.
>
> "In particular would it be interesting to know to what degree, if at all, the fixed ideas, delusions and changed emotional conditions, of what the Germans term conveniently *der Wahn*, influence and subvert the reproductive imaginations of the persons who are the victims of these obsessions and delusions, fixed into their mental natures deep as life. Perhaps an attempt to answer these interesting inquiries may form the substance of another research, conducted with this same set of blots."

We certainly trust that this last suggestion may be carried out, for in such work we see psychology made practical, and an analysis offered of certain psychical phenomena which is of much value.

To the physician, whether he be engaged in the active practice of his profession or in working out its theoretical problems, such a study as the foregoing should convey at least a warning that wide differences of opinion are often dependent upon early experience and training, and that imagination, no doubt, in its true sense, is a much more potent influence in the determination of many of his ideas than he can possibly realize.

STATE MONOPOLY OF THE MANUFACTURE OF ALCOHOLIC BEVERAGES IN FRANCE.

The question of the desirability of a State monopoly for the manufacture of alcoholic beverages having come up for discussion in France, an Extra-Parliamentary Commission was appointed to investigate the scientific and industrial questions involved. At the end of January, 1898, M. Duclaux, Director of the Pasteur Institute, presented the unanimous report of the sub-committee which had been considering the subject from a hygienic point of view.[1]

The commission is convinced that alcohol *per se* is the chief offender in the harm arising from the use of distilled spirits, and that therefore the most important thing to be gained in the way of reform is, first and foremost, that a less quantity should be drunk, and, secondly, that its quality should be improved. And this latter the commission believes can be brought about just as well without the intervention of a government monopoly.

In regard to cordials with high flavors and made with essences, etc., the commission is most outspoken in their condemnation; and nothing, in their belief, can be done to make them innocuous. All the plans for monopoly which were presented for consideration included the making and sale of absinth and other *liqueurs:* and for this reason alone the commission could support none of them. Finally, the commission is convinced that all monopoly tends to increase the number of drinkers rather than diminish it, and concludes that from a hygienic point of view all attempts at monopoly are useless, for there can exist no such thing as hygienic alcohol, no matter how it be prepared or purified.

The conclusions reached by the Committee are as follows:

(1) Alcohol, when consumed in the form of wine, beer, cider or perry is a substance whose moderate usage

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[1] Annales de l'Institut de Pasteur, January 25, 1898.

is without harm provided these beverages are properly prepared.

(2) No distilled alcoholic spirit is hygienic, and beyond a certain limit the purest alcohol is dangerous.

(3) The natural impurities which come from distillation add their own dangers to the dangers of the alcohol containing them.

(4) In the alcohols destined for consumption the harmful action of the impurities of the most poorly rectified spirits is less than the harmful action of the alcohol containing them.

(5) The danger is much greater with the essences, flavors, and artificial ingredients which are added to the alcohol to make the vermouths, bitters and absinths of commerce. The harmful action of these substances, even when the purest, augments in a large measure the harmful action of the alcohol containing them.

(6) There is no substance that can be used in the production of such *liqueurs* that is not dangerous to the habitual consumer.

(7) It is desirable, as regards distilled spirits, to make them as harmless as possible by securing their absolute purity, but the solution of the problem of alcoholism will not be found by so doing. The *liqueurs*, however, present such great dangers to the public health that it is necessary to try to restrain their use so far as possible. Also an attempt should be made to find ingredients to make them less harmful; but at present there are none known which are not harmful to the organs of the body.

(8) All reform ought to seek first of all to diminish the amount of alcohol consumed, and, secondly, to improve its quality.

MEDICAL NOTES.

Typhoid Fever is prevailing to an unusual extent in Jersey City, some forty cases having been reported in January.

The Association of American Anatomists. — The next meeting of this Association will be held in December, 1898, in New York City.

The American Dermatological Association. — The date of meeting of this Association has been changed to May 31st, June 1st and 2d.

A Medical Candidate for Mayor of Philadelphia. — Dr. William Pepper has been mentioned as a candidate for the mayoralty of Philadelphia at the next election.

The City Hospital Medical Society of St. Louis. — The Alumni of the City Hospital of St. Louis have organized a Medical Society, which meets on the first and third Thursdays of each month except July and August.

Legacy to the Pennsylvania Hospital. — The Pennsylvania Hospital has been left the sum of $50,000 by the will of Josephine M. Ayer of Lowell, Mass., who died in Paris. If we mistake not, this Mrs. Ayer is the widow of the Ayer of sarsaparilla notoriety, concerning whom, however, comment is unnecessary, in view of the munificence of his relict. — *Medical News.*

The American Medical Association. — The Section on Materia Medica and Therapeutics of the American Medical Association publishes a very attractive programme for the meeting at Denver, Col., June 7–10, 1898.

The Manufacture of the New Tuberculin. — We are informed that the report that the manufacture of Tuberculin T. R. has been discontinued is without foundation. The fact that its distribution has been restricted probably gave origin to the rumor.

Child Life Insurance, a Juror's Statement. — The following incident illustrating the methods of child life insurance agents is taken from an English paper:

> At an inquest on a baby at Newington recently held, the coroner asked the witness if the child was insured.
>
> *Witness.* — "Gracious me, no; it's only eleven days old!"
>
> *Coroner.* — "That's nothing; some mothers insure their children before they are born."
>
> *Witness.* — "Rather rough, isn't it?"
>
> *A Juror.* — "That's quite right. I've known insurance agents who have had the tip to wait at people's door till the child was born."

Plague in Bombay. — The plague still rages in Bombay, the number of deaths for the week ending January 26th having been 834. At Sinnar the attempts of the authorities to enforce isolation excited a riot, in the course of which an apothecary was killed and a constable wounded. The temporary hospitals were wrecked and the quarantine camp was set on fire. The mob was dispersed only after the police had fired into it.

Christian Science and the Law. — A Christian Science "doctor" was fined fifty dollars recently in a Kansas City police court for not reporting to the Board of Health a case of diphtheria in a family in which a ten-year-old child afterward died. The woman had administered Christian Science treatment to the child. The case was appealed, but the judgment of the trial tribunal was sustained. In the opinion delivered in affirmation of the judgment of the lower court, the judge said the methods of Christian Science in attempting to heal were frequently akin to murder. — *Medical Record.*

Immunity to the Sting of Bees. — Dr. Langer, of Ruschowan, in Bohemia, stated at the Congress of German Naturalists and Physicians, according to the *Practitioner*, that he found that the majority of the bee-keepers in that district acquired a complete immunity to the stings of those insects, while some seemed to have enjoyed that immunity from the first, possibly by inheritance from immunized fathers. Of 153 whom he had questioned, 9 had always been insusceptible, 118 had acquired immunity, and 26 had not. So complete was it in some cases, that men, when intoxicated, had been stung in 50 to 100 places with less suffering than is felt by most persons from flea-bites. The poison he finds to be an animal alkaloid, and not, as is commonly believed, a formic acid, and the best treatment a subcutaneous injection of a two to five per cent. solution of potassium permanganate, since the poison is destroyed by this salt in the proportion of one in twenty.

The "Overlaying" of Infants. — Every year in this country forty thousand children meet their death by being lain upon and thus suffocated. The great bulk of this annual slaughter is accomplished on Saturday and Sunday nights and in the holiday seasons. To interfere with freedom to overlay infants would be at present going farther than the British Parliament would dare to go, especially if the proposal were to conform the law here to that of Germany upon this subject. In Germany, a mother who has her young infant in bed with her commits an offence. A first offence is liable to a fine, a second offence to imprisonment. To be drunk and disorderly in Great Britain is an offence which is fined, but to be drunk and smother a baby is still a lawful act. The smothering is not murder, neither is it manslaughter, for that is to commit an unlawful act whereby some person comes by his death, and to be drunk is a lawful act, even to a suckling mother. — *English paper.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the the week ending at noon, February 16, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 36, scarlet fever 16, measles 22, typhoid fever 6.

Retirement of Mr. Endicott. — Mr. William Endicott, Jr., has retired from the Board of Trustees of the Massachusetts General Hospital, after twenty-two years of service.

Boston Floating Hospital. — The annual report of the Boston Floating Hospital shows that the total number of children taken on trips this year was 2,018; patients discharged well, 159; discharged improved, 549; discharged not improved, 50; died 4. Visitations were made to homes of patients to the number of 586. Twenty-five trips were made during the season. The report of the treasurer, Roger E. Tileston, shows receipts, $10,895 78; expenses, $10,724.05; balance, $171.73.

NEW YORK.

The Board of Health and Tuberculosis. — Determined opposition to the Brush bill continues to manifest itself. The medical directors of the various life insurance companies in the city have united in a protest against its passage, in which they state that they feel that it would be a fatal mistake to exclude tuberculosis from the list of infectious diseases. The action of the Board of Health, they contend, in following up and trying to stamp out the possibility of this disease being communicated from person to person has proved so valuable during the last few years that it would be unfortunate to pass any bill which would prevent the Board from continuing their labors in this direction. Protests against the bill have also been signed by a large number of the members of the County Medical Society and by the Medical Boards of the Bellevue Hospital and other hospitals, in addition to the New Hospital.

The Adirondack State Park. — In January of last year Governor Black called the attention of the Legislature to the fact that in the proposed Adirondack State Park the State owned but 661,000 acres, out of a total of 2,800,000 acres. The Legislature accordingly appropriated $1,000,000 and placed the expenditure of the fund in the hands of the Lieutenant-Governor, the State Engineer and the State Forestry Commissioner. This commission, designated as the Forest Preserve Board, has just presented its first report, which shows that the board has purchased within the confines of the Adirondack Park 250,117 acres, at a cost of $921,699, making the State's total holdings 911,117 acres. Very nearly all the land so purchased is stated to be virgin forest land surrounding the lakes, the protection of which insures the water-supply of the Hudson Valley and the Erie Canal.

A Profitable Wine Trade. — In a recent lawsuit which has been brought against an alleged importer of Hungarian wines, on account of a business quarrel, the fact has been brought to light that a supposed high grade of Tokay wine which the "importer" sold for medicinal purposes was manufactured in New York at a trifling expense. The plaintiff in the suit claims that for the past five years he has supplied the defendant with this Tokay, which he manufactured out of alcohol, water, farina water, honey, tokay essence, citric acid, salicylic acid and gelatine. The cost of making six hundred gallons of "Tokay" wine, he states, is about $75, or at the rate of six cents a bottle. The price of the wine to the public was two dollars a bottle.

◆

Miscellany.

THE HUNT MEMORIAL BUILDING OF THE HARTFORD MEDICAL SOCIETY.

The Hartford Medical Society accepted and dedicated the Hunt Memorial Building on February 1st, in the presence of a large gathering of the medical fraternity and others. The building is attractive in the simplicity of its coloring and interior finish, and admirably adapted for the purposes for which it is intended.

A legacy of $20,000 was bequeathed in 1893 by Mrs. Mary C. Hunt, widow of the late Dr. Ebenezer K. Hunt, of Hartford, for the construction of the building for the use of the Hartford Medical Society, as a memorial to her husband, in case the Medical Society should within two years have purchased a suitable site. A fund was started for the purchase of the site, and was made up to a sufficient sum by the contributions of members of the society and outside donors.

The building contains a meeting-room, a dispensary, a laboratory and anatomical and photograph rooms.

At the exercises Dr. Melancthon Stores made an address upon the history of the Society and the building, and formally presented the building to the trustees. Dr. Gurdon W. Russell made the speech of acceptation for the trustees and reviewed the life of Dr. Hunt, who was active in establishing the Hartford Medical Society and Hartford Hospital, and who died in 1889 after a long life spent in the honorable practice of his profession, and the performance of many public duties. The oration of the evening was delivered by President Daniel C. Gilman, of Johns Hopkins University.

X-RAY DERMATITIS; SUIT FOR DAMAGES.

The following letter to the *Journal of the American Medical Association* will be interesting to surgeons, as showing the dangers to which those who avail themselves of advanced methods in diagnosis and treatment are exposed.

Paducah, Ky., February 2, 1898.

To the Editor: — In October, 1897, the undersigned was sued for malpractice in the sum of $10,000 for subjecting a patient to the x-rays which produced a severe dermatitis, the plaintiff setting up the claim that the apparatus was carelessly used, and further that the means used was not yet sufficiently well understood to warrant its use for the purpose of locating foreign bodies, etc. The suit was ably contested and fortunately was decided in my favor, the court holding that in this as in other cases the physician was bound to use ordinary skill and judgment, and placed the case upon the same footing as chloroform anesthesia.

Knowing that there were several suits of this character in the courts, I thought perhaps it would be of some interest to report it, since I have as yet been unable to find that the subject has been previously passed upon by the courts.

Respectfully,

Frank Boyd, M.D.

FOREIGN BODIES IN THE VAGINA.

The Paris Correspondent of the *Medical Press and Circular* sends the following communication:

Nearly every medical man at one time or another has discovered, when examining a woman for fetid leucorrhea, the presence of a pessary long forgotten in the vaginal cavity. M. Monod, of Bordeaux, relates some curious experiences he has made on the existence of various foreign bodies giving rise to the same symptoms. In one case he removed from a young woman a sponge which she alleged to have inserted some time previously, in order to suppress an abundant discharge. The sponge was already in a state of putrefaction, and came away in pieces. A rather elderly woman came to the hospital to be treated for fetid discharge. When the finger was passed up it perceived an ovoid foreign body, which, when extracted, proved to be a rosebud, in a good state of preservation. The patient pretended to know nothing about it.

Last spring he had occasion to examine a woman, aged sixty, of rather limited intelligence, for a double inguinal hernia. For a year before she suffered from vaginal discharge which was so fetid that she had to isolate herself from society. Suspecting the existence of a neoplasm, he chloroformed the patient in order to make a proper examination, and to operate, if necessary. When he introduced the hand into the vagina he felt a hard mass which seemed to be independent of the surrounding tissues. Passing a long forceps in he seized the body, and when he drew it he found it was a large cork. Renewing his explorations he successfully removed a thimble, a rag, a needle case, and finally a boot lace! The uterus was perfectly healthy.

Correspondence.

CLIMATE OF SOUTHERN CALIFORNIA.

(Concluded from No. 6, p. 143.)

The oceans, the mountains and the deserts are the three great natural factors in producing the equable climate of Southern California. They unite in such a way as to produce an almost frostless thermal belt which extends for five hundred miles, north and south through the State. This follows the foot-hills of the Sierras; and throughout its whole extent oranges may be grown successfully, a sufficient test of the mildness of the climate. The earliest oranges shipped from California are grown at points 150 miles north of San Francisco, and, as everybody knows, thousands of carloads are grown in Southern California.

In Southeastern California there are 3,500 square miles of desert, comprising nearly one-fourth the entire area of the State. This desert country is bordered on the west by the Sierra Madre, the San Bernandino and the San Jacinto Mountains, an almost unbroken succession of ranges varying in height between 5,000 and 12,000 feet. Over all this wide expanse "there is aridity, a parched dryness and a dancing heat which oppresses all animal life when the sun is high and radiates and disappears soon after the sun has set, so that even the summer nights are cool, and in winter there is a freezing temperature." Lying between the western slopes of the mountains above mentioned and the Pacific Ocean are the fertile, cultivated valleys which make up the habitable portions of Southern California. The distance between the summits of the highest mountains and the coast is about 100 miles.

Through the action of the sun by day and the rapid cooling of the earth at night there is a constant succession of breezes back and forth between the ocean and the mountains. The hot air rising from the desert during the day moves in an upper current towards the ocean, and a cooler breeze flows eastward to take its place, although prevented from passing over the deserts by the mountain ranges. At night, the earth cools faster than the ocean; the hot air rises above it and a cool breeze flows from the mountains into the valleys. Hence, in summer, there is the delightful "trade-wind" flowing east and moderating the heat of the day and, at night, a cool mountain breeze, westward. In the winter there are similar changes, although the winds are not as regular and as marked as the summer trade-wind. Frost is usually a product of purely local conditions, due to the unusually rapid cooling of the earth and a colder night air than usual when there is a great deal of snow upon the mountains. The ocean currents modify the climate of Northern California more than that of the southern part of the State and assist in maintaining the equability of the "thermal belt."

It follows, from these natural conditions, that the summers are cooler and the winters are warmer at the coast than in the interior; but the relative humidity is much higher, and for this reason coast points are avoided by most invalids. Even in summer one cannot sit out of doors after nightfall at Los Angeles, although he may at many points inland. In fact, the long summer evenings, when the glare of the sun is gone and there is a deliciously cool but not chilling breeze from the mountains, are the pleasantest part of the year at interior points. Yet, throughout the year, the change in the air before nightfall and before sunrise is more noticeable away from the ocean than it is upon its shores.

As a rule, the conditions mentioned control absolutely the climate of Southern California. But occasionally storms or atmospheric disturbances, extending over wide "storm centres," break over the natural boundaries established by the deserts and the mountains and produce the "exceptional" weather which makes the transient tourist sceptical about the climate. The prolonged rain-storms which occasionally come are instances of this; and a general frost like that of December, 1897, is another example. Two years earlier a freeze destroyed 1,500 carloads of oranges in a certain valley, while scarcely an orange was hurt in another valley fifteen miles distant and of about the same elevation above the sea. The latter was typical of the climate of Southern California, produced by local conditions such as may arise any winter; the former resulted from a wider influence, such as is very rarely strong enough to alter the equilibrium which is maintained between the climatic effects produced by the ocean and the deserts through the intervention of the mountains.

In summer the residents of the interior valleys go to the mountains or the coast, if possible. There are many beautiful camping-places among the mountains, at an altitude of 6,000 to 7,000 feet, where the weather is always cool. California affords unlimited opportunities for outdoor sports which while away the hot summer periods. As a rule, the maximum temperature in the shade is not above 90° and, in the dry atmosphere, that degree of heat may be borne with comfort. But, every summer, there are two or three periods of a week or ten days each when the mercury rises to 105°, occasionally to 110°, and these periods try the strongest. A continued residence in this climate is enervating. A common expression is that it "thins the blood." It renders people susceptible to cold and produces obscure nervous disorders. Many persons who seem to be "in a decline" from a long residence in the interior find their health completely restored by removal to the coast.

Persons suffering from asthma or rheumatism often find relief by living in the interior towns of Southern California. Consumptives rarely receive permanent benefit. They expect too much from the climate, and they come too late. Probably not more than one per cent. of those who come from the East for relief from consumption find a permanent cure. To secure the dessicated atmosphere recommended by physicians for this disease the patient must go to Indio, Palm Springs, or some other point on the desert side of the mountains. These places are lonesome; hotel accommodations are not first-class, and most patients waste other valuable time experimenting with various localities before they decide to try these.

The great virtue of the California climate is that one may be out of doors almost every day of the year, under proper precautions. Semi-invalids who are still strong enough to exercise out of doors have a good chance for rapid improvement if they will take care of themselves. But there is no positive medicinal virtue in the climate alone beyond that in pure air everywhere. In winter all persons in Southern California should wear warm woollen clothing, and should be well provided with outer wraps of different weights. They should wear a light overcoat when walking or sitting in the sun and a heavier one when riding. Invalids should always be within doors by 4.30 in the afternoon, and should remain in bed mornings until at least an hour after sunrise. They should abandon all intention of ever returning East to live, and should become permanent residents of Southern California. Sleeping in a room whose walls are partially made of canvas is very beneficial in many cases. It gives plenty of pure air without draughts. But all rooms should have ample facilities for heating.

With a knowledge of the peculiarities of the climate and a few simple precautions the health-seeker and the tourist will learn to enjoy the constant outdoor life; will understand the occasional disagreeable surprises in the way of severe weather; and will avoid the disappointment which overtakes those who think that in Southern California they may bask in eternal sunshine, without a drop of rain, a cloud in the sky, a snowflake, or a wintry wind — a childish dream from which many have been rudely awakened.

Very truly yours,

WM. M. TISDALE.

METEOROLOGICAL RECORD

For the week ending February 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..30	30.26	6	11	1	70	31	50	N.W.	N.	10	5	C.	C.	
M..31	29.80	18	32	5	82	100	91	N.W.	N.E.	6	28	O.	N.	.45
T ...1	29.33	21	32	10	98	72	85	N.W.	N.W.	24	24	N.	O.	.93
W...2	30.02	12	18	5	63	61	62	W.	S.W.	14	9	C.	O.	
T ...3	30.34	13	18	8	62	55	58	S.W.	W.	6	10	C.	C.	
F....4	30.62	17	28	6	53	60	56	S.W.	S.W.	5	10	C.	C.	
S....5	30.28	31	43	19	82	80	81	S.	S.	6	9	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 5, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Measles.
New York . .	3,438,899	742	262	10.08	21.56	.28	5.04	1.96
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	451	142	14.30	16.50	3.52	6.60	1 76
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	161	32	7.93	10.98	.61	5.49	—
Baltimore . .	550,000	163	62	10.98	19.52	1.22	4.27	—
Boston . . .	517,732	192	54	5.20	19.24	.52	2.08	—
Cincinnati . .	405,000	122	—	9.84	14.76	.82	5.74	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	92	28	7.63	10.90	—	2.18	1.09
Washington .	277,000	102	13	6.93	22.77	.99	4.95	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	33	13	9.09	9.09	—	3.03	—
Nashville . .	87,754	32	12	—	34.43	—	—	—
Fall River . .	95,919	29	11	10.35	6.90	—	3.45	—
Lowell . . .	87,193	25	7	—	20.00	—	—	—
Cambridge . .	86,812	26	8	7.70	15.40	—	3.85	—
Lynn	65,220	18	5	11.11	27.77	5.55	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	15	8	6.66	13.33	—	6.66	—
Lawrence . .	55,510	—	—	—	—	—	—	—
Springfield . .	54,790	16	6	12.50	18.75	—	—	—
Holyoke . . .	42,364	9	0	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	6	0	—	—	—	—	—
Brockton . .	35,853	8	3	12.50	12.50	—	12.50	—
Malden . . .	32,894	14	3	21.42	7.14	—	—	—
Chelsea . . .	32,716	—	—	—	—	—	—	—
Haverhill . .	31,406	8	3	12.50	12.50	—	12.50	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	8	1	—	—	—	—	—
Taunton . . .	27,812	—	—	—	—	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	10	1	—	10.00	—	—	—
Everett . . .	21,575	9	3	—	22.22	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	—	—	—	—	—	—	—
Amesbury . .	10,920	-	—	—	—	—	—	—

Deaths reported 2,371; under five years of age 695; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 229, acute lung diseases 418, consumption 280, diphtheria and croup 106, typhoid fever 25, measles 23, scarlet fever and diarrheal diseases 21 each, whooping-cough 14, cerebro-spinal meningitis 13, erysipelas and malarial fever 3 each.

From scarlet fever New York 8, Philadelphia 6, Baltimore and Boston 3 each, St. Louis 1. From diarrheal diseases New York 8, Philadelphia 5, Baltimore 4, Fall River 2, Pittsburg 1. From whooping-cough Cincinnati 4, Pittsburg 3, Springfield 2, Baltimore, Boston, Washington and Lynn 1 each. From cerebro-spinal meningitis New York 7, Malden 3, Boston, Worcester and Cambridge 1 each. From erysipelas New York 2, Baltimore 1. From malarial fever St. Louis 2, Chicopee.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending January 29th, the death-rate was 18.7. Deaths reported 4,031; acute diseases of the respiratory organs (London) 471, whooping-cough 149, measles 148, diphtheria 82, scarlet fever 45, fever 34, diarrhea 30.

The death-rates ranged from 11 3 in Croydon to 29.6 in Wolverhampton; Birmingham 22.4, Bradford 17.0, Burnley 14.8, Halifax 22.1, Hull 14.1, Leeds 16.1, Leicester 15.2, Liverpool 18.8, London 20.4, Manchester 18.0, Newcastle-on-Tyne 17.3, Nottingham 17.2, Portsmouth 19.3, Sheffield 20.0, West Ham 15.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 5, 1898, TO FEBRUARY 11, 1898.

By direction of the President, **Captain Jefferson D. Poindexter**, assistant surgeon, will report in person to the President of the Army Retiring Board convened at the Army Building, New York City, at such time as he may designate for examination by the board.

Captain William L. Kneedler, assistant surgeon, is relieved from duty at San Diego Barracks, Cal., and ordered to report in person to the Superintendent of the U. S. Military Academy, West Point, New York, for duty at that post.

Captan Charles F. Mason, assistant surgeon, is relieved from duty at West Point, New York, to take effect upon the expiration of the leave of absence granted him and ordered to Fort Logan, Col.

Leave of absence for six months, on surgeon's certificate of disability, with permission to go beyond sea, to take effect on or about February 20, 1898, is granted **Major Louis S. Tesson**, surgeon, Fort Ethan Allen, Vt.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING FEBRUARY 12, 1898

L. H. Stone, passed assistant surgeon, ordered to be examined for retirement, February 4th, and to wait orders. Retired, February 10, 1898.

B. R. Ward, passed assistant surgeon, upon completion of temporary duty in New York to proceed home and await orders.

J. G. Ayers, medical inspector, ordered to assume charge of hospital on Widow's Island in addition to present duties.

H. H Haas, assistant surgeon, ordered to the "Vermont."

A. C. H. Russell, surgeon, ordered to duty in the Bureau of Medicine and Surgery, February 9th.

G C. Hubbard, assistant surgeon, ordered home and granted three months' sick leave.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING FEBRUARY 10, 1898.

Carter, H. R., surgeon. To represent Service at Quarantine Convention of South Atlantic and Gulf States. February 7, 1898.

White, J. H., passed assistant surgeon. To represent Service at Quarantine Convention of South Atlantic and Gulf States. February 7, 1898.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Charlotte, N. C., for special temporary duty. February 9, 1898.

Perry, J. C., passed assistant surgeon. Granted leave of absence for fourteen days. February 9, 1898.

Smith, A. C., passed assistant surgeon. To represent Service at Quarantine Convention of South Atlantic and Gulf States. February 7, 1898.

Brown, B. W., passed assistant surgeon. Relieved from duty at Birmingham, Ala., and directed to rejoin station, Washington, D. C. February 7, 1898.

APPOINTMENT.

Dr. Frank A. Higgins has been appointed physician to out-patients at the Boston Lying-in Hospital.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, February 21st, at 8 o'clock.

Dr. M. H. Richardson will read a paper entitled: "Appendicitis: Conclusions drawn from a Consideration of Eight Hundred Cases; with a Review of One Hundred and Fifty Consecutive Chronic Cases Successfully Operated upon in the Interval."

Dr. E. W. Taylor: "Illustrative Cases of Habit Neuroses."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, February 23, 1898, at 8 P. M.

Papers: Edgar Garceau, M.D., "Differential Diagnosis of Puerperal Septicemia, with Cases."

Emma L. Call, M.D , "Fibroid Tumors as a Complication of Pregnancy and Labor."

F. W. Johnson, M.D., *Chairman*.
C. H. Hare, M.D., *Secretary*.

New Hampshire Medical Society. The adjournment of the Society to May 30 and 31, 1898, necessitates a change of date, as May 30th is a holiday (Memorial Day); therefore, the annual meeting will be holden in Concord, N. H , May 26 and 27, 1898.

G. P. Conn, M.D., *Secretary*.

New York State Medical Association, Fifth District Branch. — The Fifth District Branch of the New York State Medical Association will hold its fourteenth annual meeting at 315 Washington Street, Brooklyn, on Tuesday, May 24, 1898.

"Gonorrhea" will be the subject for papers, discussions and reports of cases.

Dr. Robert W. Taylor will open the subject by giving the Pathology and Treatment in Males.

Dr. J. W. S. Gouley will treat of Urethral Strictures.

Dr. Wm. E. Beardsley will treat of Gonorrheal Rheumatism.

Dr. Lawrence Coffin will treat of Gonorrheal Ophthalmia in Adults.

Dr. Wm. McCollom will discuss the Moral Prophylaxis and the Ethical Duty of Physicians to the Public.

Dr. J. C. Bierwirth will discuss the Medico-Legal Responsibility of Physicians to their Patients and Patients' Friends.

Dr. L. Grant Baldwin will give the Symptoms and Diagnosis of Gonorrhea in Females, and will be followed by Drs. Walter B. Chase and Frederick H. Wiggin on the Palliative and Operative Treatment.

Dr. N. L. North, Jr., will present the subject of Gonorrheal Ophthalmia of Infants, and be followed by Drs. A. Mathewson and L. A. W. Alleman on the same subject.

N. W. Leighton, M.D., *President*.
E. H. Squibb, M D., *Secretary*.

The American Medico-Psychological Association.—The fifty-fourth annual meeting of the Association will be held in St. Louis, Mo., commencing May 10, 1898, and continuing until May 13, 1898, inclusive. Arrangements have been made by the committee for the accommodation of members at the Southern Hotel, where all meetings of the Association will be held.

C. B. Burr, M.D., *Secretary*.

American Academy of Medicine. — The twenty-third annual meeting will be held at Denver, Col., on Saturday, June 4, and Monday, June 6, 1898.

The meeting will be held in the Brown Palace Hotel, which has been made the headquarters of the Academy, the management having given special rates for the occasion. It is planned to hold three sessions on Saturday, beginning at 10 A. M., at 3 and at 8 P. M. Another session will be held on Monday, at 10 A. M., at which time it is hoped all the business can be completed, affording the Fellows an opportunity to attend the meetings either of the Association of American Medical Colleges or the National Confederation of State Medical Examining and Licensing Boards, which meet on this day. This plan contemplates holding the reunion session on Monday evening.

BOOKS AND PAMPHLETS RECEIVED.

The Diseases and Injuries of the Conjunctiva, Especially the So-called Granulated Lids. By John H. Thompson, M.D., Professor of Ophthalmology and Otology, Kansas City Medical College, Kansas City, Mo. First edition (with illustrations). Kansas City: Hudson-Kimberly Publishing Co. 1897.

The American Year-Book of Medicine and Surgery, being a Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs and Text-Books of the leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, by twenty-seven American Authors under the general editorial charge of George M. Gould, M.D. Illustrated. Philadelphia: W. B. Saunders. 1898.

Diseases of the Eye. By Edward Nettleship, F.R.C.S., Ophthalmic Surgeon at St. Thomas' Hospital, London: Surgeon to the Royal London (Moorfields) Ophthalmic Hospital. Revised and edited by W. T. Holmes Spencer, M.A., M.B., F.R.C.S., Ophthalmic Surgeon to the Metropolitan Hospital and to the Victoria Hospital for Children. Fifth American from the sixth English edition. With a supplement on Color-Blindness. By William Thompson, M.D., Emeritus Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. With two colored plates and 161 engravings. Philadelphia and New York: Lea Brothers & Co. 1897.

Original Articles.

HEMATOPORPHYRINURIA, WITH THE REPORT OF A CASE.*

BY J. BERGEN OGDEN, M.D.,
Assistant in Chemistry, Harvard Medical School; Assistant in Clinical Pathology, Boston City Hospital.

Hematoporphyrin is a coloring matter which is derived from the blood, and only rarely forms an important constituent of the urine.

The earliest observations bearing upon this subject were made in 1871, when Hoppe-Seyler [1] found that if hematin was treated with concentrated sulphuric acid, and heat applied, there resulted a compound whose acid and alkaline solutions showed spectral bands unlike any substance he had seen before. Further experiments convinced him that he was dealing with a new compound, to which he gave the name "hematoporphyrin." He forthwith made an effort to determine its chemical composition, arriving at results which were, several years later (1884), found to be incorrect by Nencki and Sieber [2] who ascertained that its exact chemical formula was $C_{16} H_{18} N_2 O_3$.

Nencki [3] found that the only chemical difference between hematin and hematoporphyrin was that the latter was hematin free from iron.

In 1874 Baumstark [4] described two pigments which he obtained from the urine of a case of leprosy, and to which he gave the names "urorubrohematin" and "urofuscohematin." The acid solutions of the former gave a spectrum having a very close resemblance to acid hematoporphyrin, but the alkaline solutions of this substance failed to yield spectral bands like those of alkaline hematoporphyrin. At that time he called attention to the close resemblance of urorubrohematin to iron-free hematin, but did not regard the two subtances identical.

In 1880 MacMunn [5] described a pigment which he obtained from the urine of a case of acute rheumatism, to which he gave the name "urohematin." This pigment was found to yield spectral bands which closely resembled hematoporphyrin. Three years later [6] (1883) he reported other cases of acute rheumatism whose urine presented this peculiar coloring matter. In a paper [7] published in 1885 he changed the name of this pigment to "urohematoporphyrin."

Neusser [8] (1881) described a pigment which he found in the urines of two patients, one of whom was suffering from phthisis pulmonalis, and the other from pleurisy with effusion. This pigment was spectroscopically identical with hematoporphyrin.

Le Nobel [9] (1887) confirmed MacMunn's observations of the occurrence of a pigment in rheumatic fever, and added that he had met with it in pneumonia and cirrhosis of the liver.

In 1889 Stokvis [10] described a coloring matter which he had found in the urine of a woman who had taken sulphonal.

Ranking and Partington [11] (1890) reported two cases, both females, who showed obscure nervous symptoms. No sulphonal had been taken. The urine of both cases had a deep red color, and contained hematoporphyrin.

In the same year von Horley [12] described two cases of hematoporphyrinuria, and in both instances sulphonal had been ingested.

Salkowski [13] (1891) reported in detail the chemical and spectral examinations of dark red urines of three patients all of whom had taken sulphonal.

In 1892 Hammersten,[14] Goldstein,[15] Sobernheim,[16] and Quincke [17] reported cases of hematoporphyrinuria following the use of sulphonal. Some of these had taken the drug in large doses for some period, while others had taken only a comparatively small quantity.

Herting [18] (1894) described the urine of a case which had taken both trional and tetronal. It had a dark red color and contained hematoporphyrin.

In the same year Schultz [19] reported a case of severe melancholia, in which evening doses of one-half to one and one-half grammes of trional had been taken for four weeks — a total of 25 grammes. The urine passed during the fourth week had a muddy, reddish-brown appearance, in which the chemical and spectroscopical examination showed hematoporphyrin. A few days later the patient died. There was some question as to whether the trional was the direct cause of death.

Müller,[20] Hearder [21] and others have observed this unusual coloring matter following the ingestion of sulphonal, and all records show that more than a single dose (one gramme) of the drug had been taken before the coloring matter appeared.

Nakarai [22] (1897) reported the results of 250 examinations of the urine of 144 patients. Hematoporphyrin was found in only ten cases, namely, in all of the six cases of lead-poisoning examined, two out of four cases of intestinal tuberculosis, one out of seventeen cases of rheumatism, and once in a case of empyema following the use of sulphonal. The method employed for the separation of this coloring matter from the urine was that of Salkowski. (See below.)

According to Stokvis,[23] hematoporphyrin has also been observed following an intestinal hemorrhage. He succeeded in producing an artificial hematoporphyrinuria in rabbits and dogs by giving them sulphonal (0.4 to 0.6 gramme per kilo). He found that the sulphonal, apparently by its irritative action, produced a marked hyperemia and frequently small hemorrhages into the mucous membrane of the stomach and intestines. From the hemorrhagic areas he was able to extract a coloring matter which, by the spectroscope, was shown to be hematoporphyrin. He also found this pigment in the urine of rabbits which had been fed upon fresh meat. His conclusion was that the blood which had entered the digestive tract was first changed to hematoporphyrin, then absorbed and eliminated in the urine as such.

Stokvis [24] claims that very small amounts of hematoporphyrin can be found in the highly concentrated urine of any healthy person.

Garrod [25] found traces of this pigment in the urines of twenty healthy persons. It was constantly present for a considerable period but in varying quantities. His observations were confirmed by those of Hopkins.[26]

Salkowski's Method [27] *for the Separation of Hematoporphyrin from the Urine.*— "Take about 30 c. c. of urine, add baryta mixture (equal parts of a ten-per-cent. solution of barium chloride and a saturated solution of barium hydrate), until it is completely precipitated. Wash once with water, and once with absolute alcohol, using the latter drop by drop. Transfer the precipitate to an evaporating dish, add six to eight drops of concentrated hydrochloric acid and sufficient absolute alcohol to make a thin pap, then stir thoroughly. Heat over a water-bath, then filter through a dry filter paper, and add sufficient absolute alcohol to make from eight to ten cubic centimetres of filtrate."

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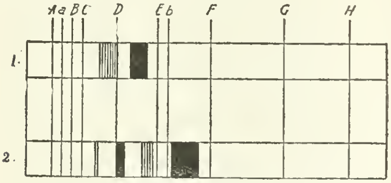
* This paper will appear in the Medical and Surgical Reports of the Boston City Hospital for 1898. An abstract of it was read before the Boston Society of Medical Sciences, February 16, 1897.

This solution (acid) may be examined directly with the spectroscope for the bands of acid hematoporphyrin, or may be rendered alkaline, preferably with ammonic hydrate, and examined for the characteristic bands of alkaline hematoporphyrin.

It is worthy of note that this alcoholic solution containing the pigment readily decomposes, so that the spectral examinations must be made within a period of two to three days.

Spectrum. — The *acid* alcoholic solution shows two absorption bands: one rather dark, situated between Frauenhofer's lines C and D, with its right border on D; and the second, sharply defined, nearly intermediate between D and E. The *alkaline* solution presents a four-banded spectrum as follows: A faint and very narrow band about midway between C and D; two between D and E, one with its left border covering D, the other nearer E; and the fourth band, which is the darkest of all, but which, however, is not well defined, includes about four-fifths of the space between *b* and F nearer to *b*.



1. Acid Hematoporphyrin.
2. Alkaline Hematoporphyrin.

H. G., female, aged thirty-eight, single, having contracted diphtheria, was admitted to the South Department of the Boston City Hospital on November 25, 1896, under the care of Dr. J. H. McCollom.

Her mother and one sister had died of heart disease. She had acute rheumatism at the age of twenty-one (seventeen years ago), at which time a mitral disease of the heart developed.

In the next thirteen years there were four recurrent attacks of rheumatism, which, with the heart disease, required almost constant treatment. She was quite well in the two years previous to the present attack of diphtheria, excepting for palpitation and dyspnea on exertion.

She had a nervous temperament, and was at times hysterical, having had six or eight hysterical convulsions (eight years ago), following a cessation of the menses. The physical examination showed the heart to be much enlarged, and the presence of a thrill over the precordia. There was a systolic murmur at the apex, transmitted a short distance toward the axilla. There was also a presystolic murmur which was faint but distinct.

Lungs and liver were negative. The abdomen was tympanitic, lax and quite tender. The extremities were edematous.

There was a diphtheritic membrane on both tonsils. A culture from the throat showed the presence of the Klebs-Löffler bacillus. The patient was given antitoxin, and gradually improved, although convalescence was very slow, probably because of the extensive heart disease.

About two weeks later (December 10th) she begun to have diarrhea and vomiting, which persisted. Soon after this she complained of pain and tenderness in the legs, which, on examination, was found to be confined to the areas along the nerve trunks.

Urine (December 22d): high; strongly acid; specific gravity 1,022; albumin, the slightest possible trace; bile and sugar absent. Sediment: a few finely granular and hyaline casts, some with renal epithelium adherent. Considerable squamous and scaly epithelium, few leucocytes, and an occasional normal blood globule. The urine chart showed the twenty-four-hour quantity to vary between 450 and 600 c. c.

On December 15th the patient was discharged from the South Department and admitted to the wards of the main hospital on the service of Dr. G. B. Shattuck, and later that of Dr. C. F. Withington.

About this time she began to lose sensation in the legs; this was followed (two weeks later) with almost complete loss of sensation up to the waist line, accompanied by involuntary micturition and dejections. The pain on pressure over the nerve trunks was extreme. Patellar reflexes diminished, but present. General muscular atrophy. Diarrhea persistent; frequent attacks of vomiting. Free, and at times, profuse perspiration.

On or about February 10th the urine was found to be very scanty in amount, but on account of the involuntary micturition it could not be collected. On February 12th, however, a small catheter specimen was obtained which had the following characteristics: Color, very dark, resembling port wine; specific gravity, 1.025; reaction, strongly acid; urophein and indoxyl much increased; chlorides and phosphates much dimished; urea, 3.15 per cent.; albumin, a very slight trace (heat test); bile and sugar absent. The sediment was abundant in quantity, and consisted of a deposit of amorphous urates and a few uric-acid crystals. Some squamous epithelium and a few pus corpuscles. An occasional brown granular cast, and rarely a blood globule. A little fat found adherent to an occasional cast.

No more urine could be obtained, in fact very little was secreted. The patient gradually lost strength, and died on the morning of February 14th. An autopsy could not be obtained.

The treatment consisted chiefly of heart tonics, such as tincture digitalis, tincture strophanthus, strychnine, etc. Bismuth and salol were from time to time given for the diarrhea, but none within four weeks of the time of death. At two different times (January 31st and February 6th) 15-grain doses of trional were given for insomnia.

The dark red urine which was collected on February 12th was examined with the spectroscope. At first, the untreated urine (acid) was used, but with unsatisfactory results, since the two spectral bands of acid hematoporphyrin could not be made out with certainty. The pigment was then separated from the urine by Salkowski's method (see above), and it was found that both the acid and alkaline solutions gave the characteristic absorption bands of hematoporphyrin.

The trional which had been taken was probably the cause of the unusual pigment in the urine of this case, although there is some doubt: first of all, on account of the length of time which elapsed (eleven and five days respectively) between the ingestion of the drug and the discovery of the hematoporphyrin in the urine; and, secondly, the inability to collect and carefully examine the urine after the trional had been taken.

Whether the disease of the nervous system, and the marked gastro-intestinal disturbance in the case had any bearing upon the cause of the hematoporphyrinuria is not known, although such a possibility exists.

BIBLIOGRAPHY.

1. Hoppe-Seyler. Jahresber. f. Thier-Chemie, 1871, No. 1, p. 78.
2. Nencki and Sieber. Archiv. f. Experim. Pathol. u. Pharmak., 1884, No. 18, p. 401. Ibid., 1886, No. 20, p. 325.
3. Nencki, M. Arch. des science. biol. p. p. l'institut imp. a St. Petersburg, ii, s. 121.
4. Baumstark. Pflüger's Archiv., 1874, ix, p. 568.
5. MacMunn. Proceedings of the Royal Society, 1880, xxxi, p. 211.
6. MacMunn. Proceedings of the Royal Society, 1883, xxxv, p. 394.
7. MacMunn. Journal of Physiology, 1885, xl, p. 501.
8. Neusser. Wiener Sitzungberichte, Abth., iii, lxxxiv, 1881, p. 536.
9. Le Nobel. Pflüger's Archiv., 1887, xl, p. 501.
10. Stokvis. Nederland. Tijdschrift voor Geneerskunde, 1889, ii, p. 413.
11. Ranking and Partington. Lancet, 1890, ii, p. 607.
12. Horley. British Medical Journal, 1890, ii, p. 1169.
13. Salkowski. Ztschr. f. Physiol. Ch., 1891, xv, p. 286.
14. Hammarsten, O. Jahresber. f. Thier-Chemie, 1892, xxi, p. 423.
15. Goldstein, F. Deutsche med. Woch., 1882, xliii.
16. Sobernheim, M. Deutsche med. Woch., 1892, xxiv.
17. Quincke, H. Berliner klin. Woch , 1892, xxxvi.
18. Herting. Deutsche med. Woch., 1894, xv.
19. Schultze, E. Deutsche med. Woch., 1894, vii.
20. Müller, F. Wiener klin. Woch., 1894, xiv.
21. Hearder, F. P. Lancet, 1896, No. 3820.
22. Nakarai. Deutsch. Arch. f. klin. Med., lviii, p. 165.
23. Stokvis, B. J. Zur Pathogenese der Hæmatorphyrinurie; Ztschr. f. klin. Medic., 28, 1-9.
24. Stokvis, B. J. Jahresber. f. Thier-Chemie, 1893, xxiii, p. 593.
25. Garrod, A. Journal of Physiology, xvii, No. 5.
26. Hopkins, F. G. Guy's Hospital Reports, l, 359, 1893.
27. Salkowski. Ztschr. f. Physiol. Ch., 1891, xx, p. 297.

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COMPLETE CONGENITAL OCCLUSION OF THE POSTERIOR NARES: REPORT OF A CASE.[1]

BY J. PAYSON CLARK, M.D.

THIS condition is one of such rarity, judging from the literature of the subject, that it might at first seem of little practical interest to the physician; and yet there is no doubt that infants may die from the want of knowledge on the part of the family doctor of the possibility of the existence of such an abnormality. Apart, however, from any practical value which the report of such a case may have, it is certainly interesting in showing how an individual may grow up and live for years in comparative health, to all intents and purposes, without a nose, the respiratory function of that organ devolving entirely upon the mouth.

In a very thorough paper published in 1886, Hubbell gives a *résumé* of all the cases of congenital occlusion of the nostrils, unilateral, bilateral and partial, which had been reported up to that time, making seventeen in all. Of these, occlusion was complete in both nostrils in eight cases, complete in the right nostril in four, left in three. It was incomplete in both nostrils in one case, and in the left in one. The occlusion was bony in twelve cases, membranous in five. Since 1886 I can find but three cases of complete bilateral occlusion reported. A. Schwendt, of Basle, published a monograph on this subject in 1890. I have been unable to obtain the original article, and the references to which I had access did not mention the number of his cases in which the occlusion was complete. Cases of unilateral occlusion by a bony or membranous septum are more common. Cases also occur in which the occluding septum is only partial in one or both nostrils. But as these two clases offer no important special conditions for consideration, I shall refer only to those cases in which the occlusion was complete in both nostrils, which seem to form a distinct group because of the more serious symptoms which they present.

The following are brief abstracts of reported cases in which the nasal occlusion was complete. Those before 1886 were taken from Hubbell's paper, although the original articles were also consulted in almost every case.

The first case which appears in literature is that of Emmert, which was seen by him in 1851. The patient was a boy, seven years of age, who had been unable to breath through his nose from birth. He was nourished with difficulty in infancy. Both choanæ were entirely occluded by a bony wall. Mucus and tears constantly discharged from the nose. The sense of smell was absent. The obstruction was penetrated with a special trochar and the openings enlarged with a catheter. Tubes were worn in the nose at times for six months. It was not ascertained in what manner or from what bones the partition arose. The father had syphilis of the pharynx. As nothing is said of the hearing, it is presumed that both it and the condition of the ears were fairly normal.

Luschka's case, reported in 1859, was a female infant who died shortly after birth. The posterior nares were occluded by a bony plate extending upwards and backwards from the horizontal plate of the palate bone to the lower surface of the sphenoid.

Bitôt discovered in a fetus of seven months the nasal forsæ imperforate posteriorly, the obstruction being due to the presence of two triangular bones of more or less regular shape, articulating above with the sphenoid, below with the os quadratum or the horizontal plate of the palate bone. Exteriorly their borders corresponded with those of the internal wings of the pterygoid apophysis, while internally they infringed one upon the other and formed a median fissure.

J. Solis-Cohen's case was an infant which had difficulty in sucking and breathing. This was relieved by boring through the occluding structures with a knife and steel probe.

Ronaldson's case, an infant with complete membranous obstruction of both posterior nares and no other abnormality, died soon after birth.

Wilkerson reports the case of a child six years old, who was hand-fed as an infant, being unable to nurse. The senses of smell and taste were very deficient. Both nasal cavities were obstructed at their posterior ends. The obstruction was partially removed by a (special) revolving trochar and canula. The bony plates appeared to be about a quarter of an inch thick. Tubes were worn for six days, then bougies were passed. Nasal respiration was established. No deafness was noted.

Schrötter's case (1884) resembles mine in many ways. The patient was a girl of nineteen years, strong and well developed, but with both nostrils completely occluded and an adenoid facies. Secretion from the nose was free when lacrymation was increased. The mouth and throat were dry most of the time. There were occasional headaches. The hearing was below normal, taste defective and smell absent. Speech was a little difficult and nasal. The membranæ tympani were deeply drawn in. The nasal forsæ appeared normal in size from in front. The closing diaphragms were a little in front of the posterior orifice of the nasal forsæ. They were bony, thickest near borders, and their direction was upwards and backwards. They were opened by galvano-cautery and chisel. After operation the breathing was free, the speech and facial expression greatly improved and the sense of smell imperfectly regained.

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[1] Read before the Boston Society for Medical Improvement, November 15, 1897.

Hubbell's patient was eighteen years old when he first saw him. He had never breathed through his nose and, as an infant, could not suckle. He was strong and well developed. There was an entire absence of nasal quality in the voice. The sense of smell was absent, but taste was good. Swallowing was more difficult than normal. The discharge of mucus from the nose was free and a source of much annoyance. Hearing was acute, and the membranæ tympani were normal. The nose was quite large, the cavities anteriorly of normal shape and size, but the mucous membrane more or less swollen and congested. The posterior border of the septum was prominent. The obstruction was at the depth of one and a half inches. It was a thin bony wall covered on both sides by mucous membrane. It was punctured without much force by giving a trochar a drilling motion. The openings were enlarged under chloroform. Sounds were regularly introduced afterwards and tubes were worn for a time.

Eulenstein's patient, aged fifty-six, had both nostrils occluded by an osseous membrane in the posterior nares. These were perforated with a drill and the openings enlarged with a nasal saw. There was no diminution of hearing in this case. No history of this case is given.

Watson's case was probably one of complete congenital bony occlusion of both nostrils. The patient was a farmer, aged twenty, who had had the left nostril opened two years before by means of a galvano-cautery. Watson cut through the bony wall in the right side with a gouge-chisel. The report of the case is very brief and incomplete.

Suchannek saw his patient for the first time when he was eleven years old. The boy's color and development were good. There was complete anosmia, although taste seemed well developed and appetite good. The hearing was unimpaired. The patient had no headaches and rarely complained of dryness in mouth and throat. The play of the nostrils was absent. The skull showed no abnormality and the intelligence was good. Anterior rhinoscopy was possible only after the removal of a mass of grayish mucus. In the posterior nares the septum was recognizable as a projecting ridge between the occluding membranes. The latter were also visible through the anterior nares. The membranes were pierced by a trochar and tubes were worn for three months. The sense of smell was not recovered.

My patient, L. L., a girl of eighteen, upholsterer, came to the Out-patient Department of the Massachusetts General Hospital last June, on account of complete inability to breathe through the nose. She was born in Nova Scotia, as were also her parents. She has three brothers, all living. The mother died of consumption when the patient was seven years old. The father is living and well. All the patient's relatives are tall, but she is barely five feet in height. The condition of which she complains has existed since birth, but its cause was unrecognized. It was discovered at once that the infant could not nurse, so that feeding with a spoon had to be resorted to. Very early in life it was thought she suffered from headache or earache, and at the age of four months without the concurrence of any illness her ears began to run. Otherwise she was a healthy child, having had only measles and whooping-cough, both in a mild form. When the patient went to school she began to have fainting attacks and dull headaches, which have continued with little diminution up to the present time. In studying, she found it difficult to concentrate her mind, so that, as she was ambitious, she was obliged to devote nearly twice as much time as other children to her books. She is short and slight, with the typical "adenoid face," that is, the face of a mouth-breather — drooping eyelids, narrow, long face, pinched nose and slightly open mouth. The hard palate is very narrow and high, the upper teeth badly crowded. There appears to be no abnormality about the chest, which seems fairly well developed for a girl of her size. The chest-expansion appears about normal. She is much troubled with dryness in the mouth and throat, especially in the morning. During any illness she has often experienced considerable difficulty in breathing. The sense of smell is entirely wanting, although taste is well developed. The patient has a good appetite, enjoys her food, and has her favorite dishes as well as those she does not like; but it was evident on experiment that she could make none of the finer distinctions of taste for which the olfactory organs are necessary. Some of her distinctions of taste are interesting: A wintergreen lozenge had a "sweet and stingy" taste. A sassafras lozenge was simpy "sweet." Ginger gave a burning sensation. Lozenges of a cinnamon or clove flavor were the same, but both were distinguished from ginger. The patient insists that she can tell the difference between meats; for instance, she likes veal but does not care for beef. She also says she is very quick at distinguishing bad butter from good.

On examination both nostrils were seen to be more or less filled with a rather thick grayish mucus, which at times causes the patient considerable annoyance, especially when she has a cold. On getting rid of this mucus a good view was obtained of the anterior nares. The nasal mucous membrane was pale, the septum deviated to the left, presenting a ridge in the left nostril which was quite obstructive.[2] The right lower turbinate was enlarged. The occluding wall was not visible on account of the large turbinate on the right and the ridge on the left. But a probe introduced into each nostril met the obstruction about five centimetres from the anterior nares. It was apparently covered by smooth mucous membrane. The soft palate lay so close to the posterior pharyngeal wall that posterior rhinoscopy was not possible. The forefinger introduced into the posterior nares discovered a firm wall in each choana, covered with mucous membrane, forming a continuous surface with the vault and sides of the pharynx, meeting the septum a little in front of its posterior border, so that the latter stood out under the finger as a smooth ridge. The naso-pharynx was small and undeveloped.

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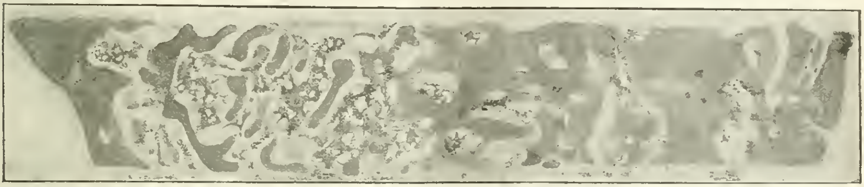
[2] The patient fell and injured her nose when she was six years old. This may have been the origin of the septal deformity or what seems equally probable the deformity may be developmental, the result of the growth of the septum while the nasal chambers remained undeveloped.

On operating, the occluding walls were found to consist of bone, varying in thickness from two to nine millimetres, being apparently thickest near the septum and nasal floor. After the application of a ten-per-cent. solution of cocaine in the right nostril, I drilled through the bony wall with a trephine (five millimetres in diameter) run by an electric motor. The progress was a slow one on account of the extreme hardness of the bone in some places. I enlarged the opening from time to time, so that now it is eleven millimetres in width by thirteen millimetres in height. In the left nostril I first removed the ridge with a trephine, and then drilled through the partition in a similar manner. The bony wall appeared in general rather thicker than that in the right nostril. The opening in the left nostril is somewhat smaller than in the right. It will not be possible to make this much larger without first straightening the deviated septum. I shall do this operation later if the nasal respiration does not seem sufficiently free.



Longitudinal Section of a Core of Bone removed by trephine through the thickest portion of the obstructing wall in the right nostril, showing the density of the bone. (Dimensions of section, 10 mm. × 2 mm.)

No trace of the sense of smell has developed. There was only a slight impairment of hearing before the operation, and there has been no perceptible change since. Dr. H. L. Morse kindly examined the ears and tested the hearing. He reports a large dry perforation of the lower posterior portion of each drum. Hearing: right ear, very low whisper 16 ft., watch 42 in. ($\frac{42}{45}$) left ear, very low whisper 16 ft., watch 37 in. ($\frac{37}{45}$).

On account of the headaches not having ceased (although much better) since nasal respiration has become established, I thought an examination of the eyes important. Dr. F. E. Draper was kind enough to make the examination for me. He reports vision, right eye $= \frac{10}{12}$ with $+ .50$ D. cyl., ax. $.75° = \frac{12}{12}$; the left eye the same. He says, "You will see that the amount of astigmia is very small, but I believe it is sufficient to account for the headaches."

The patient has had no attack of fainting since the operation. I have not found bougies or tubes necessary in after-treatment as the openings which I have made have, so far, shown no tendency to become closed.

The etiology of these cases is obscure. Dr. C. H. Knight says they "would seem to be an overgrowth of bone from hypernutrition." As to the origin of the bony plate, Luschka is of the opinion that it is a continuation of the free border of the horizontal plate of the palate bone, while Kundrat thinks it is an extension of the vertical plate, and Hubbell suggests that it may arise from both. Whatever its origin, the symptoms resulting from this complete nasal occlusion are distressing enough. As Dr. Knight says, such an occlusion is "almost of necessity fatal to the nursing infant."

Of the cases which I have been able to collect from literature, one was a seven months' fetus, two were infants who died soon after birth, with apparently no other ailment, and one was operated on in infancy. Many infants must have died from this condition in whom it was never recognized. And when one considers the serious handicap that such a condition must be to the infant in its struggle for existence I think the greatest wonder must be that any such cases have lived to grow up. For there is not only the inability to suckle and the consequent difficulty in obtaining sufficient food, but also the exposure of the bronchial tubes and delicate air cells of the lungs to the constant irritation of air insufficiently warmed, moistened and filtered. The absence of the olfactory sense is a natural result of this condition. In Schrötter's case it was imperfectly restored after operation, but this seems to be an exception to the rule. The accumulation of the nasal secretion is usually spoken of as an annoying symptom. Dryness of the mouth and throat is at times very trying. The facies is the characteristic one of constant nasal obstruction. Articulation is, as a rule, difficult, and the voice has that dead quality (absence of resonance) which accompanies nasal obstruction from other causes.

In Schrötter's case the speech and facial expression is said to have greatly improved after operation. It is not stated how gradual this improvement was. In my patient there has been no appreciable improvement in either respect. If such an improvement does occur, it must be very gradual, as a result of changes which may take place, such as increase in size of the naso-pharynx, broadening of the hard palate, etc. The patient may be too old for such changes to take place. I would say, however, that the soft palate already hangs far enough away from the posterior pharyngeal wall to allow a good posterior rhinoscopic examination, and it is possible the dentist can do something towards widening the upper jaw. Headache is a common symptom. The eyes are usually unaffected. Hearing seems, as a rule, to be uninfluenced by this condition, Schrötter's and my case being apparently the only exceptions. Knowing the effect on the drum membranes of repeated swallowing with the nose closed, one would, I think, expect some impairment in hearing to be the rule instead of the exception.

Before closing, I wish to express my thanks to Dr. J. L. Goodale for his beautiful preparation of the section of bone from which the drawing was taken, as well as to Drs. Morse and Draper for their special examinations.

REFERENCES.

Emmert. Lehrbuch der Chirurgie, Stuttgart, 1853.
Luschka. Archiv. f. Pathol. Anat., xviii, 1859.
Bitôt. Gaz. Med. de Paris, 1876, No. 36, p. 430.
Wilkerson. North Carolina Medical Journal, June, 1882, p. 305.
Schrötter. Monatsch. f. Ohrenheilk., April, 1885.
Hubbell. Buffalo Medical and Surgical Journal, December, 1886.
Solis-Cohen, J. Diseases of the Throat, etc., p. 385.
Knight, C. H. Medical News, November 10, 1888.
Eulenstein. Deutsch. med. Woch., November, 1889.
Watson, A. W. Philadelphia Polyclinic, June, 1892.
Suchannek. Cor.-Bl. f. Schweize Aerzte, No. 7, 1892.
Schwendt. Annual of Universal Medical Science, vol. iv, D-11, 1891.

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PYONEPHROSIS.

A Clinical Study, with Detailed Report of a Case of Extreme Type.

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The following case is one of extreme type, and is reported in full because it formed the basis of a study that shows of what value, as well as limit, the modern researches of Kelly and others may have in the practical treatment of the severer types of pyonephrosis.

Mrs. Wm. H. H., age thirty-four years, was married in July, 1884, at which time she was in excellent health. Thirteen months after her marriage she was delivered of a six months' dead fetus. Immediately subsequent to this event she began to complain of symptoms that led to a diagnosis of disease of bladder, and backward displacement of the uterus. The bladder trouble becoming intractable, she went to the Women's Hospital in New York in 1887, and had a buttonhole operation performed by Dr. Emmett. She remained at the hospital five months. Before this operation there was painful micturition, pyuria and vesical tenesmus, with resulting insomnia and debility. Little improvement immediately followed the operation, but in about a year she began to pick up both in health and spirits.

In February, 1889, she re-entered the hospital, and had the opening in her bladder repaired. Shortly afterwards she was operated on for lacerated cervix and perineum. She remained in the hospital until the last of June, 1889, during which time she gained greatly, and returned home in a fair condition of health.

Conception occurred soon after her arrival home and January 15, 1890, she gave premature birth to a seven months' child, which survived for a few weeks. During her delivery the cervix was again lacerated and evidently there followed a condition of sub-involution, with backward displacement of the uterus.

In April, 1894, I was called to see her for the first time, by her attending physician, Dr. W. J. Clarke, of Milford, and repaired the cervix, replacing the uterus at the same time. She made a good recovery from the operation, but the uterus dropped back into its former position, and gave rise to such disturbance that treatment became necessary, and in June she entered a private hospital, where I performed an operation for the ventro-suspension of the uterus. Owing to her previous history of cystitis, great care was exercised and every precaution taken before, during and subsequently to the operation to avoid irritating the bladder. An easy recovery followed the operation. During her stay in the hospital she had an attack of sharp pain, followed by soreness along the track of the left ureter; and a diagnosis of ureteral trouble, either passage of a calculus, some foreign body, or ureteritis, was made. She claimed, before entering the hospital having had two similar attacks. The attack readily subsided, and, on her return home, she was in a comfortable condition except perhaps for attacks of dysmenorrhea.

She had no further attack of colic until November, 1894, when severe pain occurred along the right ureter, and confined her to her bed for several days. These attacks of pain now became more frequent, appearing about every five weeks, until September 24, 1895, when she took to her bed and never left it until she entered my private hospital, July 28, 1896.

During the early period of her confinement, she had periodical attacks of pain, followed by the discharge of great quantities of pus in the urine and subsequent temporary improvement in health and comfort. Before the discharge of pus a large swelling occurred in the region of the right kidney, which subsided simultaneously with the evacuation of pus. The urine became strong smelling, alkaline, and contained a thick deposit of mucus. Micturition was painful; the bladder was irritable and at times there was some pain in the region of the left kidney. During her long period in bed the bladder was washed out daily with a solution of boric acid and other bland antiseptics and, by this means, the distressing symptoms were kept under control. Her appetite rarely suffered during this long period of disability, and she insisted upon a liberal diet of meat and vegetables, at the same time resenting every effort in the most strenuous manner to place her upon a diet of liquid food. Emaciation was progressive and extreme. From time to time uremic symptoms set in and threatened dissolution, but a special activity of the bowels was efficient to avert the fatal termination.

I lost track of the patient for several months after she took to bed, and it was late in the spring of 1896 that I was again called to see her. At this time the diagnosis was obvious and the question of treatment the main point for decision. Her condition was so feeble that she could barely move in bed, and only with the assistance of others. This fact precluded any severe operation; so I determined, if possible, to catheterize the diseased kidney, and, by this means, to administer local medication. During the months of May and June I made three attempts at the home of the patient in Hopedale, but could get neither catheter nor bougie beyond a constriction situated in the ureter, about one inch from the pelvis of the kidney. In July she was brought to the hospital on a mattress, where I had greater facilities for studying the case and its treatment. For a week after entering the hospital she was in a dangerous condition, and only treatment of the blandest nature could be tolerated. Pain in the side, nausea and vomiting, headache, insomnia and confined bowels were prominent among her symptoms. Her temperature was elevated, and her pulse was rapid and irregular. In other words, the fever of septic absorption was present. At the end of a week she quieted down somewhat, and I again practised the introduction of the ureteral catheter at intervals of every third day. However, I could not get it beyond the constriction that was situated just below the kidney, and I did not dare to exercise force for fear of forming a false passage.

The chart (*A*) gives a tabulated statement of the temperature, pulse, amount of urine and its specific gravity, and the character and number of stools for the second and third hospital weeks, which enables one to form some idea of the condition of the patient previous to the catheterization of the kidney and the effect of treatment.

July 12th I determined to take counsel on the case, and, knowing of the successful work and experience of Dr. Edward Reynolds, I referred to him.

On the morning of the 13th Dr. Reynolds passed a catheter into the kidney, and drew off a quantity of thick fetid pus by means of aspiration. The kidney was washed out with normal salt solution, and the catheter fastened *in situ.*

The question of treatment was then debated; and it was decided to drain, wash out and clean the pus cavity with salt solution, and medicate with a one-half-per-cent. solution of nitrate of silver, removing the excess of silver solution with a second injection of salt solution.

A daily record of the quantity of urine was kept, together with its specific gravity, the amount of residual urine aspirated before washing out the kidney, the quantity of sediment that was held in suspension after ten hours' settling, and the amount of salt solution that flowed into the kidney from a given height of the syringe and in a definite time (two and one-half feet and three minutes). From time to time more complete analyses of the twenty-four-hour urine were made by Dr. Ogden, and are embodied in his separate report. By these means it was hoped to determine the general and constitutional improvement and the local changes, contraction of the pus cavity and diminished suppuration.

The catheter was kept in place for seventeen days. At the beginning of treatment eight or nine ounces of salt solution were used in each injection. This diminished in amount until, on the seventeenth day, only two ounces were used with each washing, which showed extensive contraction and diminution in the capacity of the pelvic cavity.

The quantity of urine secreted by the diseased kidney immediately after catheterizing was about 14 oz. This diminished in quantity until only 10 oz. were secreted at the time the catheter was withdrawn. From the left, or normal kidney, however, there was a great increase in the daily secretion of urine, so that from an average of about 20 oz. the amount reached 43 oz. on the seventeenth day.

The specific gravity of the urine from the right kidney did not change materially, but that of the left kidney increased slightly, about .002.

The quantity of urea excreted by the diseased kidney did not vary half a grain in twenty-four hours, the maximum amount being 1.47 gr. There was a simultaneous increase with the amount of urine from the left kidney, varying from 7.17 to 11.07 gr. The diminished quantity of urine and urea showed extensive destruction of the right kidney. The residual urine aspirated before washing out the kidney served the basis for calculation of the completeness of drainage through the catheter. At first this varied from five to eight ounces, but by the seventeenth day absolutely nothing could be obtained. The amount of sediment was supposed to vary with the amount of local destruction. There was a tendency toward increase, but I could draw no definite conclusion from this data. The pulse and temperature gradually assumed the normal range, with a single fluctuation on the fifth day, due to a plugging up of the catheter and slight hemorrhage following the administration of an excessive quantity of silver solution. The appetite improved greatly, and the patient rested well; in fact, there was a remarkable improvement in health, strength and comfort.

About the fifteenth day there was some evidence of slight soreness, frequent micturition from the bladder, and nervousness. This increasing, it was thought advisable to remove the catheter, which was done on the seventeenth. The details of these seventeen days of treatment with catheter drainage of the right kidney are shown in the chart (*B*).

The kidney drained so well before the catheter was removed that it was hoped spontaneous drainage would occur through the dilated ureter after the instrument was withdrawn, but in this we were disappointed.

On the evening of August 30th, the day the catheter was withdrawn, the patient complained of pain in the right side and general disturbance. The bladder was washed out and a large mucous plug removed. The patient slept fairly well at night.

August 31st. Swelling in right side causes pain and uneasiness. Urine passed during the day, 49 oz. of 1.012 specific gravity.

September 1st. Pain required suppository of morphine; at 11 A. M. chilly sensations followed, with nausea and vomiting; at 12 (noon) a second chill, lasting 40 minutes; 47 oz. of urine was passed during the day, of 1.010 specific gravity.

September 2d. Inserted renal catheter with great ease and aspirated several ounces of very foul-smelling pus. The kidney was washed out with normal salt solution, and treated with nitrate of silver solution. Patient had a comfortable day and slept well at night. Catheter was left *in situ.*

September 3d. This morning four ounces of urine were aspirated, which was mixed with bloody pus. The kidney was washed out and treated with silver solution. About 3 P. M. it was noticed that the renal catheter did not drain, and the aspirator was applied. Fourteen drachms of turbid urine were withdrawn, which was followed by a discharge of blood. An attempt to throw in some salt solution failed and the catheter was therefore withdrawn and found filled with a blood-clot.

The catheter was cleaned, and replaced with but slight difficulty. Twenty-four hours' urine: right kidney, 8 oz. (specific gravity 1.014); left kidney, 23 oz. (specific gravity 1.011).

September 4th. At 7.30 A. M. 5¼ oz. of urine and stinking pus, with blood-clots, was aspirated through the catheter. The quantity, as well as the character, of the aspirated material showed that drainage through the catheter was imperfect. The kidney was washed out and treated with silver solution. During the twenty-four hours 8¼ oz. of urine and pus was collected from the right kidney, having a specific gravity of 1.013, and 56 oz. from the left kidney. The renal catheter became plugged, and the aspirator was applied a second time at 7 P. M. The patient had a fairly comfortable night.

September 5th. The catheter became plugged during the night, and it became necessary to remove it for cleansing. In attempting to replace the catheter the ureter was found very irritable at the site of the old stricture, and bled freely from the slightest touch of the instrument. I found it impossible to reach the kidney, and waited several hours for the parts to quiet down. During the afternoon an attempt was again made to catheterize the kidney, but in vain. The patient passed a very restless night. The temperature increased steadily during the day and night, and the bladder was very irritable.

September 6th. Twice during the day attempts were made to catheterize the kidney, but were unsuccessful, hemorrhage and pain following each effort. The temperature steadily increased, reaching 102° in the evening. The right side was much swollen over the region of the kidney, but it was less painful. Pain was complained of on the left side. The patient passed a poor night.

September 7th. The pain in right side required morphine. Blood-clots were passed in her urine. An attempt to pass ureteral catheter produced sharp, shooting pains, more marked at the junction of bladder and ureter. The swelling in the side increased. Patient was very nervous.

September 8th. Realizing the uselessness of any further attempt at local treatment through the catheter and encouraged by the fair result in a similar case treated by incision and drainage, which was reported to me orally by Dr. John L. Hildreth, I cut down upon the tumor, emptied it of eight or ten ounces of stinking pus, and inserted a large rubber drain. The operation was done quickly under a short anesthesia with chloroform mixture. Measures were taken to prevent chilling the patient and obviate shock. The height of the reaction was reached the night of the operation, the temperature rising to 103° F. There was a morning drop to normal, with a secondary rise that night to 101° F. The temperature remained normal after this, except with an occasional rise when complications of the wound healing occurred. The pulse remained rapid and weak. The secretion of urine was much diminished, and uremic symptoms set in, loose bowels, nausea, vomiting, headache, chilly sensations and great nervousness. Stimulants were given with nitro-glycerine, strychnia and digitalis, but failed in the desired effect, and so pilocarpine was resorted to, with relief to the patient.

September 9th. Restless all day, bowels loose, scanty urine, rapid pulse, anorexia. Nervous system much depressed. First part of night patient was very restless.

September 10th. The patient complained of much pain in the bladder, of a sharp cutting nature, and pain in the wound of right side. Pain uncontrolled by a quarter-grain of morphine, but was eased with half a grain. Fourteen ounces of urine, with a specific gravity of 1.019 were passed by bladder during the day. As she had not passed urine of this specific gravity for a long time previously, it was suggested that the concentration of the urine was partly the cause of the bladder pain, as well as the pain noticed in the region of the left kidney. Patient was sore, and could not turn in bed. She slept fairly well at night.

September 11th. Felt better; some headache, and nausea with vomiting. From then on she improved in health, only complaining of local soreness, and with a rapid pulse, the most prominent symptom of her constitutional disturbance.

On the 15th and 18th of September local inflammation about the wound caused a slight rise of temperature and general disturbance; and on the 25th of October she had a slight attack of influenza, with chill, and rise of temperature lasting three days.

Chart *C* shows the pulse and temperature, as well as quantity of urine secreted daily, from the time the ureteral catheter was first withdrawn until the operation of nephrotomy was performed.

Chart *D* shows the condition of the pulse, temperature and urine during convalescence. She left the hospital November 4th in good spirits.

Chart *E* shows the pulse and temperature after the final operation, nephrectomy, was performed.

The following reports, taken from letters of her husband, show her final state:

November 24, 1896. Walked into the bedroom with assistance. (First time for over one year.)

December 2, 1896. "Mrs. H. is getting along nicely, is able to walk without assistance, and lies down only once a day for rest."

December 20, 1896. "Mrs. H. continues improving right along, and is as happy as a lark. She says that sometimes she feels as if she did not have a bad side at all."

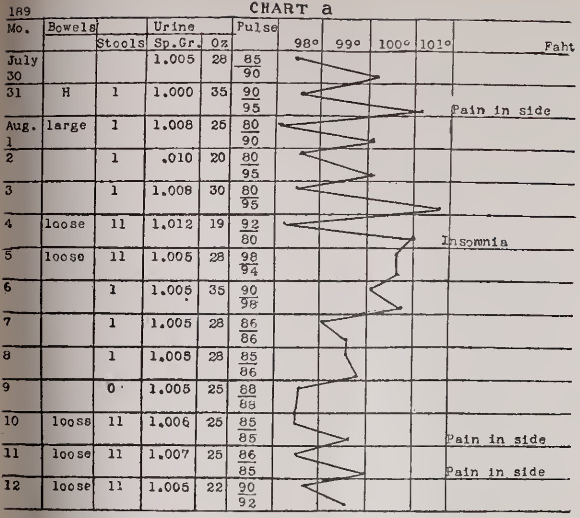
January 13, 1897, Lowell, Mass. "We shall come in and make you a call some Saturday afternoon or Sunday morning."

March 5, 1897. Just after last writing Mrs. H. "lost her hired girl and did her housework for one week; but at the end of the week her side became quite sore, so that she had to stop work." This caused a proliferation of granulations, and the patient calling at my office I cauterized the wound.

May 16, 1897. "The wound in the side is almost healed (free from granulations). I have been using Markasol lately, and since using it have had no trouble with the proud flesh."

Immediately after making the fistulous opening great trouble was experienced in collecting the urine. As the wound closed down, this was gradually overcome and by a careful study of apparatus, with some experimenting, a tube and reservoir was devised of very simple character yet of great functional perfection. It consists of a piece of hard-rubber tubing, one-fourth of an inch in diameter at one end, and tapering to three-sixteenths. The tube is two inches long, and bent at right angles three-sixteenth of an inch from the smaller end. A round piece of thick rubber, about the size of a silver dollar, is perforated with a small circular hole at the centre. This is stretched over the tube as far as the angle. To the larger end of the tube a piece of soft-rubber tubing is attached, covering the tube as far as the rubber dam or diaphragm. This is about three inches long, and two or more holes are cut in the end to admit better draining. This end passes into the kidney. To the outer short end of the hard-rubber tube is attached a piece of smaller soft-rubber tubing about a foot and a half in length. This acts as a reservoir. It passes through a hole in the clothing, and the end is held in the skirt-pocket where it is closed by an ordinary fountain-syringe snap. The tube is held *in situ* by two or three folds of a bandage about the waist passed over the diaphragm. The reservoir can be emptied frequently without any inconvenience to the patient. Contrary to what might be expected of such a small closed receptacle, the urine flows into it as perfectly

CHART a



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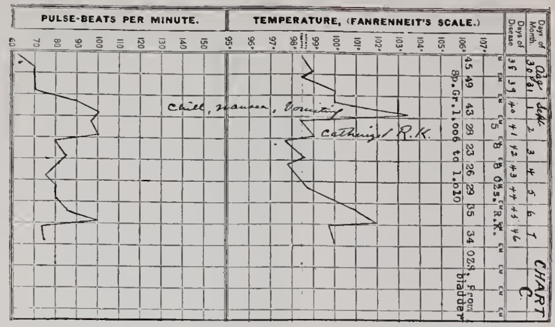
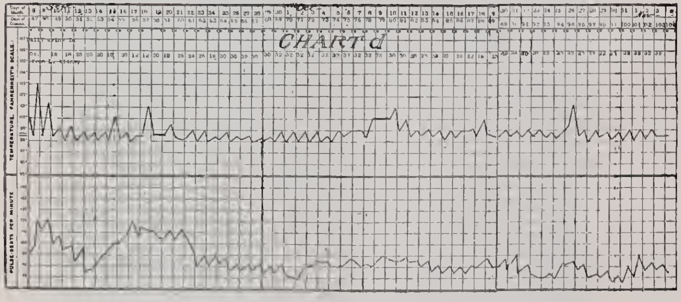
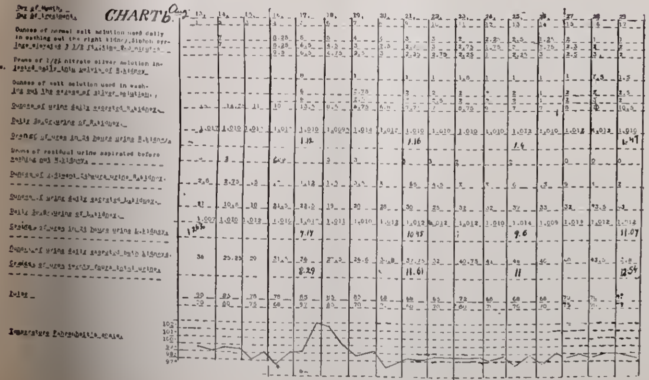
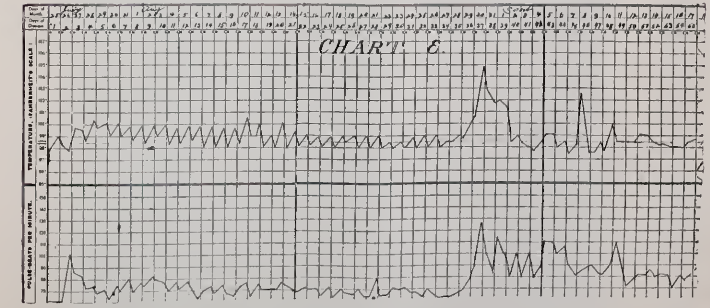
Mo.	Bowels	Stools	Urine Sp.Gr.	Urine Oz	Pulse	
July 30			1.005	28	85 90	
31	H	1	1.000	35	90 95	Pain in side
Aug. 1	large	1	1.008	25	80 90	
2		1	.010	20	80 95	
3		1	1.008	30	80 95	
4	loose	11	1.012	19	92 80	Insomnia
5	loose	11	1.005	28	98 94	
6		1	1.005	35	90 98	
7		1	1.005	28	86 86	
8		1	1.005	28	85 86	
9		0	1.005	25	88 88	
10	loose	11	1.006	25	85 85	Pain in side
11	loose	11	1.007	25	86 85	Pain in side
12	loose	11	1.005	22	90 92	









as can be desired, without overflowing or leaking about the margin of the tube when regularly emptied. The soft-rubber dam admits movement of the body without altering the axis of the hard-rubber tube, and thus does away with the irritation found where a rigid diaphragm was used. The soft tip prevents irritation of the kidney, and admits the tube to readily conform to the shape of the canal. The hard tube prevents contraction and closure of the fistulous opening and insures good drainage. The small short turn-down prevents closure of the rubber reservoir from bending short on itself, and is so short and small that it exerts no leverage upon the longer portion of the tube during movements of the body.

Finding that active exercise produced an irritation of the fistulous opening that rendered her uncomfortable for several days afterwards, Mrs. H. consulted me in the spring of 1897 about removal of the offending organ, and entered my hospital for this purpose.

July 25th. The organ was found firmly bound by adhesions to the peritoneal covering, and was removed by *morcellement.* The hemorrhage was controlled by clamps. Convalescence was uninterrupted until the the thirty-sixth day after the operation, when a sharp attack of pyelitis occurred in the left kidney, with anuria for five days. The temperature and pulse ran high, and the dissolution of the patient seemed imminent. However, the affair quieted down, and with the exception of a transient subsequent disturbance of pulse and temperature, the further recovery was without event. She left the hospital eight weeks after entering, and returned to her home, now in a remote part of Connecticut.

Recent reports state her to be in a fair condition of health. October 31st she took a six-mile drive in a carriage, driving the horse herself.

(*To be continued.*)

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MASSACHUSETTS GENERAL HOSPITAL.

Clinical Meeting of the Medical Board, December 10, 1897.

(Concluded from No. 7, p. 150.)

Dr. J. C. Warren presented a paper on

MODERN OPERATION FOR CANCER OF THE LIP.

The first communication is in reference to a disease which does not involve a very formidable operation, but is of importance to the patient, nevertheless, that is, cancer of the lip. Cancer of the lip is an infection which we all know is of a class which is susceptible of cure by operation in quite a number of cases. The prognosis is favorable, and perhaps it is due to that fact that surgeons have become more or less careless in their precision in the operation, perhaps less enterprising than in some other forms of operation; and it has seemed to me of late years the tendency to diminish the extent of the operation had increased with the advent of cocaine anesthesia. Many of these cases were relegated to the out-patient department, patients coming and having the usual classical V-shape of lip taken out under cocaine and going home. In reviewing the whole subject of cancer the American Surgical Association undertook two years ago to see what further steps could be taken in operative technique for the cure of the disease so as to prevent a recurrence, and since then I have tried to do a routine operation which would cover a much larger area than used to be contemplated. We all know that the route of the disease is from the lip; that it leaves that primary point of infection and involves the gland at one or the other side of the jaw just inside the lower margin of the horizontal portion of the jaw, and also occasionally a gland on the median line underneath the chin. Sometimes one and sometimes both sides are affected. It seems to me, if I were afflicted with this disease, I should want an operation which would cover at the first operation all those affected areas; and accordingly I have of late years extended the operation to include, not only the portion of the lip primarily affected, but to go beneath the chin and clean out the submaxillary region.

The specimen I have here illustrates the method. The operation, performed upon an old man, consisted first in an incision extending from one facial artery to the other along the border of the chin. The skin was dissected off from the bone and the submaxillary region on both sides thoroughly dissected out. The submaxillary gland on each side is accompanied almost always with lymphatic glands which are infected; this gland was removed, with the contiguous connective tissue and enlarged lymphatic glands. When one side had been dissected out and the dissection carried continuously with the mass of connective tissue supposed to include the lymphatic vessels up to the median line, the dissection was taken up on the opposite side and the gland removed on that side. Two large masses hung down from the median line and the usual V-shaped incision was now made, which was continued down to the point of the chin, and, last of all, the mucous membrane was cut through and the whole mass removed entire, so that we had the specimen as you see it removed in one continuous mass, that mass being supposed to cover the area of primary and secondary infection in this disease.

Dr. Whitney has prepared the specimen by the Kaiserling method. The submaxillary glands are pretty large glands, and it would seem as if the removal of so much salivary-secreting tissue would be a detriment to the patient; but I saw the patient to-day — the operation was done in October — and there has been no complaint of any absence of secretion in the mouth. The wound healed fairly well two-thirds of its extent. A sinus is still discharging on one side. I merely show the specimen to indicate the scope of what is generally considered a minor operation in surgery.

SARCOMA OF THE MESENTERY OF THE CECUM.

The other case I wish to show I was asked to see about six weeks ago in the out-patient department. A boy was apparently suffering from appendicitis. He had a small tumor at the McBurney point. The symptoms had lasted about a month and consisted chiefly of pain more or less intermittent at that point and febrile disturbance. The boy was supposed to be suffering from chronic appendicitis, was admitted to the hospital and kept under observation for about ten days during which time the symptoms gradually subsided although the local tumor remained. At the end of that time it was decided that an operation between the attacks should be performed. On cutting down upon the tumor at the usual point I found instead of suppurative inflammation a new formation. The tumor lay at the ileo-cecal angle in the corresponding portion of the mesentery. The parts were more or less glued together and I was not sure that there was not a loop of intestine caught up by the gluing process. After taking it for a piece of intestine and drawing the bowel out, I put my finger under it and it turned out to be a very much enlarged appendix. It was as large as the thumb in its lumen. I cut off a piece of the tumor and submitted it to Dr. Whitney, and it was found to be a round-cell sarcoma with glands going back to the root of the mesentery. The ileum and colon were both cut through and the incision extended down to the farthest point of the affected part and a V-shaped mass of mesentery was removed including the cecum and a portion of the ileum. The very excellent drawing of my first assistant, Dr. Mosher, shows very nicely, here being the ileum and here the large intestine, here the appendix and here the mesentery. You would hardly recognize the appendix owing to its great size.

The ends of the bowel were united by the Murphy button, the boy's abdomen filled with normal salt solution, the incision closed and the boy placed in the Trendelenburg position. The case did well. On about the fifth day there was a rise of temperature; the temperature went up and down, remained down a day or two and began to rise again. One evening about a week after the operation I took out one or two stitches and passed my finger into the peritoneal cavity thinking there might be pus there. There was no pus. There was no abdominal infection whatever or distinct stitch abscess, but rather a superficial skin irritation. The wound has entirely healed and the boy is in excellent health. The button passed on the twelfth day. Fearing there might be some tendency to obstruction seidlitz powders were given in the early treatment of the disease to keep the feces fluid so that they should not thicken up and block the lumen of the button and we had numerous discharges from the bowel during the first week.

The patient is here on exhibition. Here is the button to show the large size used.

The question about recurrence now arises; and I think the prognosis is certainly not favorable owing to the extent to which the disease had grown. I propose now to put the boy on post-operative antitoxin treatment.

The patient has since taken the antitoxin, about two drops of unfiltered Coley solution being given and at present time, February 19, 1898, is in good health.

* * *

Clinical Department.

FOUR CASES OF RUPTURE OF SPINA BIFIDA SAC, THREE DURING CHILDBIRTH.[1]

BY AUGUSTUS THORNDIKE, M.D.

My object in speaking of this accident to-night is not to recite the details of any unusual medical facts, but to study this little group of cases of rupture from the therapeutic standpoint, to inquire "How are we to meet this emergency as it suddenly confronts us?"

When one reflects that spina bifida is the commonest form of congenital anomaly of the spine, occurring more than once in every thousand births; that the sac is frequently devoid of a covering of skin over the larger portion of its surface; furthermore, that this exposed membrane is extremely thin and delicate, — it is not surprising that rupture may occur. Nor do I believe it an unusual accident of childbirth, since I have myself been called to operate during the past four years upon three ruptures occurring during labor and one case of spontaneous rupture.

Case I, seen with Dr. George Haven, had delivered itself in the Out-patient Department of the Boston Lying-in Hospital. Labor began at six A. M., May 31, 1895. The attendant came promptly when summoned, but arrived at nine to find mother, babe and placenta on the floor of the room. When I saw this child it was two days and a half old, and the leaking fluid had soaked the dressing with cerebro-spinal fluid twice a day. As it was already after sunset it was decided to await daylight; so the sac and surrounding skin were cleansed and a sterile gauze dressing applied with a bandage. Although the child was in good condition when I left, it had several convulsions in the night. The dressing and clothes were drenched in the cerebro-spinal fluid, and it died at five in the morning, presumably from direct septic infection of the spinal meninges.

Case II was seen with Drs. Edward Reynolds, Harlow and Higgins. Since birth, that is for twenty-four hours, the sac, which was in the lumbar region and was partly collapsed, had been leaking slowly into a dressing. Through the wall could be felt one or two bands. The baby was etherized lying on hot-water bottles, the sac incised and a small quantity of reddish fluid evacuated. There were two bands running from the spinal opening to the wall of the sac, about one and a half inches long and as thick as a slate pencil; they were deep red in color, very soft, and did not look or feel like nerves; so they were divided. The healthy skin was incised around the base of the tumor and the dissection carried down to the sac wall, which was cut off and the edges tightly stitched together with catgut. The wound in the skin was closed by a second row of catgut sutures. During the night there were convulsions; and the child died thirty-one hours after operation, presumably of septic meningitis.

Case III was seen with Drs. J. E. Cleaves and N. F. Chandler in Medford on April 9, 1897. Dr. Cleaves has given me the following notes of the confinement: The labor was a rapid one, and the child was born a few minutes before Dr. Cleaves arrived. As soon as the placenta and perineum were attended to the baby was seen and the sac discovered ruptured and collapsed. After washing with bichloride it was dressed with corrosive gauze. As the sac was quite long (six inches) it was folded over in the dressing and a snug bandage applied. I operated five hours later. The child, a large, healthy-looking baby, was lightly etherized lying with its stomach on a hot-water bottle (the water at 110° F.) and well covered to keep it warm. The dressing, which was perfectly dry, was removed, uncovering a pedunculated sac completely collapsed, covered with healthy skin except at a spot at the apex where there was a small tear. It was translucent, and no bands were seen or felt; I therefore assumed that no nerves were involved, that is, that it was a simple meningocele, and, surrounding the base by an elliptical incision, the sac wall was tied with a silk ligature, cut off, and the skin wound closed with four silk sutures. This took but a few minutes and, after applying a large sterilized dressing, the baby was put in a warmed bed with heaters, and given with the medicine-dropper ten drops of brandy well diluted. Brandy was given every half-hour for four hours, then three times a day for three days. The wound united by first intention; there was no shock, and the baby nursed well.

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[1] Read before the Boston Society for Medical Improvement, November 15, 1897.

I again saw the baby November 14th, aged seven months. Save for one attack of diarrhea in the summer, it has been well and is fat. The parents told me that, after healing, two little pimples had appeared near the wound, and discharged until July, when the silk ligature was removed and it healed.

Case IV. Baby O'C., a seven months' premature infant, was born January 21, 1896, at the Boston Lying-in Hospital, and transferred to the West End Infant Hospital the next day, in the service of Dr. T. M. Rotch, who immediately called in Dr. R. W. Lovett. The infant was kept in the brooder and fed every hour. The tumor was the size of half a large orange, sessile, half covered with thin skin showing several ulcers, and the rest a very thin membrane.

As it was quite tense and the infant's condition did not warrant operation, Dr. Lovett aspirated to reduce the tension and so avert rupture which seemed imminent. This procedure was repeated several times during the following week, but although it took a fair amount of food the weight decreased and the child seemed more feeble. On February 1st the sac ruptured and I was summoned as neither Dr. Rotch nor Dr. Lovett were within reach. The child was taken from the brooder and placed on the operating-table surrounded by heaters. No attempt was made to excise the tumor but two continuous silk sutures were quickly placed so as to close the rent tightly. On several occasions the dressing was soaked with urine; nevertheless the wound was closed and dry when the stitches were removed on the fifth day. On the seventh day there was a little moisture and collodion was painted on. The temperature, previously normal, rose during the day from 100° to 103° F. and death ensued on the eighth day after operation.

What conclusions are we to draw? Should one temporize? Should one operate? Let us again turn to these cases and see what is there for our guidance. The first case, leaking very moderately, remained unoperated and died in sixty-eight hours, several convulsions preceding death. Two other cases, which ruptured during childbirth, underwent an excision of the sac: one had leaked for twenty-four hours before operation, was closed by catgut sutures, it had two convulsions and died thirty-one hours afterwards; the other was ligatured five hours after birth and recovered, it had been prevented from leaking prior to operation.

The testimony so far is certainly in favor of early operation. How is it with Case IV? This was a feeble premature infant, eleven days old, with an ulcerated spina bifida ruptured two hours before operation. It was sutured, not excised, because of the feebleness of the infant. The baby died eight days afterward. I believe that the successful closing of the rent prolonged life and proved itself justifiable in spite of the very feeble condition of the patient. The evidence from these cases is, therefore, strongly in favor of operation; nevertheless, I have heard of a case which recovered without operation, but this must be extremely rare. The question when we should operate is also plainly answered. Operate as early as possible in order to secure the meningeal cavity from infection and leakage.

The choice of the method of operating necessarily depends upon the size and shape of the tumor as well as upon the variety of spina bifida we are dealing with in any given case. Since the report of the London Clinical Society in 1885 it has been customary to speak of three varieties of spina bifida: (1) meningocele, with nothing but fluid in the sac; (2) meningo-myelocele, with nerves and sometimes the cord in the sac and usually attached to it; and (3) syringo-myelocele, or syringo-myelia, when the central canal of the cord is dilated and the sac-wall consists of the attenuated cord itself.

In meningoceles the operation of excision can be performed with comparative safety, especially if the opening into the spinal canal be small enough to close by a ligature and the skin be sutured over it.

In meningo-myelocoles the sac should be opened and the nerves separated from it and replaced before closing off the spinal canal; the neck of the sac should either be sutured or ligatured and the skin closed over the stump. Should it be impossible to separate from the sac-wall the nerves and cord, the collapsed sac should be tightly sutured and covered with skin by a quick plastic operation.

Simple suture of the sac may be done as in Case IV for syringo-myeloceles.

In operating upon the new-born and all small babies, the following precautions should be observed: light anesthesia, artificial warmth to the child's body, and as much celerity in operating as is consistent with a clean aseptic operation.

The prognosis in cases which rupture is bad; death is the rule, usually in three or four days. Still a few cases survive. Would there not be more recoveries if, as in Dr. Cleaves's case, a dressing could be applied at once in such a way as to stop the leak of cerebro-spinal fluid and keep the wound surgically clean? Later the spinal canal should be permanently shut off by an operation and protected from further infection by a skin covering. Upon the accoucher frequently rests the chief responsibility. There is no time to send for a consultant. He must act promptly at a time when the mother demands his best care; his object is to stop the leaking of cerebro-spinal fluid and prevent septic infection. He will therefore bear in mind that it is not sufficient to place a sterile dressing on the sac; he should do it in a way to stop the leak, and if the dressing fails to do this, a temporary ligature should be applied and a sterile dressing over it, for surgical experience has shown that a dressing soaked with serum affords a ready road for infection. This, of course, is merely giving temporary aid to the injured until such preparations as are necessary for an aseptic excision can be made.

From the obstetrical standpoint it is also interesting to note that of three cases which ruptured during birth, two were born before medical aid could reach them; the unusually strong pains of a rapid second stage probably caused the sac to burst.

Individual Drinking-cups. — The Columbus (Indiana) Health Board has issued an order requiring the pupils of the public schools to provide themselves with individual drinking-cups.

MYOMECTOMY FOR FIBROIDS.[1]

BY W. H. BAKER, M.D.

CASE I was kindly referred to me by Dr. Hall, of Revere.

Miss A. P. H. Examination March 5, 1897. Single, age thirty-six years. First noticed, two or three months before my seeing her, some difficulty in getting about on her feet. The soreness came on so that walking became painful. Pain and soreness on right side in groin was complained of. Pain in back occasionally when lying down and after defecation. Feeling of weakness and aching in back all the time. General health good. Catamenia began at fourteen; as a rule, occurred each three and one-half weeks; time, five days; amount, nine to ten napkins. Dysmenorrhea complained of for three menstrual periods after getting cold; never before or since. Leucorrhea not noticed. Never very strong. Appetite good. Digestion fair. Constipated. Micturition for two months past frequent. Sleeps well.

Diagnosis, fibroids of the uterus. Depth of cavity three and one-half inches, and bent backward.

The patient was engaged to be married, and did not wish to give up the hope of bearing children. She urgently requested me to save the uterus and ovaries for her if possible.

March 15, 1897, celiotomy was done. Five separate subperitoneal fibroids of varying sizes, from an orange of medium size to a small bean, were enucleated. The operation was tedious on account of the depth in the uterine wall of some of the fibroids, and my desire to remove all that I could of these growths. Uterus and ovaries saved. Incisions where fibroids were removed were sewed up with silk, and the abdomen closed as usual. Recovery excellent.

CASE II. Miss M. L. H. Examination November 3, 1897. Single, age thirty-six years. Troubled for more than six years. Treated for "uterine inflammation," and tumor was then discovered. Her physician reports that the tumor has been growing of late, and patient desires to get rid of it. Catamenia at fifteen, practically always regular; time, five to six days; amount, twenty to twenty-four napkins, which has always been her usual amount. Slight dysmenorrhea when younger. Considerable leucorrhea.

Diagnosis, multiple fibroids of the uterus; two distinctly felt in left of uterus, each the size of a walnut.

The patient's mind was in such a disturbed state from the knowledge of, and worrying over the existence of their growth, and from the fact that her family usually ceased menstruating very late in life, fifty years and over, it seemed best for me to remove them, even though small, for they naturally would have some sixteen years yet to grow. This patient strenuously objected to the removal of the uterus or ovaries, nor could I see why such operation should be done, although it might be the speediest method of operating.

November 10, 1897, celiotomy was done. Seven fibroids varying from the size of a pea to that of a walnut were removed by enucleation. Sites of tumors closed with silk. Recovering well.

A DEPARTMENT OF HYDROPHOBIA is to be added to the Institute of Infectious Diseases in Berlin, of which Robert Koch is director.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES W. TOWNSEND, M.D., BOSTON.

THE INJURIES OF PARTURITION.[1]

W. J. SINCLAIR, President of the Section of Obstetrics and Gynecology of the British Medical Association, delivered the opening address on the above subject at Montreal. He contrasts three periods in obstetrics: first, from the introduction of the forceps to the discovery of anesthetics, about a century; secondly, from the discovery of anesthetics to the introduction of antiseptics, a quarter of a century; and, thirdly, from the general introduction of antiseptics in midwifery practice to the present time, very nearly a quarter of a century.

In the first period he shows how slow the physician was to resort to forceps, preferring to allow the woman to linger for days rather than use this instrument, — with resulting sloughing and vesico-vaginal fistulæ. He quotes from Smellie, from Clarke and from Robert Collins.

The second period is represented by Mathew Duncan; and meddlesome midwifery is less clearly and emphatically denounced. Laceration of the perineum due to the forceps became much more frequent than under the old practice of delay; and, as it was quite unusual to suture these lacerations, incontinence of urine owing to vaginal sloughing was replaced by incontinence of feces resulting from complete laceration of the perineum.

In the third period the writer finds our modern text-books are liable to mislead the young practitioner into practice actively harmful. In certain parts of England (in Manchester and the manufacturing towns of Lancashire), he asserts that the forceps are applied in 25 to 30 per cent. of the cases. He has been frequently told by practitioners in similar communities that half an hour only is allowed in the case of multiparæ for the second stage before applying the forceps. That this extraordinary state of affairs is due to the physicians and not the patients is shown by the fact that in the same locality the Manchester Maternity Hospital delivered 2,049 cases, with the use of forceps in 29 cases only, or 1.4 per cent.

The gynecological results of all this meddlesome midwifery, largely to save time, are very obvious.

The writer quotes German statistics, showing the rising protest there against the abuse of forceps. Thus, Wahl reports, in the Dresden Hospital, 9,061 cases of labor, with the use of forceps in 232, or 2.5 per cent. The final indication for resorting to forceps was always danger to the mother, to the child, or to both; and from three to four hours was the period allowed for the second stage of labor. The results were remarkably good.

THE PORRO OPERATION.

Dr. David Barrow[2] reports a case of this operation, with recovery of mother and child. The patient, nearly at full term, was found to have a large fibroid tumor filling the pelvic cavity, which it was impossible to displace upwards even by the use of firm pressure. Delivery was believed to be impossible except by surgical means. At eight and a half months the abdomen and uterus were opened. The child occupied the upper two-thirds of the tumor, and the lower one-third was a mass of fibroids. A living child, weighing six pounds, was delivered. The peritoneum on the lower anterior and posterior surfaces of the tumor was deflected, the vagina opened, and the whole mass removed.

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[1] Read before the Boston Society for Medical Improvement November 1, 1897.

[1] British Medical and Surgical Journal, September 4, 1897, p. 589.

[2] American Journal of Obstetrics, November, 1897, p. 677.

DANGER OF GLYCERIN INTRA-UTERINE INJECTIONS FOR THE INDUCTION OF LABOR.

Stanton[3] reports a case where the intra-uterine injection of two ounces of glycerin to induce labor caused most alarming symptoms of shock. The pulse went down to 40 or 50, was extremely feeble, and remained so for three hours, and the patient complained of severe pain in the head. He considers the method dangerous and has discontinued its use, although he had formerly recommended it.

HABITUAL ABORTION.

Charpentier[4] considers four classes of patients are especially liable to repeated abortions. In the first class malformations of the uterus prevent its normal enlargement during pregnancy, and abortion is apt to occur as early as the second or third month. A second class abort on account of the abnormally displaced uterus. A third class show great congestion about the neck and body of the womb during pregnancy; they are apt to bleed easily and sometimes suffer from hemorrhoids. The fourth class are those in whom a tumor of the neck or body of the uterus is present. The treatment should be directed to removing the existing conditions which cause the abortion.

SPURIOUS ABORTION.

T. W. Eden[5] defines this as a "development within the uterus, in the absence of uterine or extra-uterine gestation, of a membrane having the essential characters of the decidua of pregnancy and accompanied by the signs of early pregnancy, and its separation and expulsion from the uterus with hemorrhage, thus simulating an abortion."

The diagnosis depends on, first, the exclusion of uterine pregnancy by careful microscopic examination of the cast, which demonstrates the absence of chorionic tissues, and, secondly, the exclusion of extra-uterine pregnancy.

The writer considers two possible explanations of this mimicry of early pregnancy terminating in abortion: (1) That an ovum was actually fertilized, but perished at a very early period without leaving traces of its presence, while the "genetic reaction" in the uterus and in the general organism progressed as in developing pregnancy. (2) That some stimulus other than the presence of a fertilized ovum in the genital tract may lead to the formation within the uterus of a complete decidua, and may hold the menstrual functions in abeyance. The latter view he hesitates to accept at present, but it is a fact that the discharge of a decidual cast must no longer be regarded as a pathognomonic sign of extra-uterine pregnancy. The writer reports at length three cases of this affection.

THE DIAGNOSIS OF EARLY PREGNANCY.

T. W. Eden[6] tabulates the physical signs of early pregnancy in the order of their occurrence as follows:

End of Second Month (Eight Weeks).

Breast signs (important only in first pregnancy).
Softening of cervix.
Distention of fundus.
Hegar's sign.

End of Third Month (Twelve Weeks).

Breast signs (important only in first pregnancy).
Bluing of vaginal walls and cervix.
Softening of vaginal walls and cervix.
Uterus size of large orange.
Hegar's sign.
Uterine contractions.

End of Fourth Month (Sixteen Weeks).

Breast signs (important only in first pregnancy).
A suprapubic swelling.
Uterus size of fetal head.
Uterine contractions.
Ballottement.
Vaginal and cervical bluing and softening.

PERIPHERAL NEURITIS CONNECTED WITH PREGNANCY AND THE PUERPERAL STATE.

E. S. Reynolds[7] reports two cases of peripheral neuritis coming on during pregnancy and the puerperium, and similar to that found after taking alcoholic and other poisons.

He has collected 47 other cases from medical literature, and draws the following conclusions:

Etiology. — It is more common in multiparæ. Twelve of the 49 cases began during pregnancy. Of the cases beginning after delivery, in 16 symptoms appeared within the first week; in seven during the second week; in six during the third and fourth weeks; in two within the second month. In 15 cases there was a history of sepsis. In 11 there was marked and incessant vomiting of pregnancy. In four cases there was a distinct alcoholic history; and the writer questions whether more of the cases were not due to alcohol.

Symptomatology. — The case generally begins with sensory disturbances, numbness, tingling, hyperasthesia, paresthesia, or severe pains, often shooting in character. This is soon followed or even accompanied by motor paralysis. In 23 cases both arms and legs were affected; in 15 cases symptoms were confined to the arms, in 10 of these being limited to one side. In 10 cases the muscles of the legs only were affected.

Prognosis. — In 14 cases there was either no recovery (death occurring fairly rapidly in a few cases) or only a partial recovery, some of the most severely affected muscles remaining permanently paralyzed. In 22 cases recovery was complete, and in 13 cases the termination is not recorded. In some, years may elapse before an absolute recovery takes place, so that treatment by massage, etc., must on no account be relaxed, but kept up for long periods.

Pathological Anatomy. — In several cases the nerves have been examined after death, and well-marked evidence of neuritis has been found.

ECLAMPSIA.

Dr. Adam H. Wright[8] in describing the methods used in the Burnside Lying-in Hospital in Toronto, says, in regard to eclampsia, that he has found that morphine administered hypodermically subdues most quickly the excitability of the nerve centres. Chloral, he believes, is the best remedy to prevent recurrence of convulsions after they are to some extent brought under control. It is also sometimes useful as a preventive remedy when the symptoms of toxemia are severe and convulsive seizures are feared, but have not yet appeared. He sometimes combines the two remedies for severe convulsions, giving morphine hypodermically and the chloral by enema.

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[3] Loc. cit., July, 1897.

[4] Gazette Hebdomadaire, No. 34, 1897.

[5] British Medical Journal, November 20, 1897, p. 1488.

[6] American Journal of the Medical Sciences, December, 1897, p. 687.

[7] British Medical Journal, October 16, 1897, p. 1080.

[8] Loc. cit., October 23, 1897, p. 1159.

Chloroform sometimes has a good effect on the convulsions, but its administration has frequently disappointed him. Bleeding in properly selected cases he believes is of value. Veratrum viride he has used but little, and has not been favorably impressed by it. Pilocarpin he mentions, to give it his unqualified condemnation, considering it both uncertain and dangerous.

Wm. Warren Potter, M.D., in a paper before the American Association of Obstetricians and Gynecologists, laid down the following principles of the etiology and treatment of eclampsia. Particularly does he emphasize the fact that he takes issue with Charpentier on the subject of premature labor.

"(1) Though the pathogenesis of eclampsia is unsettled, it belongs solely to the pregnant or puerperal state. It is not apoplectic, epileptic or hysterical in character.

"(2) It depends upon toxemia due to overproduction of toxins and underproduction by the emunctories.

"(3) These toxins probably have their origin in the ingesta, in intestinal putrefaction, in fetal metabolism — one or all — and there is coexisting sluggishness, impairment or suspension of elimination.

"(4) When the prodromes of eclampsia appear the kidney should be interrogated as to its functions and all symptoms carefully watched.

"(5) Treatment is (*a*) preventive, and (*b*) curative. Preventive treatment is medicinal and hygienic; curative treatment is medicinal and obstetric.

"(6) Milk diet and distilled water should be given in the pre-eclamptic state to dilute the poison, hasten its elimination and nourish the patient.

"(7) Blood-letting should only be employed in plethora or cyanosis. It is liable to cause anemia if persisted in or repeated, whereas red blood-corpuscles must be conserved, not wasted. Glonoin diminishes vaso-motor spasm, hence may be given freely in appropriate cases. Veratrum viride is a cardiac depressant and a dangerous remedy if pushed to an extent that will control convulsions.

"(8) Eclampsia is the expression of a further maternal intolerance of the fetus; hence, as a primal measure, the uterus should be speedily emptied of its contents.

"(9) Medicinal treatment alone is delusive, and when relied upon exclusively is fraught with danger both maternal and fetal, whereas in the prompt induction of labor is found a rational application of science to a desperate condition.

"(10) Finally, it furnishes, in the present state of our knowledge, the only basis of expectation for a diminished mortality in a toxemic disease of high deathrate."

A CASE OF INTRA- AND EXTRA-UTERINE PREGNANCY AT TERM.

Dr. Hubert A. Royster[9] reports an interesting case in a colored woman, thirty-four years old, who was delivered at full term of a living child. The midwife reported that she "felt another child, but it would not come." On examination a living full-term fetus was felt in the abdominal cavity outside the uterus. Operation was at once advised, but was refused until the end of four weeks, when the fetus was dead and the mother was evidently on the road to death from sepsis. A dead, fully developed female fetus, weighing four and a half pounds, was removed by laparotomy. The placenta weighed two pounds, was adherent to the anterior abdominal wall, and to the left side of the pelvic brim. The patient made a good recovery.

A history of rupture allowing the escape of the fetus into the abdominal cavity was obtained from the patient. While squatting on the ground to urinate at about the end of the second month, she was seized with a sudden sharp pain in the right side which caused her to call for help. She fell in a half-fainting way, was carried into the house, put to bed, and in a few hours recovered. There was no external loss of blood.

TOXEMIA OF PREGNANCY.

Dr. Adam H. Wright[10] enumerates as follows the main points in his treatment of toxemia of pregnancy;

(1) A carefully selected mixed diet, with plenty of water — plain, mineral, lemonade without sugar, etc.

(2) Rest, good hygienic surroundings, proper clothing.

(3) The regular and persistent use of purgatives for weeks or months, with a preference for epsom salts.

(4) A warm daily bath.

(5) The induction of abortion or premature labor in rare cases.

PLACENTA PREVIA.

Dr. W. H. Wenning[11] sums up the treatment of placenta previa as follows:

The tampon is indicated: (1) in hemorrhage toward end of pregnancy; (2) in the beginning of labor when the os is closed; (3) in moderate dilatation of the cervix — then use cervical tampon. Contraindicated: (1) when dilatation is complete or nearly complete; (2) when it fails to arrest hemorrhage, even when dilatation is not far advanced.

Rupture of the membranes is indicated: (1) when the os is well dilated, and either spontaneous labor or artificial delivery may occur; (2) when by this method hemorrhage is better controlled than by other means; (3) when in the absence of labor pains it will be followed by immediate pressure of the presenting part. Contra-indicated: (1) when os is undilated and pains good; (2) in faulty presentation of the fetus, unless it can be followed immediately by version.

Version is indicated: (1) when the os will admit two fingers and combined version can readily be done — Braxton Hicks's method; (2) when the os is well dilated or dilatable and hemorrhage is profuse — direct or internal version; (3) in desperate cases — *accouchement forcé*. Contra-indicated: (1) when with a moderately dilated os, combined version cannot be skilfully done (the cervical tampon); (2) when with a well-dilated os, after rupture of the membranes, the head immediately engages in the cervix.

In all cases strict supervision from the onset of labor to the end of delivery.

CONTRACTED PELVIS.

Dr. George W. Dobbin,[12] resident obstetrician at the Johns Hopkins Hospital, urges the routine practice of pelvimetry, as it will give us "(*a*) an accurate knowledge as to the occurrence and frequency of the various forms of pelvic deformity; (*b*) a better understanding of our cases from beginning to end; and (*c*) enable us to offer a rational and sound explanation for many of the obstetrical operations we are called upon to perform."

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[9] American Journal of Obstetrics, December, 1897, p. 280.

[10] Loc. cit., October, 1897, p. 456.

[11] Loc. cit., October, 1897, p. 513.

[12] Loc. cit., August, 1897, p. 145.

Of 350 cases at the Johns Hopkins Hospital measured by him and by Mr. J. W. Williams, there were 40 cases of contracted pelvis. Fourteen, or 4 per cent., were found generally contracted; 9, or 2.6 per cent., simple flat; 14, or 4 per cent., flat-rachitic; and 3, or .85 per cent., irregular. Of these, 7.74 per cent. occurred among Americans, 18.32 per cent. among negros, and 5.55 per cent. among the foreign born. Of these 40 cases, in 19 there was spontaneous delivery, while 21 required operative interference. Careful statistical tables of these cases are given.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, November 15, 1897, the President, DR. A. L. MASON, in the chair.

DR. W. H. BAKER spoke on the subject of

MYOMECTOMY FOR FIBROIDS.[1]

DRS. A. L. MASON and H. L. BURRELL offered some remarks on

HYDATID CYST OF THE LIVER.

DR. J. L. MORSE presented

A STUDY OF THIRTY-SEVEN FATAL CASES OF CIRRHOSIS OF THE LIVER.

DR. A. THORNDIKE read a paper on

SPINA BIFIDA RUPTURED DURING BIRTH, REPORT OF FOUR CASES.[2]

DR. MUMFORD: If it is in order, I should like to ask Dr. Thorndike what would be his time of election for operating in case of non-ruptured spina bifida?

DR. A. THORNDIKE: I think that depends entirely on the condition of the sac. If one can afford to wait until the child grows to be six months or a year old without too much danger of rupture, it is best to do so, but oftentimes there is such an extremely thin membranous sac that the danger of rupture is imminent and it seems wiser in those cases to perform an operation early. If the sac be entirely covered with skin and not increasing perceptibly, many surgeons prefer to wait till the child is several years old (five to ten) in order to give nature a chance to produce a spontaneous cicatrization and contraction of the tumor, which certainly does happen in a small proportion of untreated cases.

DR. J. P. CLARK read a paper on

COMPLETE CONGENITAL OCCLUSION OF THE POSTERIOR NARES, WITH THE REPORT OF A CASE.[3]

DR. CLARK: I thought the Society would be interested in seeing the patient whose case I am going to report this evening — complete congenital occlusion of the posterior nares, which is a very rare condition. You see the patient is rather undersized. She has the facies which is generally associated with the presence of adenoids; and which is a result of constant obstruction of the nasal respiration. The character of the voice has not been altered by the operation. It may improve, but it has not improved yet. This may be due to the fact that the naso-pharynx is still very small and the arch of the palate is very high. The examination of the naso-pharynx with the rhinoscope here without a good light would be difficult and probably unsatisfactory. There is some obstruction in the left nostril due to deviation of the septum, which may need correction, but for the present I shall let it alone. As you see she can breathe perfectly well with the mouth closed. (The patient pronounced the words January, February, etc.) You see the voice has rather a nasal quality still. It has not improved any as yet. She is going to a dentist, who thinks he can do something to widen the alveolar arch, and possibly in that way improve the voice. She hears perfectly well.

DR. LANGMAID: I think that these cases may be more common than we have any knowledge of. I have seen four. I cannot say they are exactly like the cases spoken of in the paper, because they were not cases of bony occlusion — at least, they could not be made out to be. I operated on two cases. I think Dr. Coolidge assisted at one where there was complete congenital occlusion, and he was kind enough some years afterwards to find the child and ascertain whether the nares were still patent; and they were found to be so. The oldest case I have seen was one at the Massachusetts General Hospital. I cannot remember the exact age, but perhaps fourteen years. The youngest was a nursing baby. That child was to come for operation, but I have never seen it since. One of the cases I was able to follow for many months and the nares remained, as I said, open; the other case was lost sight of. The case I operated on at the Children's Hospital — the first one I referred to — was not for bony occlusion, although I remember when the trocar was put in that there was a creaking sound. It was not soft tissue; it felt like cartilage, or as cartilage would feel if one put a trocar through it. With the exception of the nursing baby, the three cases, I think, showed a lack of development of the nose. Dr. Coolidge will remember that the nose was undersized, and that the nares after the operation were smaller than they should be, but perhaps quite as large as was possible with that size of nose. The young man of fourteen had also an undeveloped nose. These are congenital. The two cases I operated on were not bony — whether the other cases were I do not know; but they were congenital occlusion of both nares.

I have always been interested in the etiology of these cases. It is possible, of course, to think that there may be hypertrophic extension of the bone without any other morbid process, without ulcerative process; but as it happens the cases I have seen have had undeveloped noses, and I have wondered whether there had not been an ulcerative process there which had occluded the nose, and that the lack of function of the nose had prevented its growth.

With regard to the cases being so necessarily fatal, I do not know about that. Of course, it would be difficult for a child to nurse, and it would interfere with the physiology of respiration, as Dr. Clark has said; but it seems to me stating it rather strongly, that the child could not live. I don't think there is any doubt that the nares should be opened just as soon as possible, and it is interesting to know from the few cases I have seen and read of that there has been very little difficulty in keeping the nares open afterwards. I should object strongly to using the galvano-cautery. We know the great tendency to the adhesion of the walls after the actual cautery has been used; and I think Dr. Clark's procedure was much better, because a channel is cut out, a core removed, and the wound heals, in my experience, much faster than after that made by the galvano-cautery.

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[1] See page 180 of the Journal.
[2] See page 178 of the Journal.
[3] See page 171 of the Journal.

Dr. Coolidge: I expect to say something about this case in a paper which I hope to read before this Society later in the year. The thing that was especially interesting to me is the fact that the septum had a marked deviation, as a great many have, and that the turbinate bone of the concave side was enlarged to fill that concavity of the septum. That is something we see in a very large number of noses. The etiology of this enlargement of the turbinate has been described as due to currents of air which passing through the unobstructed side by inflammatory processes or diminished tension make the turbinate enlarge. Here was a case in which the septum was deviated and the turbinate enlarged in the way we expect to find it, but in which there had been no currents of air.

Dr. Langmaid: I should like to ask if the external nose was well shaped?

Dr. Clark: Yes. There is a slight prominence near the junction of the nasal bones with the cartilages, due probably to the injury she received when a child.

Dr. Langmaid: Of course my cases were not those of bony occlusion, but cases of occlusion of the nose, and were related as such.

Dr. Clark: In regard to defects of hearing in these cases, Schroeder mentions the drum being retracted and the hearing impaired. In the other cases where the hearing is mentioned it is said to be unaffected. In a number of cases the hearing was not mentioned, and I took it for granted it was not affected in those cases.

It would have been impossible, I think, to have punctured these occluding walls with anything but a trephine or chisel. It would not have been possible to force the trocar through. As regards the cases in literature, the larger number of them are bony occlusions. Membranous occlusions are much less common.

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MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Ninety-Second Annual Meeting, Albany, January 25–27, 1898.

(Concluded from No. 7, p. 160.)

THE PAST, PRESENT AND PROSPECTIVE METHODS OF TREATMENT OF INSANITY IN THE STATE OF NEW YORK.

A paper with the above title was read by Dr. P. M. Wise, of Albany, in which, after briefly reviewing the treatment of the insane employed in the past, he criticised the medical schools for giving so little instruction on the subject, and referred to the lack of interest shown by physicians throughout the State in the hospitals maintained by it. He referred to the large number of patients which had been discharged cured from the State hospitals during the past year, and said that this was due to the rational methods of treatment now employed — the removal of active causes, that is, toxins, irritation of the nervous mechanism from all causes, the improvement of the general health, and the development of all bodily structures to a normal condition of resistance.

Dr. Landon Carter Gray, of New York, agreed with the author that many improvements had been made during recent years in the State insane hospitals, but said there was some inherent defect in the system, for, in spite of the fact that the State spent many millions each year on its asylums, no new discovery in the pathology of therapeusis of insanity had been made by any one connected with them. He attributed this to the fact that these hospitals are situated in isolated places, away from medical centres, and that the members of their staffs do not come in contact with the neurologists. He also thought that the immense amount of clinical material which these hospitals contain should be made use of in all medical schools where instruction in mental disease is given.

Dr. Wise agreed with the last speaker in regard to this clinical material being made use of, and said that the Lunacy Commission was making efforts to bring about this end.

AFTERNOON SESSION.

Dr. J. E. Walker, of Hornellsville, then read a paper on

ACTINOMYCOSIS.

Several cases were narrated in which good results had followed the administration of iodide of potassium in large doses. The importance of early diagnosis was emphasized, and extirpation of the diseased tissue advocated wherever this was possible.

Dr. A. M. Phelps, of New York, referred to cases of Pott's disease due to actinomycosis.

Dr. Herman Mynter, of Buffalo, read a paper entitled

A YEAR'S WORK IN APPENDICITIS.

Three classifications of the disease were made, namely, (1) simple catarrhal appendicitis; (2) ulcerative appendicitis, with or without perforation; and (3) septic appendicitis, with or without abscess. The fact was brought out that more deaths occur from appendicitis than from any other abdominal disease. The prognosis is unfavorable when the case is treated medically, the death-rate being between 16 and 20 per cent., and of those who recover 50 per cent. have relapses. The mortality in cases treated surgically depends absolutely upon whether or not operation is done early. Operation before the third day was advocated.

Dr. William B. Jones, of Rochester, followed with a paper entitled

LESSONS FROM SIX CASES OF APPENDICITIS.

Operation was advised in all cases where no improvement has taken place at the end of the first twenty-four hours.

Dr. Willy Meyer, of New York, was opposed to immediate operation, but thought that every case of appendicitis should be watched by both physician and surgeon. The pulse-rate is a better guide to the condition than is the temperature. If the former increases while the temperature remains at 99° or 100° F., this is an indication for operation.

Dr. A. M. Phelps, of New York, then read a paper on

CONGENITAL DISLOCATION OF THE SHOULDER BACKWARDS, WITH A REPORT OF SEVEN CASES AND AN OPERATION FOR ITS RELIEF.

The author's first case of this kind was brought to him in 1895, at which time only six similar cases were on record. The dislocation in such cases is not always recognized, and the condition is attributed to paralysis dating from birth. The author considers the dislocation due to direct violence on the part of the accoucheur, as he discovered evidences of fracture of the glenoid cavity in the cases upon which he has operated. The operation is as follows: An incision is made along the posterior border of the deltoid, the capsule of the joint is incised, the new articulation beneath the scapula cut away, the dislocation reduced, a drainage-tube is inserted and the wound closed. In long-standing cases it is generally necessary to remove part of the head of the bone in order to make allowance for the shortening of the muscles. The arm should be put up in a rotated position with the hand well out and also rotated.

Dr. Reginald H. Sayre, of New York, followed with a paper on

THE TREATMENT OF RACHITIC DEFORMITIES.

The author recommended that the child should be taken off its feet and the limbs put up in plaster-of-Paris during the stage in which the bones are soft. Marked deformity after the bones have become hard should be corrected by breaking the bone and putting the limb in plaster. Proper diet, hygienic conditions, and constitutional treatment were also advised.

DISCUSSION ON THE MANAGEMENT OF HYPERTROPHY OF THE PROSTATE GLAND AND ITS COMPLICATIONS.

This was opened by Dr. L. Bolton Bangs, of New York, with a paper entitled

GENERAL CONSIDERATIONS AND CATHETER-LIFE.

The following causes of hypertrophy of the prostate were given: (1) masturbation in childhood, (2) early association with lewd women, (3) adultery and fornication, (4) venereal excesses, (5) methods employed to prevent impregnation of the female. The importance of sterile catheterism was especially emphasized.

Dr. S. Alexander, of New York, read a paper on

PROSTATECTOMY AND PROSTATOTOMY, SUPRAPUBIC AND PERINEAL,

in which he gave the results obtained in 205 cases by operation. Of these 21 per cent. died and 62 per cent. recovered with power of voluntary urination, the remainder not regaining this function entirely. The author prefers the suprapubic operation except where drainage is required. The condition of the kidneys is an important factor in determining the result.

Dr. Willy Meyer, of New York, continued the discussion with a paper entitled

BOTTINI'S GALVANO-CAUSTIC RADICAL TREATMENT, AND THE PALLIATIVE TREATMENT FOR HYPERTROPHY OF THE PROSTATE.

The author advocated this treatment before operation was resorted to and exhibited the instrument. It consists of a metal sound in which is a hidden blade of platinum which is made to emerge by means of a screw at the lower end of the instrument. The bladder is first emptied and the urethra cocainized; the instrument is inserted, the current having previously been turned on, and two or three grooves are made by the knife in the enlarged prostate.

Dr. L. S. Pilcher, of Brooklyn, then read a paper on

CASTRATION FOR THE RELIEF OF HYPERTROPHIED PROSTATE,

in which he recommended this procedure in preference to prostateetomy or prostatotomy, as requiring much less skill and giving excellent results.

Dr. E. L. Keyes, of New York, closed the discussion with a paper entitled

STONE ASSOCIATED WITH HYPERTROPHY OF THE PROSTATE,

in which he advocated suprapubic lithotomy and partial prostatectomy in this condition.

Dr. Samuel Lloyd, of New York, exhibited a patient upon whom he had performed

EXCISION OF THE FIBULA FOR SARCOMA.

The patient, a young woman, twenty-two years of age, is now in good health and walks without difficulty. There was a history of injury occurring eight years previous to operation. Injections of the toxins of erysipelas and prodigiosus had been employed, but they had no effect upon the disease.

EVENING SESSION.

THE OBLIGATION OF THE PHYSICIAN AND THE LAYMAN TO EACH OTHER

was the subject chosen by the President for his Anniversary Address.

He said, in part: There is a general tendency affecting all grades of people toward that which will create a sensation, and the advancement of science having disturbed very materially our old creeds, we have been disposed to accept those which seem newer and which possess a larger amount of the marvellous. . . . The old-time doctor is passing away, and, in his place, we have the up-to-date medical man who, having imbibed his share of the spirit of the times, is losing in many respects more than he gains.

There is an unidentified something in the make-up of the medical man which you do not find in any other class of citizen. I speak of that jealousy which exists as between himself and his brother practitioner and which makes him give free medical attendance to a patient who is not able to pay the fee demanded by him but who is able to pay a smaller fee to his less successful brother. I doubt very much if any legal act could be devised to meet the emergencies presenting themselves to us in this question; but if the medical profession would, as a body, respect the rights and privileges of each and every individual member of their august body, and would see to it that no act of theirs should tend to jeopardize the interest of another, *then* would come the solution of this entire difficulty without the intervention of the law.

I am not a believer in reducing the practice of medicine to the status of a trade; I do not believe that the profession should organize itself into a trades-union for the furtherance of the interests of its members professionally, politically and financially; but I do believe that there should be that honesty and respect of others' rights which should make men know the justice or injustice which has been dispensed to their predecessors before serving in the capacity of successors. My special point is that if we do not sustain honorable members in their expectation of just and courteous treatment, we injure and degrade the profession itself.

It belongs to this Society to take the initiative in the correction of abuses where discovered and in the introduction of real improvements.

With the hope that I have convinced you of the honesty of our purpose and that we are working for the good of the community and of the State at large, let me beg of you to go out from this hall determined to use all the influence at your command for the furtherance of honest medical charity and the destruction of quackery in all its phases.

THIRD DAY. — MORNING SESSION.

The Nominating Committee recommended that the following officers be elected for the coming year: President, Dr. John O. Roe, of Rochester; Vice-President, Dr. E. F. Brush, of Mt. Vernon; Secretary, Dr. Frederic C. Curtis, of Albany; Treasurer, Dr. C. H. Porter, of Albany.

Dr. T. D. CROTHERS, of Hartford, Conn., read a paper on

THE TREATMENT OF DELIRIUM TREMENS.

The condition was described as being due to alcoholic injury to the brain centres, to the action of bacteria, and to auto-intoxication in various constitutional diseases. The induction of sleep is the principal indication in treatment. It was recommended that no powerful opiates or hypnotics, chloral especially, be employed. No alcohol should be given. Cardiac stimulants are dangerous and should not be employed. As elimination is of first importance, the hot bath is *the* essential and free diaphoresis should be encouraged for two or three days. The administration of calomel, followed by salines, has a beneficial effect. The strait-jacket and confining bands are not to be employed. If restraint is necessary, it should be mild and alternated with liberty, the patient being permitted to walk about in order that he may work off the muscular excitement. Little or no food is needed until the period of excitement has passed off. The author referred to the many deaths which occur in station-houses, in persons found in the street in alcoholic coma, and expressed the belief that the fatal result is due to the opium which is given them.

DR. H. S. DRAYTON, of New York, then read a paper entitled

INTRA-TRACHAEL INJECTIONS FOR DISEASES OF THE BRONCHIAL-TUBES AND LUNGS.

When first introduced by Dr. Horace Green, of New York, in 1840, this method of treatment was denounced as cruel and much adverse criticism was directed against it. It has been shown, however, that the pulmonary mucous membrane can and does absorb fluids without interfering with respiration and without causing irritation. The technique is not difficult, a steady hand, a knowledge of the laryngeal region, good illumination and practice, being all that is necessary, for the manipulation of the instruments requires no special skill. The syringe devised by Dr. Joseph Muir, of New York, is employed. It consists of a glass barrel, holding half an ounce, to which is attached a curved metal tube. A spray of cocaine may be used if there is any irritability of the throat. The tube is best introduced with the aid of the mirror, owing to the tortuous course of the canal. Three injections of one drachm each are given at each sitting; olive-oil, glycerin, menthol, eucalyptol, and other remedies may be employed in this manner.

The newly-elected President, DR. ROE, was then introduced, and, upon taking the chair, said: Ever since I was first sent as a delegate to a meeting of this Society, nearly twenty years ago, it has been my privilege to attend its annual meetings, and I trust that I may be able to return to its general stock of medical knowledge the profit which I have acquired in so doing. I will endeavor to show my appreciation of the preferment shown me by my zeal in the future, and, with your assistance, I shall try to make the next meeting as successful as have been those in the past. I thank you cordially for the honor conferred upon me and wish you all a year of health, happiness, and prosperity.

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Recent Literature.

Spinal Caries. By NOBLE SMITH. London: Smith, Elder & Co.

This little treatise has much to recommend about it. It is compact, and says what is important for the practitioner to know.

The text indicates familiarity with the literature of the subject on the part of the writer, and experience in the treatment of cases of this affection.

The chief defect of the book lies in the illustrations. The writer in the preface claims for these the merit of original draughtmanship; and he writes that he hopes he has in all cases correctly represented the subjects which are before him, "whether these have been patients, or morbid preparations found in museums." In this he can hardly be said to have succeeded, if humanity in England resembles in its anatomy and pathology humanity elsewhere. Selection and value of the fine line give charm to etchings, as our colleague, Seymour Hayden, and his great master, Whistler, have taught us. Yet this form of art is not successful in the illustration of gross pathology, judging from Mr. Noble Smith's book, and "impressionism" is not trustworthy in medical pictures. We know that Mr. Smith is more successful as a surgeon; he is painstaking as an artist; but we would suggest that in the next edition of his work he rely on photographs for his illustrations.

The Menopause. By ANDREW F. CURRIER, A.B., M.D. Pp. 309. New York: D. Appleton & Co. 1897.

This little volume is written to the texts that the menopause is not ordinarily the source of any very great or important disturbances; that when symptoms of any importance occur they are pathological and demand careful diagnosis; and that the lesions which cause symptoms are mainly surgical, and should receive surgical treatment. The book extends over 309 pages, and the only adverse criticism that can be made is that had it been compressed into an article of from 30 to 40 pages, it would have been an admirable *résumé* of the subject.

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ANNUAL REPORT OF HARVARD COLLEGE, 1896–97.

This report contains the usual facts and figures, with some variations, in regard to the academic and the other departments of Harvard University, technically and officially known as Harvard College. The most interesting and unusual feature is to be found in the report of President Eliot, and consists in a suggestion that degrees might with advantage be conferred twice instead of once a year — after the mid-year examinations as well as at Commencement.

There are doubtless men who pride themselves upon their "undivided and undiluted allegiances" — whatever that may be — and others who seek to foment feelings and prejudices rather than reason and understanding, who will see in this suggestion of the President's another Machiavellian scheme for degrading the college over which he presides and exalting the schools over which he also presides, and who will brace themselves accordingly for the continued struggle against their mighty and sleepless "foe." Such men must be left to their sanguinary reflections. Let us turn our attention to the other kind of man who shows a disposition to dispense information and reason.

The President gives his reasons for suggesting this change, and they are for the most part found in the following paragraphs:

"The English and German universities count residence by the term or semester, and confer degrees several times during the year; and in this country the University of Chicago has set an example of conferring degrees four times a year. It has been the practice of Harvard from its foundation to confer degrees only once a year — a very natural practice so long as residence was counted only by the year, and a specified length of residence was the most important qualification for the degree. But now that the passing of examinations on a definite number of courses or half-courses of instruction has become the most important qualification for a degree, some reasons come into view for conferring degrees twice a year. The requirement for the degree of Bachelor of Arts being to pass the examinations in eighteen full courses of study, persons who have passed in sixteen courses within three years have before them but a scant half-year's work; yet they must wait a whole year to get the degree. Again, short-residence students who seek a degree from Harvard may easily find one year too short to accomplish their purpose and yet two years may be too long. They could attain their desire in a year and a half. When students in college suffer some prolonged illness, which makes it impossible for them to pursue their studies for three or four months, they generally have to spend an extra year in attaining their degree, although the real loss of time was less than half a year. When a young man has failed to obtain his degree in four years through some neglect of duty, or through misfortune, he is now obliged to wait for his degree until the end of a fifth year, although his deficiencies may amount to much less than a year's work. In all these cases there would be great advantage in a second date for conferring degrees, a date not far removed from the 10th of February.

"The feasibility of making good use of a half-year in the college, scientific school, or graduate school would depend upon the number of half-courses offered in the first half-year and on the distribution of these half-courses between elementary and required subjects and among the different divisions."

. . . .

"In considering the expediency of instituting a mid-year date for conferring degrees, it is necessary to inquire not only what facilities exist within the university for bringing the course for a degree to a close at the middle of the year, but also what use of the subsequent half-year the student graduated in February could make. The professional schools of the university now begin their courses of instruction in the autumn chiefly; but the spring half of the academic year could be utilized very well in the Divinity School and fairly well in the Medical School, on account of the multiplication of laboratory courses in the latter school. For a young man taking the degree of Bachelor of Arts and intending to be a teacher, the spring and summer which he did not need at Cambridge could be well used in Europe, or in professional observation and practice at home. The interval between the 1st of February and the 1st of October would be a convenient one for any young graduate who wished to improve himself by foreign travel before settling down to the study of a profession. Young men who were going into business might, after taking their Bachelor's degree in February, have better opportunities of getting employment in the spring than they ordinarily have in the summer. Graduates of the Scientific School looking forward to getting positions in machine shops, factories, railroads, or on engineering works in progress, might be better able to find places in the spring than in the summer. Occasionally, even degrees in Theology, Law or Medicine might be taken with advantage, under exceptional circumstances, at the mid-year Commencement. The degree of Master of Arts and the doctorates might often be taken advantageously at that time of the year."

It is to be noticed that the President, with an absolutely cold-blooded and impartial malignancy, seems quite as willing to aid in "degrading" the schools as the college. The proposition will undoubtedly excite discussion, the outcome of which may be awaited without "feeling," nay, even with calm.

The College proper, the Scientific, the Graduate, the Law, the Medical, the Dental Schools are all increasing in numbers from year to year, and in general are in a flourishing state. Benefactions, after several years of decrease, have begun again to increase.

In the Medical School there were 600 men in attendance during the past year, of whom 50.32 per cent. presented a degree in letters, science or medicine; after the year 1900 all entering students must present such degrees. There were 101 applicants for the degree of M.D., of whom 30 were rejected and 71 graduated; of these 71 graduating students 29 received the degree *cum laude.* Four new scholarships, with an annual income of $200, were established during the year, and the School now offers 19 scholarships.

The only important change made in the course of instruction was the addition of clinical microscopy to the list of electives in the fourth year. The work in experimental physiology required of first-year students has been increased sixfold. With the constant development in laboratory instruction and research the laboratories of the school are every year less and less sufficient for the increasing demands made upon them. The present building and grounds are too restricted for the immediate future. On the other hand, the clinical departments demand a hospital under control of the School and the University. The whole is a large subject, but must eventually be considered as one problem.

The year has been a prosperous one for the Dental School, which had 132 students, an increase of twenty-nine over any previous year and this notwithstanding additional requirements of entrance examinations and higher fees.

The Veterinary School is diminishing in the number of its students. There were only fifty-two in attendance, of whom six were special students, and this year there are still fewer; it is moreover not self-supporting. This state of things is due largely to increased competition under better endowment, but it necessitates consideration of some plan of re-organization by which this school may be incorporated in a department of higher instruction.

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GLYCERINATED VACCINE LYMPH.

In behalf of the Local Government Board of England Drs. Thorne and Copeman have recently made a tour of inspection of the vaccine establishments of Paris, Brussels, Berlin, Dresden, Cologne and Geneva. The special point of investigation was the method by which the lymph was prepared and stored.

In a report (1896) to the German Government made by Professors Koch, Pfeiffer, Frosch and others, the desirability of using calf lymph which had been treated with glycerine was presented, and in the previous Local Government Report Dr. Copeman had shown a series of photographs which proved very conclusively that vaccine treated with glycerine and stored for several weeks became practically sterile.

The bacteria which appeared in large numbers in the lymph untreated with glycerine, or during the first weeks after being so treated, had fewer and fewer organisms develop as time went on, until at the end of four weeks all agar-agar plate cultures were sterile.

In Paris alone of the cities visited was it found that there was then any use of the crude lymph. There it was customary on the outbreak of small-pox to take a calf directly to the place and vaccinate all the inhabitants by a direct calf-to-arm method. This practice was considered advantageous in many ways, by MM. Chambon and Ménard; one being, that by the rather novel method and also the sight of the source of the vaccine lymph, many persons consented who would otherwise have escaped vaccination. All the other cities used only the glycerinated lymph, as was also the case in Paris for all material stored for general distribution.

The advantages of the glycerinated lymph are briefly as follows:

It is much cheaper than the usual methods of storing upon a quill or ivory point, or even as crusts. One calf furnishes about 300 points, while the same animal, if the lymph was treated with glycerine, would furnish material for 4,000 to 6,000 vaccinations. The glycerinated lymph is said to last longer at ordinary conditions, give better results than the lymph stored in the old manner, and to be free from nearly all bacteria.

It is interesting to know, that at least one of the vaccine stations in this immediate vicinity is making use of this method, by which the risks of the introduction of other material than vaccine virus are reduced to a minimum. Considering that this method has been adopted on the continent of Europe for several years, the question arises, whether the State, even at the risk of the charge of paternalism should not make it its duty to keep the sources of supply up to the standard of the best.

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THE SPOONER BILL AND THE NEW YORK ACADEMY OF MEDICINE.

At a meeting of the New York Academy of Medicine held February 17th the Commitee on National Public Health, through its chairman, Dr. Richard H. Derby, reported resolutions to the effect that —

> *Whereas*, The happiness and physical well-being of a people and the business prosperity of a country depend on the wisdom, force and execution of the sanitary laws; and,
>
> *Whereas*, A diversity of opinion and a division of responsibility, without co-operation in sanitary measures, cause confusion in the effort and defeat in the practice of sanitary aims; and,
>
> *Whereas*, The medical profession of a country are the proper custodians of its health: therefore, be it
>
> *Resolved*, That the Fellows of the New York Academy of Medicine do earnestly recommend the establishment of a bureau of health, with the power to administer within constitutional limits the sanitary needs of the United States.
>
> *Resolved*, That copies of the foregoing be sent to the New York Chamber of Commerce and to the New York Board of Trade and Transportation.

The resolutions were unanimously adopted. Additional resolutions, reported by Dr. Derby, were also adopted, approving the bill introduced into the United States Senate by Mr. Spooner. which provided for the creation of a national Board of Health, in substantial accordance with the recommendations made by the Academy to Congress a year ago. The resolutions at the same time condemned the bill presented by Senator Caffery.

A committee was then appointed to go to Washington and urge the passage of the Spooner bill. Its members are Dr. E. G. Janeway, President of the Academy, Ex-Presidents A. Jacobi and J. D. Bryant, and Drs. T. Mitchell Prudden and Richard H. Derby.

MEDICAL NOTES.

A Medical Senator. — Dr. Samuel Pozzi, the eminent French gynecologist, has been elected Senator for Dordogne.

The Middleton-Goldsmith Lecture of the New York Pathological Society, on the subject of "The Establishment and Conservation of Purity in Public Water-Supplies, especially those of Great Cities," will be given in the hall of the Academy of Medicine on Friday evening, February 25th, at 8.30 o'clock, by Prof. William T. Sedgwick, of the Massachusetts Institute of Technology.

The Surgeons and the Alimentary Canal. — Close upon the announcement that Schlatter has removed successfully the entire stomach comes the report of the removal of about half the large intestine by Frederick Treves. We have not yet learned of the successful removal of the entire small intestine, but have no doubt that it will be performed in due time. Where both ends of a citadel have been taken it is certainly reasonable to suppose that the centre may be captured if the attack is vigorously kept up.

Kipling's Estimate of Physicians. — Rudyard Kipling, the poet novelist, in an after-dinner speech at a banquet given in London to Sir William Gowers not long since, paid a graceful tribute to the heroism of the medical fraternity. He had mixed with doctors, he said, the world over, and had seen them going to certain death with no hope of reward. He had seen them handling cholera and small-pox, and, when dying therefrom, telegraphing for a substitute. He had seen them, in America, manage a practice twenty miles in each direction, driving horses through eight feet of snow to attend an operation ten miles away, digging their horses out of the snow and then proceeding on their way. Mr. Kipling declared that it was one of the proudest things of his life to have been associated with "real fighting men of this class." — *Medical News.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the the week ending at noon, February 23, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 11, measles 26, typhoid fever 4.

One of the Oldest Medical Graduates. — Dr. Charles Amory, who died in Boston on February 10, 1898, was graduated from the Harvard Medical School in 1832. He was with one, or possibly two, exceptions, the oldest medical graduate of Harvard at the time of his death.

A Warning. — A beggar has been frequenting the offices of physicians in Cambridge, exhibiting a recommendation of the bearer, Mr. D. E. Simmons, written on a stolen blank of Dr. A. H. Tuttle and signed G. H. Tuttle, M.D. We are requested to warn the public against this person.

The New Medical Bill. — On February 18th a hearing was given by the Committee on Public Health of the Massachusetts Legislature, on the bill presented by the State Board of Registration in Medicine for the further restriction of medical practice in that State. Dr. E. B. Harvey, Secretary of the Board, presented the bill, and its passage was advocated by Dr. E. W. Cushing, Dr. John F. Sutherland, and Dr. F. W. Draper, of Boston, and Dr. A. P. Clarke, of Cambridge. The bill was printed in full and commented upon editorially in our issue of January 20th.

NEW YORK.

Annual Alumni Dinner. — The annual dinner of the alumni of the various departments of the University of the City of New York, held at the Savoy Hotel on the evening of February 18th, was the largest in the history of the institution. About seven hundred alumni participated and the banquet was presided over by Chancellor McCracken. In the list of toasts Dr. Edward D. Fisher responded for the Medical Department.

Expert Testimony. — The Committee on Expert Testimony, of the New York Academy of Medicine, appointed in June last, presented a report of progress, which was signed by Drs. M. Allen Starr, Stephen Smith, George L. Peabody, J. H. Gardner, Charles L. Dana, H. C. Coe, H. M. Biggs and E. G. Janeway. It declared that any measure looking toward a reform in the present methods of giving expert testimony should seek to accomplish three objects: To establish a standard of excellence, to secure the appointment of experts by the presiding justice of the court, so that the expert should have a judicial function and be free from bias, and to provide that fees should be fixed by the court.

Defective Vision among Children. — The Annual report of the State Board of Health was transmitted to the governor on February 15th. A portion of it is devoted to defective vision among children. "It has been deemed expedient by the Board," the report says, "to provide a method of testing the eyes of school children. Defective eyesight is largely on the increase in this country. This may be due in a large degree to the failure of parents to discover such defects when they may be easily corrected. The plan adopted provides for a test by the principals of schools, who shall report all defects to parents, and recommend consultation with a physician."

Antitoxin. — In treating of the matter of antitoxin the report declares: "It will be the aim to examine all antitoxin offered for sale to secure uniform potency in all preparations of this remedy. The chemical work of the Board should be conducted on a larger scale."

Regulation of Dispensaries. — On February 16th a hearing was given by the joint Legislative Committee on Justiciary at Albany to representatives of various medical and charitable bodies in regard to the proposed bill of the State Board of Charities for the regulation of dispensaries. The main points of the argument against the bill were presented by Mr. I. G. Cannon, President of the Good Samaritan Hospital, which has a large out-patient department. In the course of his remarks he said: "The bill is a grant of power to the State Board of Charities to shut up any number of dispensaries if they see fit to withhold from them a license. They are vested with an arbitrary and absolute discretion. The underlying motive that inspires this legislation is the desire of the medical profession to increase their incomes. It is a bill to reduce medical and surgical aid to the sick poor, the capacity of the people at large to receive medical treatment gratuitously or at moderate charges." On the other hand, those favoring the bill quoted the reports of the State Board of Charities stating that nearly fifty per cent. of the inhabitants of New York City are now receiving practically free medical treatment, and that in some instances the managers of dispensaries have boasted of the wealth of their patients. The following extract from a report by the Department of Hygiene of the Society for the Improvement of the Condition of the Poor was also adduced: "It becomes a practical question for this association to consider again what, if anything, can be done to remedy this evil to the interests of the poor themselves, who are either pauperized by the receipt of medical assistance for which they should pay if able, or are crowded away from the clinics and schools by those who are quite able to pay." The State Board of Charities has given notice that a committee will hold public meetings in New York at which all interested will be welcome to state their views.

Mt. Sinai Hospital. — The managers of the Mt. Sinai Hospital, finding their present quarters at Lexington Avenue and 66th Street too limited, have purchased a site for a new hospital on Fifth Avenue, facing Central Park, extending from 100th to 101st Streets and including twenty-five city lots in all.

Dr. J. G. Truax. — Dr. John G. Truax, one of the most prominent and successful practitioners in the Harlem district of the city, died at his home in 127th Street on February 16th, of chronic Bright's disease. He was born in Durhamville, Oneida County, N. Y., March 5, 1848, and received his academic education at the University of Michigan. He was graduated from the Rush Medical College, Chicago, in 1871, and began his professional career in New York in 1876. He was for a long time one of the attending physicians of Harlem Hospital and an examiner of the Bureau of Pensions. He was one of the founders of the New York State and County Medical Associations.

Dr. James Wilkinson. — Dr. James Wilkinson died at his home in Jersey City on February 18th. He was born in England in 1837, but came to this country in early youth. He was graduated from the College of Physicians and Surgeons, New York, in 1858, and soon afterward settled in South Bergen, then a suburb of Jersey City, where he built up one of the largest practices in the State. Three years ago he retired and was succeeded by his son, Dr. George Wilkinson, who, with one brother and several sisters, survive their father.

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Miscellany.

DEATHS FROM SUFFOCATION IN ENGLAND.

In the last issue of the Journal an extract in regard "to overlaying," from an English paper, was given, rather as a curious and extraordinary statement than as reliable statistics. Reference to the Registrar General's annual returns, which are doubtless measurably correct, proves this statement to be even more curious and extraordinary than we at first suspected.

	1893	1894	1895
Total deaths from suffocation, ...	2140	2081	2319
Of these there were suffocated in bed (representing deaths from overlaying), . .	1656	1650	1865
Of these there were under five years old . .	1622	1613	1826
Under one month	437	446	492

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SPURIOUS OR ADULTERATED LIQUORS.

In the cause of true temperance the Citizens' Law and Order League of Massachusetts has now brought a House Bill, No. 526, before the present legislation to prevent the sale of spurious or adulterated liquors. It is so drawn as to cause a vigorous inspection of the liquors offered for sale, and its promoters expect to be able thereby to exclude a large part of the commercial stock of liquors from sale by proving them to be either spurious or adulterated. That many commercial liquors are so seems to be well substantiated by the admission of members of the liquor trade themselves, as published in the United States Government report of the tariff hearing before the Committee of Ways and Means, December, 1896, and January, 1897.

This is not surprising considering a letter of Joseph S. Miller, United States Commissioner of Internal Revenue, dated Washington, October 12, 1895, in which he said: "The manufacture of spurious, imitation or compound liquors for sale under the name of whiskey, brandy, gin, rum, wine, spirits, cordials or wine-bitters, or any other name, is recognized, under internal revenue laws, as a legitimate business . . . the officer might be warranted in recognizing, as legitimate, bourbon whiskey, rye whiskey, or any of the other kinds of spirits named in the annual report of this office, which might be produced by a rectifier, say by mixing pure, neutral or cologne spirits with caramel, flavoring extracts, coloring-matter and other ingredients. It should be borne in mind that the internal revenue laws are framed for the collection of revenue."

This letter shows how much confidence can be placed in the absolute purity of such liquors as claim it because they bear the guarantee of the United States government revenue stamp as put up in bond, and also that some such inspection as is proposed in the new bill is much needed. The inspector appointed under the present statute seems to have made no report to the State since he was appointed in 1885.

HEALTH RESORTS AND WATER FOR THE ANEMIC.

Dr. **Hermann Weber** sums up an interesting paper[1] as follows:

(1) The majority of cases can be treated without either spas or special climates, although the latter can be rendered useful in most instances.

(2) Anemic patients are often in so great a state of weakness that no journey, either to spas or climatic resorts, ought to be attempted, but a preparatory treatment ought to precede the change.

(3) In many cases the attention to climate is more important than to mineral waters, because the medical agents contained in the latter can be supplied pharmaceutically. In all cases in the selection of spas special attention should be paid to the question of climate.

(4) Many anemic patients do equally well at the seaside and on mountains; but, as a rule, more torpid cases are better influenced by the seaside; more excitable, better by sheltered mountain resorts, in medium, not in the highest elevations. Cases with considerable dilatation of the heart ought not to be sent either to level seasides or to highly elevated places, but to mountain resorts below three thousand feet above sea-level.

(5) The influence of change is so great that anemics residing or having fallen ill at the seaside ought to be removed to the mountains, and *vice versa*.

(6) In the selection of mineral water the causes of the anemia and the complications must always be carefully considered. Chalybeate springs are certainly not always the proper means of treatment.

(7) Proper arrangement of diet and exact rules as to exercise are of the greatest importance, as well in the climatic as in the spa treatment of the anemic.

(8) The mental condition requires the most careful attention. A moderate degree of agreeable occupation and of enjoyment is usually essential; hence it is necessary to consider not merely the questions of good accommodation and food, but also the society likely to be met with at the place selected, the beauty of the surroundings, the music and everything which can occupy the mind in an agreeable way.

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Obituary.

EDWARD CONSTANT SEGUIN, M.D.

Dr. **Edward Constant Seguin**, the eminent neurologist, died at his residence in New York on February 19th, from carcinoma of the liver. He was born in Paris, France, in 1843, and was the only child of the late Dr. Edouard O. Seguin. The latter came to the United States with his family in 1850 and settled in Cleveland, O. He subsequently removed to New York, where he established a successful practice, and was especially well known as the founder of an admirable institution for the instruction of feeble-minded children, which, after his death, was carried on by his widow.

Dr. E. C. Seguin commenced his medical studies in 1861 at the College of Physicians and Surgeons, New York, from which he was graduated in 1864. In 1862 he was appointed a medical cadet in the United States Regular Army, and acted in that capacity for two terms of active service during the Civil War before his graduation. As a surgeon in the army he served from September, 1864, to June, 1865, at Little Rock, Ark. On his return to New York at the close of the war he was appointed house physician of the New York Hospital. Being obliged to relinquish this position on account of developing pulmonary trouble, he was, by courtesy of the Surgeon-General, assigned to military duty in New Mexico, where he served for a time as post-surgeon at Fort Craig and afterwards at Fort Selden. The winter of 1869–70 was spent by Dr. Seguin in Paris, where he studied under Brown-Séquard, Charcot, Ranvier and Cornil, with all of whom he became intimate.

When he returned to New York he was at once recognized as an authority on nervous and mental diseases, and in 1871 was appointed to a professorship in the College of Physicians and Surgeons, which he retained until 1885. In 1873 he founded the Clinic for Diseases of the Nervous System. During his professorship and subsequently, he contributed much to the literature of his specialty, and was regarded throughout the country as one of the foremost experts in neurological science and insanity.

A number of years ago he married a sister of Dr. Royal Amidon, who was for a considerable time associated with him in practice. While suffering from a sudden fit of insanity Mrs. Seguin killed her three children and herself, an event which sent a thrill of horror through the community and excited the profound sympathy of his professional brethren for the stricken husband.

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ROBERT A. WHEATON, M.D.

Dr. **Robert A. Wheaton**, of St. Paul, Minn., died in that city on February 13th of meningitis following otitis media, at the age of thirty-five. He was born at Northfield, Minn. He received his degree at the Harvard Medical School about ten years ago and served as House Physician at the Boston City Hospital. About six years ago he began practice in St. Paul in partnership with his brother, Dr. Charles A. Wheaton.

Dr. Wheaton was married in December, 1895, to Miss Jane Moore, who with a daughter about five months old survives him.

His death closes a career that gave every promise of becoming brilliant and successful. Though still a young man he ranked among the foremost surgeons in Minnesota. As a practitioner he had not only the confidence but the friendship of his patients, and his sudden death was felt generally as a deep personal loss.

He was the professor of minor surgery in the medical department of the University of Minnesota and was assistant surgeon on the city and county hospital staff. He was also a frequent contributor to the medical press.

METEOROLOGICAL RECORD

For the week ending February 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...6	30.26	36	41	31	77	66	82	N.W.	N.	10	4	C.	C.	.18
M...7	30.35	33	44	22	74	66	70	N.W.	S.	4	7	C.	O.	
T...8	30.38	36	43	29	84	68	76	S.E.	N.W.	3	8	O.	F.	
W...9	30.36	37	42	32	86	86	86	S.W.	S.E.	3	3	O.	O.	
T..10	30.24	48	59	36	77	68	72	S.W.	N.	8	16	O.	C.	
F...11	30.44	40	44	36	85	79	82	E.	S.	10	16	O.	O.	
S...12	30.04	44	50	37	92	80	86	S.	W.	13	12	O.	C.	.14
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[1] The Practitioner, 1897, No. 351, p. 235.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, FEBRUARY 12, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	506	146	14.06	15.39	1.33	3.99	5.13
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	172	45	5.22	23.78	—	.58	4.64
Baltimore . .	550,000	205	69	9.31	12.25	.49	1.47	3.92
Boston . . .	517,732	233	57	4.73	19.78	.86	1.72	1.72
Cincinnati . .	405,000	112	—	7.12	15.13	—	3.56	1.78
Cleveland . .	350,000	97	32	5.15	15.45	1.03	2.06	2.06
Pittsburg . .	285,000	127	41	12.48	19.50	4.68	4.68	2.34
Washington .	277,000	106	30	9.40	23.50	2.72	—	.94
Milwaukee . .	275,000	-		--	—	—	—	—
Worcester . .	105,050	30	11	10.00	13.33	3.33	3.33	—
Nashville . .	87,754	25	5	8.00	12.00	4.00	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Lowell . . .	87,193	30	10	—	11.99	—	—	—
Cambridge . .	86,812	21	6	4.76	4.76	—	—	—
Lynn	65,220	26	13	15.36	23.04	—	3.84	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	22	10	12.45	8.30	4.15	—	4.15
Lawrence . .	55,510	16	8	12.50	6.25	—	—	12.50
Springfield . .	54,790	16	6	50.00	50.00	—	—	12.50
Holyoke . . .	42,364	11	5	9.09	18.18	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	4	2	50.00	25.00	—	—	50.00
Brockton . .	35,853	11	1	—	9.09	—	—	—
Malden . . .	32,894	7	1	14.28	14.28	—	—	—
Chelsea . . .	32,716	14	3	—	14.28	—	—	—
Haverhill . .	31,406	11	7	9.09	45.45	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	5	0	20.00	40.00	—	—	—
Fitchburg . .	28,392	4	1	—	—	—	—	—
Taunton . . .	27,812	6	1	16.66	16.66	16.66	—	—
Quincy . . .	22,562	6	0	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	4	1	—	25.00	—	—	—
Everett . . .	21,575	5	2	—	80.00	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	5	1	—	40.00	—	—	—
Amesbury . .	10,920	--	—	—	—	—	—	—

Deaths reported 1,904; under five years of age 526; principal infections diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 183, acute lung diseases 340, consumption 221, diphtheria and croup 64, typhoid fever 46, diarrheal diseases 25, measles 17, whooping-cough 11, cerebro-spinal meningitis 9, erysipelas 6, scarlet fever 5.

From measles Philadelphia 9, Baltimore 4, Pittsburg 2, Washington and Haverhill 1 each. From whooping-cough Philadelphia, Baltimore, Cincinnati and Lynn 2 each, Washington, New Bedford and Springfield 1 each. From cerebro-spinal meningitis Washington 3, Philadelphia, Worcester, Lynn, Holyoke, Brockton, Malden and Newton 1 each. From erysipelas Philadelphia 5, Nashville 1. From scarlet fever Philadelphia 2, Baltimore, Washington and Cambridge 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending February 5th, the death-rate was 19.2. Deaths reported 4,133; acute diseases of the respiratory organs (London) 471, measles 141, whooping-cough 130, diphtheria 79, scarlet fever 41, diarrhea 37, fever 25.

The death-rates ranged from 11.1 in Bolton to 23.7 in Plymouth; Birkenhead 18.0, Birmingham 21.4, Brighton 17.1, Cardiff 18.2, Gateshead 15.6, Hull 17.5, Leeds 18.4, Leicester 16.2, Liverpool 20.2, London 21.5, Manchester 17.3, Newcastle-on-Tyne 15.9, Nottingham 17.4, Sheffield 17.4, Sunderland 15.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 12, 1898, TO FEBRUARY 18, 1898.

CAPTAIN PAUL F. STRAUB, assistant surgeon, is relieved from duty at Angel Island, Cal., and ordered to report in person to the commanding general, Department of the Columbia, without delay, for assignment to duty.

FIRST-LIEUT. CARL R. DARNALL, assistant surgeon, is relieved from duty at Fort Clark, Tex., and ordered to Fort McIntosh, Tex., for duty at that post, relieving **CAPTAIN FREDERICK P. REYNOLDS**, assistant surgeon.

CAPTAIN REYNOLDS, on being thus relieved, is ordered to Vancouver Barracks, Wash., for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING FEBRUARY 19, 1898.

G. C. HUBBARD, assistant surgeon, sent to St. Elizabeth's Government Hospital for the Insane.

J. C. THOMPSON, assistant surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered at once to the "Mohican."

SOCIETY NOTICE.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, March 2d, at 8.30 o'clock.

Papers: "Some Observations upon Improved Aseptic Technics," by Dr. G. E. Brewer, of New York City.

"Report of a Case of Intermittent Hydronephrosis, with Cure by Operation," by Dr. J. W. Elliot.

The presentation of specimens, apparatus, etc., of surgical interest is invited.

PAUL THORNDIKE, M.D., *Secretary*, 244 Marlborough St.

BOOKS AND PAMPHLETS RECEIVED.

Suicide. By C. H. Hughes, M.D., St. Louis, Mo. Reprint. 1897.

Leprosy. By Isadore Dyer, M.D., New Orleans, La. Reprint. 1897.

Autogenous Poisoning in Disease. By E. D. Bondurant, M.D., Mobile, Ala. Reprint. 1897.

The Etiology and Classification of Tumors. By Samuel H. Friend, M.D., Milwaukee, Wis. Reprint. 1897.

The Preparation and Testing of Diphtheria Antitoxin. By George W. Cox, M.D., Chicago. Reprint. 1897.

The Nurse's Work from the Point of View of a General Practitioner. By John L. Hildreth, A.M., M.D. Reprint. 1895.

Studies in the Psychology of Sex. Vol. I. Sexual Inversion. By Havelock Ellis. London: The University Press. 1897.

Nineteenth Annual Report of the State Board of Lunacy and Charity of Massachusetts, January, 1898. Boston: Printed by the State. 1898.

A New Apparatus for the Fixation of Bones after Resection and in Fractures with a Tendency to Displacement: with Report of Cases. By Clayton Parkhill, M.D., Denver, Col. Reprint. 1897.

Incompatibles in Prescriptions for Students in Pharmacy and Medicine and Practising Pharmacists and Physicians. By Edsel A. Ruddiman, Ph.M., M.D., Adjunct Professor of Pharmacy and Materia Medica in Vanderbilt University. First edition. First thousand. New York: John Wiley & Sons. 1897.

A Text-Book on Surgery, General, Operative and Mechanical. By John A. Wyeth, M.D., Professor of Surgery in and President of the Faculty of the New York Polyclinic Medical School and Hospital; Late Surgeon to Mount Sinai Hospital and Consulting Surgeon to St. Elizabeth's Hospital; Member of the New York Pathological Society, of the New York Surgical Society, etc. Third edition, revised and enlarged. New York: D. Appleton & Co. 1898.

The Elements of Clinical Diagnosis. By Prof. Dr. G. Klemperer, Professor of Medicine at the University of Berlin. First American from the seventh (last) German edition, with 61 illustrations. Authorized translation by Nathan E. Brill, A.M., M.D., Adjunct Attending Physician, Mount Sinai Hospital, New York City, and Samuel M. Brickner, A.M., M.D., Assistant Gynecologist, Mount Sinai Hospital, Out-Patient Department. New York: The Macmillan Co. 1898.

Sexual Neurasthenia (Nervous Exhaustion), Its Hygiene, Causes, Symptoms and Treatment, with a Chapter on Diet for the Nervous. By George M. Beard, A.M., M.D., Formerly Lecturer on Nervous Diseases in the University of the City of New York; Fellow of the New York Academy of Medicine, etc. Edited with notes and additions by A. D. Rockwell, A.M., M.D., Formerly Professor of Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine, etc. Fifth edition, with formulas. New York: E. B. Treat & Co. 1898.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M.D., LL.D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Medicine in the New York University; Physician to the Presbyterian and Bellevue Hospitals, New York. Volume III. Diseases of the Alimentary Canal; Diseases of the Peritoneum; Diseases of the Liver and Gall-Bladder; Diseases of the Spleen; Diseases of the Pancreas; Diseases of the Thyroid Gland; Chronic Metal Poisoning, Alcoholism, Morphinism, etc. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1898.

Original Articles.

FOR WHAT PERIOD OF TIME CAN IMMUNITY FROM DIPHTHERIA BE CONFERRED BY A SINGLE INJECTION OF ANTITOXIN? THE DOSAGE.

BY F. GORDON MORRILL, M.D.,
Visiting Physician to the Children's Hospital, Boston.

While one reads an occasional mention of immunization against diphtheria in the journals, the literature of the subject is vague and unsatisfactory as regards the vital questions, For how long a time can safety be insured, and what is the proper dose of antitoxin? The most satisfactory report which I have seen is that of Dr. Hermann M. Biggs, of New York, "The Use of Antitoxic Serum for the Prevention of Diphtheria," to which I shall have occasion to refer later on. The longest paper, or rather series of papers of which I have any knowledge is that of Kassowitz,[1] who positively denies that the serum confers the slightest degree of immunity. To arrive at anything like a definite and respectable conclusion as to what can or cannot be achieved in the prevention of diphtheria the careful personal observation of a large number of recorded cases during a period of years is required,—and it has been our good (or bad) fortune to have used antitoxin for immunization at the Children's Hospital since January 13, 1895; and while my object in preparing this paper has been to present what I believe to be the truth about immunization, rather than to answer Dr. Kassowitz, I venture to hope that I can at least cast a substantial doubt upon the soundness of his conclusions and the means (in part) by which he has reached them.

An outline sketch of what has been done to prevent the occurrence of diphtheria in our wards, and of the circumstances which led to our adoption of a system which we still employ is as follows:

For years we had been seriously handicapped by occasional outbreaks of diphtheria in the hospital, and during the year 1894 we were obliged to discharge every child in the house and close our doors on three separate occasions. After each of these endemics we went through a thorough process of cleaning and disinfection, and enforced such rules as to the admission of visitors as seemed likely to prevent a recurrence of the trouble. But notwithstanding these precautions, on January 13, 1895, we were confronted by the serious fact that we had three cases of clinical and six of what we soon learned to regard as bacteriological diphtheria in our infectious ward; and the question of closing the hospital for the fourth time within twelve months, or trying what immunization might do to aid us in keeping our doors open and going on with our work, arose, and the latter course decided upon. Accordingly all the children and nurses were injected, and with complete success so far as promptly stopping the further development of any symptoms which were thought to characterize diphtheria previous to the birth of the Klebs-Löeffler bacillus.

At that time there prevailed decidedly vague notions as to what could be accomplished in the way of immunization, and the amount of serum injected for the purpose was too small — 150 units being the usual dose employed.

Equally indefinite ideas as to the significance of the presence of the bacillus *per se* were in vogue, and we fell readily into line with the opinion that this alone constituted diphtheria; and thus fresh terrors were attached to a name which we had already sufficient cause for disliking. So that while we congratulated ourselves upon having escaped a very immediate danger, the question of how often to inject remained to be settled; and while sending all children who had the bacillus but no clinical symptoms of diphtheria to the infectious ward seemed rather a harsh measure, we feared the disapproval of the bacteriologists if we failed to perform what they proclaimed to be an obvious duty, all of which resulted in an overcrowding of the infectious ward, and a great waste of serum, which we used in frequently repeated injections in such cases as had the bacillus, but no clinical symptoms, hoping thereby to rid our patients of microbes which were really doing them no harm.

Each child was injected upon entering the house, and cultures were made to the extent that we were able to impose upon the good nature of the gentlemen at the Bacteriological Laboratory of the Harvard Medical School (who certainly did all in their power to aid us), and deluded with the belief that each new discovery of the bacillus meant a fresh infection, the interval permitted to elapse between the routine immunizations of well children was fixed at thirteen days; so that while the doses given were too small, their frequency made up for this deficiency in a great majority of cases so far as the prevention of clinical diphtheria was concerned. On May 5th the infectious ward was empty, all throats and noses were free of the bacillus, and our experience could be briefly summed up as follows: None of the children who had been sent to the infectious ward with merely bacillary throats or noses had manifested any symptoms of clinical diphtheria, although thoroughly exposed to infection both from their own mucous membranes and from patients having well-marked deposits of diphtheritic membrane.

Two emergency cases had broken down within twenty-four hours of admission and immunization. One boy who had received 150 units January 29th had unmistakable symptoms February 15th; and a girl who had been injected with a like amount broke down March 25th. No antitoxin was used (excepting for curative purposes in cases which I shall shortly mention) after May 15th until the succeeding autumn.

June 30th two girls returned from the Convalescent Home at Wellesley with diphtheria.

July 14th Theresa R., and August 5th William M., were sent over to the infectious ward from the house.

On November 15, 1895, immunization was again begun and our statistics up to that date are: Of 279 immunized children, four had diphtheria — two of these within twenty-four hours after injection and two from the fact (as I shall hope to prove) that the amount of antitoxin used was altogether too small. As to the first two cases, it is merely stating a truism to say that one can immunize too late, just as one may vaccinate too late, and that such cases are merely the natural results of (often unavoidable) delay.

Of 414 non-immunized patients who were in the house between May 15th and November 15th, four had diphtheria; and this at a time when the disease was far less prevalent, and when open windows afforded free ventilation for those in the hospital, while the two who broke down at Wellesley had enjoyed plenty of outdoor air.

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[1] Vienna Medical Weekly, May 16, 1896.

In view of our previous experience, it was now decided to inject each child in the bath-room on admittance before permitting it to enter any of the wards — the amount to be injected being fixed at one-half the curative dose for children of eight or over, one-third for those between five and eight, and one-fourth for patients between two and five.[2] No delay was permitted (for bacteriological examination) in the admission of patients, but all new cases were sent into rooms in the last wing, there to remain until their cultures showed their fitness to occupy beds in the common wards. To this section of the house were also sent all cases acquiring the bacillus while in the hospital. The injections were repeated every 28 days, and in case of fresh discoveries of the microbe the children having it were at once injected providing 10 days had elapsed since their last immunization.

December 15, 1895, Dr. H. W. Gross entered upon his duties as bacteriologist to the hospital, and weekly cultures were made from every throat and nose in the house.

During the winter and succeeding spring (1896), although very nearly eight per cent. of the children had the bacillus, and we were free from its presence for five days only, as shown by the cultures, the only cases of diphtheria were: a case in which the antitoxin was accidentally omitted for 36 days, and two who were sent to the City Hospital from Wellesley after omission of immunization for three months and 43 days respectively. By the middle of May all the cultures were negative and injections stopped.

During the summer no cases of diphtheria occurred and we did not resume the antitoxin until November, 1896, when we determined to pay no further attention to the bacillus, but to simply inject every 28 days with the same dose employed during the preceding winter. The result of the previous year being: Of 421 children injected every four weeks, none had diphtheria, while of 425 either non-immunized patients or in whom the serum had been omitted for at least 36 days, three had contracted the disease.

Accordingly, no further cultures were made, and applicants were freely admitted to the common wards. All went well until February 18, 1897, when a boy of ten was sent to the City Hospital from Wellesley 23 days after receiving 250 units. It was not thought best however to shorten the intervals on account of the exception, particularly in view of the fact that an insufficient amount had been used.[3] and matters proceeded as before until March 5th, when a girl, age six, who had been given 300 units 23 days previously showed unmistakable symptoms; and again on April 26th, when a child of twelve who had been injected with 400 units 22 days before broke down. May 7th an interne and two nurses and one child (all non-immunized) came down.

Since April 26, 1896, from 250 to 500 units (in accordance with age[4]) have been given each case every three weeks, and we have had no further trouble. Whether any of the patients have bacillary mucous membranes we do not know; but judging by our previous experience, some of them probably have — just as a certain percentage of children one sees playing about the streets have.

Since November, 1896, of 423 cases immunized every 28 days, three contracted diphtheria, the minimum time elapsing between the infection and clinical symptoms being 22 days; while of non-immunized children and adults four contracted the disease. Of 680 who have been immunized every three weeks none have had it.[5]

Glancing back over what I have said, it will be seen that of 1,808 patients immunized at least once every 28 days with amounts of serum varying from 150 to 500 units, seven had diphtheria; three from insufficient dosing, two within twenty-four hours of being injected, and two in whom the time of infection came 23 and 22 days respectively after being given an amount which has thus far proved entirely effective when given every three weeks. Of 829 who were given no antitoxin, or in whom more than 28 days elapsed after the injections, nine had diphtheria, besides three non-immunized adults.

In New York the results as set forth by Dr. Hermann M. Biggs[6] are strongly corroborative of the views which our experience has led us to adopt: In the New York Infant Asylum, between September, 1894, and January 16, 1895, there were 107 cases of diphtheria. Two hundred and thirty-four children were immunized on January 17th, and but one case occurred until 30 days had elapsed, when five more developed during the succeeding 12 days at which time an increased dose (125 to 225 units) was given 245 children, and no further trouble was experienced for 31 days. At the Juvenile Asylum 12 cases occurred during the two months preceding April 13, 1895, when 81 children were immunized during that, and the succeeding few weeks,[7] and the only cases of diphtheria which developed were those of two non-immunized children and one adult. Similar experiences were had at the Nursery and Child's Hospital, the Bellevue and the Catholic Protectory. At the last-named institution the amounts injected at the second immunization corresponded very closely to those which we now employ, and no cases occurred within 30 days, excepting one which appeared within twenty-four hours of the injection. The inspectors of the Health Department immunized 232 persons, and in three of the four cases which broke down within the succeeding 30 days, the symptoms appeared within twenty-four hours — examples of the unavoidable.

Of 1,043 cases tabulated in Dr. Biggs's report (a large percentage having had positive cultures and all having been more or less exposed to infection) three only, aside from those in which symptoms were obscured within twenty-four hours, broke down — on the 12th, 17th and 19th days respectively; and in these three cases the dose administered varied "from 100 to 250 units" — examples of insufficient dosage — while at the Catholic Protectory (where only one break-down and that within twenty-four hours occurred) much larger quantities were used. Surely these results are enough to prove that there "is something in" immunization — something which not only saves life, but does so with a degree of certainty which vaccination alone can rival.

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[2] From November 15, 1895, to March 16, 1896, the serum made by Dr. Ernst was used; and the test of potency being based on the French system, affords no satisfactory means of comparison with the present standard in units. Since the last-mentioned date we have been supplied by the State Board of Health, and the dosage fixed by the prevailing standard.

[3] Probably on account of a temporary deficiency of serum.

[4] The patients at the Boston Children's Hospital are from two to twelve years of age, inclusive.

[5] Immunization has been carried out during the past summer.

[6] Loc. cit

[7] Interval between injections not stated.

Dr. Kassowitz bases his theory of the utter futility of immunization partly upon the fact that the disease itself confers no immunity from early or late reinfection even in cases treated with the serum, and partly on cases which he quotes when antitoxin has failed to ensure safety. As to reinfection after diphtheria, I am perfectly willing to concede that there is scarcely a disease which a human being cannot have a second time if he survives the first attack; and as to his instances of quite speedy relapse after the serum treatment it might be asked if they may not have been due to failure to use a sufficient quantity during the original seizure.

The cases which he cites as proving that antitoxin administered to healthy children confers no immunity are for the greater part quoted without reference to the journals in which they were originally published, and without stating the number of days elapsing before infection took place — thus rendering fair criticism impossible. Of the few he mentions with definite references, some have proved inaccessible to me, but in any event his cases include: twelve brothers and sisters who accompanied diphtheritic children to the hospital, and who were each injected with 120 units. Three of those who were given this insufficient dose had diphtheria at some indefinite time later on. Two cases in which infection took place in twenty-four hours, and which merely substantiate the fact that one can immunize too late. One case in which an inadequate dose (150 units) was followed by infection on the 18th day. One case in which there was infection on the 28th day.

I do not wish to be understood as implying that the cases which I have not read in their original sources of publication may not carry a degree of belief in Dr. Kassowitz' theory. To do this would be to question the good faith which doubtless inspired him to publish his articles. I can only say that from the material at my command, and an experience of nearly three years in this special line, I can arrive at nothing but a total disagreement with his expressed opinion.

So far as bad results from the injections are concerned, the only cases which I have seen where anything like dangerous symptoms appeared were those of a boy with a splenic leucocythemia, and another with a nephritis. In the latter instance the antitoxin caused a distinct increase of the albuminuria and dropsy. In another case in which the same clinical symptoms were present and the urinary analysis corresponded very closely to that of the first, the injections produced no unpleasant effects. We have given in all about 3,000 injections; and with the above exceptions, aside from an occasional urticaria (far more rare now than formerly) and an insignificant and transitory albuminuria, nothing worth noting has followed them. Very rarely has the antitoxin been omitted or postponed, no matter how sick the patient may have been. In one instance of very severe cerebro-spinal meningitis in which no injections were given, the child contracted a diphtheria which proved fatal.

I am quite sure that the fact of our ability to confer safety for a definite time by promptly injecting exposed cases with an adequate dose of antitoxic serum is not sufficiently recognized; and I think that the prevailing opinion among the medical profession regarding immunization may be briefly stated as follows: It is an uncertain thing at best, and perhaps it is, upon the whole, just as well to watch exposed cases, and inject promptly the first moment that symptoms of diphtheria appear. Should advice of this kind be given as regards vaccinating persons exposed to smallpox it would be just as logical — yet these principles are printed, preached and practised to day, and the point that it is an obvious duty to immunize every person who has been exposed to diphtheria is either denied, or dodged by half hearted approval, and the recommendation of insufficient doses.

From actual experience we are perfectly justified in believing:

(1) That immunity in any given case, of no matter how thorough exposure to diphtheria, may be conferred, for at least ten days, by the injection of a small dose (100–250 units) of serum, provided it is given twenty-four hours previous to actual infection.

(2) That a larger dose (250 units for a child of two, up to 500 units for one of eight or over[8]) will confer safety for three weeks — or to be a little more conservative, let us say twenty days — under similar conditions.

(3) That no harm will result from the treatment in a vast majority of cases of *sick* children, and probably in no case of a healthy child, provided the serum used is up to the present standard of purity.

In conclusion, I would say that any one who thinks that antitoxin will prevent the occurrence of a follicular tonsilitis or of a coryza in an individual who happens to have the Klebs-Löffler bacillus in his throat or nose will be disappointed; for neither of these conditions constitutes a diphtheria any more than the coexistence of the pneumococcus in the saliva and a bronchitis constitutes a frank pneumonia. I will add that a physician who fails to promptly immunize the members of a family or close community in which diphtheria breaks out, neglects to do his duty by those whose safety lies in his hands.

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PYONEPHROSIS.

A Clinical Study, with Detailed Report of a Case of Extreme Type.

BY ALBERT H. TUTTLE, M.D., CAMBRIDGE;
EDWARD REYNOLDS, M.D., BOSTON;
AND J. BERGEN OGDEN, M.D.,
Assistant in Chemistry, Harvard Medical School; Assistant in Clinical Pathology, Boston City Hospital.

(Concluded from No. 8, p. 177.)

REMARKS OF DR. REYNOLDS.

This case furnishes a fine example, both of the value and the limitations of the ureteral catheter in the treatment of pyonephrosis.

In my opinion this patient would certainly have died if subjected to the knife when I first saw her, and I think that the very remarkable improvement which followed the drainage of the abscess through the catheter must be considered to have saved her life by permitting her to improve to a point at which operation became possible. At the same time, I do not believe that in cases of any severity the use of the catheter can promise a permanent cure, or take the place of the knife. I should limit its use to the old surgical principle of the treatment of pus with which our fathers were so familiar, that in desperate cases one should employ minor means so long as the patient improves under them, and the moment this improvement ceases, cut down upon the pus without waiting for the subsequent deterioration which is sure to follow. There can be no doubt to my mind but that Dr. Tuttle was emphatically right in abandoning the catheter and turning to the knife at the time he did, and that he was right in limiting his operative interference at that time to a nephrotomy. The removal of so old and active a pyonephrosis could hardly have been complete without the exsection of at least a portion of the ureter; and that the patient would hardly have survived so extensive an operation is shown by the fact that she nearly succumbed to a rapid nephrotomy. In the introduction of the ureteral catheter in cases in which catheterization is made difficult by strictures or other distortions of the ureter, success is largely influenced by the instruments used. In the presence of stricture I am inclined to believe it unwise to use any instrument more rigid than the webbing catheters, and I believe it very important to success that the individual catheter selected should have a long, gently tapering and flexible point. This can then be trusted to guide itself through the stricture. A small catheter (one and three-fourths or two millimetres in diameter) will often pass with ease, if used first, when a primary attempt to pass a larger one through the stricture would have rendered the ureter impassable to the subsequent use of the small catheter, unless a number of days or weeks are allowed to elapse between the attempts. Whether this is due to the production of swelling or of spasmodic contraction by the ineffectual attempts to pass the large catheter. I do not know, but I am confident that the difficulty is a fact.

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[8] It can readily be conceived that in the employment of large quantities of serum the doses given (for economical reasons, or as a matter of convenience) not always correspond to those which our experience at the Children's Hospital has shown to be the most advisable. For instance, if a phial contains 1,600 units and four children between the ages of eight and twelve require immunization, 400 units would probably be given in each case, and so on.

Since the date of this case, I have learned by experience that the best way to pass the stricture is by means of rapid gradual dilatation with bougies. It has become my habit to raise the stricture to about a No. 13 French at a single sitting (this size having been selected empirically), after which the use of an ample catheter is easy.

For cases in which it is necessary to tie the catheter in place, it is to be regretted that we have not a better material than the so-called webbing catheters, which seem always to irritate the bladder after variable periods. In this case the term during which the patient was able to retain it was unusually long.

NOTES AND REMARKS OF DR. OGDEN.

On August 13, 1896, I received four specimens of urine for analysis, in the case of Mrs. H.

First Specimen. — From left kidney, taken from renal pelvis by ureteral catheter. Amount of urine, 44 c. c.; time equal. Color pale; reaction acid; specific gravity 1.012; urophein relatively diminished; indoxyl much increased; urea 1.26 %; uric acid relatively increased; chlorides, earthy and alkaline phosphates relatively diminished. Albumin: a trace (not quantitated, but approximately $\frac{1}{25}$ of 1%). Bile and sugar absent. Sediment: numerous medium and small caudate epithelial cells, like those from ureter and superficial layer of pelvis of kidney. Few leucocytes and small round epithelial cells, an occasional one slightly fatty (probably most of them renal). A few small hyaline and granular casts, an occasional one with an abnormal blood-globule, renal cell and fat globule adherent. Few normal and abnormal blood-globules.

Second Specimen. — From right kidney. Spontaneous evacuation through ureteral catheter after the use of an aspirator.

Amount of urine, 49 c. c. Color normal; turbid; reaction strongly alkaline; specific gravity 1.015; urophein diminished; indoxyl increased; urea .63 %; chlorides, earthy and alkaline phosphates diminished. Albumin $\frac{1}{4}$ % to $\frac{1}{2}$ % (not quantitated). Bile and sugar absent. Sediment: a large amount of pus, some of which is much degenerated. Many small and medium round cells, few of which are fatty. A large amount of granular *débris* (probably from broken-down pus and cells). Numerous abnormal and few normal blood-globules.

On August 17th two more specimens were received, the results of analyses being as follows:

Left Kidney.—Urine passed through bladder. Amount in twenty-four hours for this kidney, 636 c. c. Color pale; reaction acid; specific gravity 1.010; urea 1.23%. Albumin, a slight trace (not quantitated, but less than on the 13th). Bile and sugar absent. Sediment: considerable squamous epithelium. Numerous small round cells, few normal and abnormal blood-globules. A few hyaline and granular casts with renal cells, abnormal blood and an occasional one with a little fat adherent. A few cells as from the calicis of kidney, and an occasional small caudate cell as from the superficial layer of pelvis of kidney. Total urea in twenty-four hours for this kidney, 7.17 gm.

Right Kidney. — Urine passed through ureteral catheter. Amount in twenty-four hours for this kidney, 295 c. c. Color pale; turbid; reaction faintly acid; specific gravity 1.009; urea .38%. Albumin, $\frac{1}{4}$ % to $\frac{1}{2}$ % (not quantitated). Sediment: a large amount of degenerated pus and many medium and small round cells. Considerable normal blood. No casts seen. Urea from this kidney, 1.12 gm. in twenty-four hours. Total urea in twenty-four hours from *both* kidneys, 8.29 gm. The sediment of the urine from the right kidney was thoroughly examined for tubercle bacilli, with a negative result.

Left Kidney (August 21st). — Urine passed through bladder. Amount in twenty-four hours, 830 c. c. Color pale; acid reaction; specific gravity $1.012\frac{1}{2}$; urea 1.26%. Albumin $\frac{1}{60}$ of 1 %. Sediment: considerable pus free and in clumps; many medium and small round cells, a few of which are fatty; considerable squamous epithelium and few blood-globules; an occasional hyaline and granular cast, with fat and renal cells adherent. Total urea in twenty-four hours from this kidney, 10.45 gm.

Right Kidney (August 21st). — Amount passed through ureteral catheter, 205 c. c. Color pale; turbid; faintly alkaline reaction; specific gravity 1.013; urea .57 %; albumin $\frac{5}{12}$ %. Sediment: same as on August 17th, except that there is more pus and blood. No casts found. Urea from this kidney, 1.16 gm. in twenty-four hours.

Total quantity of urea in twenty-four hours from both kidneys, 11.51 gm.

Left Kidney (August 25th). — Amount of urine secreted in twenty-four hours, 950 c. c. Color pale; reaction faintly acid; specific gravity 1.011; urea 1.01 %. Albumin, a very slight trace (too slight to quantitate). Sediment: same as on August 21st. Total amount of urea in twenty-four hours, 9.6 gm.

Right Kidney (August 25th). — Amount of urine which passed through ureteral catheter in twenty-four hours, 250 c. c. Color muddy; reaction faintly acid; specific gravity 1.012; urea .56 %; albumin $\frac{5}{12}$ %. Sediment: same as on August 21st. Twenty-four-hour amount of urea from this kidney, 1.4 gm., and for *both* kidneys, 11 gm.

Left Kidney (August 29th). — Amount of urine in twenty-four hours (through bladder), 980 c. c. Color pale; reaction acid; specific gravity 1.011; urea 1.13 %; coloring matters, chlorides, earthy and alkaline phosphates relatively diminished. Albumin, a very slight trace (too slight to quantitate), a faint trace of globulin present. Bile and sugar absent. Sediment: chiefly pus, free and in small clumps, considerable squamous epithelium, numerous small round cells, few fatty and few blood-globules. An occasional hyaline and granular cast, with renal cells and a little fat adherent. Urea in twenty-four hours, 11.07 gm.

Right Kidney (August 29th). — Amount of urine through ureteral catheter, 295 c. c. Color muddy; reddish; reaction acid; specific gravity 1.014; urea .5 %; albumin $\frac{11}{20}$ %; globuline $\frac{6}{20}$ %. Bile and sugar absent. Sediment: a large amount of pus and considerable normal blood (more than at previous examinations). Many medium and small round cells, few fatty. A few caudate and spindle cells. No casts seen. Urea in twenty-four hours, 1.47 gm.

Number of grammes of urea for both kidneys, 12.54.

The urinary sediment from the right kidney was again examined for tubercle bacilli, and none found.

Left Kidney (September 12th).—Amount of urine, 740 c. c. Color pale; reaction acid; specific gravity 1.011; urea 1.26 %; uric acid relatively increased. Other normal solids and coloring matters relatively diminished. Albumin $\frac{1}{8}$ %. Bile and sugar absent. Sediment: few squamous epithelial cells and leucocytes. An occasional normal and abnormal blood-globule. Few hyaline and granular casts, some with renal cells, little fat and an occasional one with a blood-globule adherent. Numerous small round cells, few fatty. The quantity of urea in twenty-four hours, 9.3 gm.

The urine from the right kidney could not be obtained.

Left Kidney (October 2d). — Twenty-four-hour amount, 960 c. c. Color pale; reaction neutral; specific gravity 1.010; urea 1.13 %; albumin, a trace. Sediment: chiefly squamous epithelium, and considerable pus free and in clumps. Few normal and abnormal blood-globules. An occasional hyaline and granular cast, with a little fat and abnormal blood adherent. Many small round cells, some fatty. Urea from this kidney in twenty-four hours, 10.85 gm.

Right Kidney (October 2d).—The twenty-four-hour amount of urine obtained through the tube, which was inserted into the sinus leading to the kidney, 340 c. c. Color reddish; muddy; reaction acid; specific gravity 1.010; urea .36 %; albumin $\frac{11}{20}$ %. Bile and sugar absent. Sediment: a large amount of pus and many small round cells, some fatty. Considerable normal blood. An occasional compound granular cell. Little fibrin. Urea in twenty-four hours, 1.22 gm.

Total urea in twenty-four hours from both kidneys, 12.06 gm.

Left Kidney (November 2d). — The twenty-four-hour amount of urine through bladder, 950 c. c. Color pale; turbid; reaction neutral; specific gravity 1.010; urea .76 %; albumin $\frac{1}{15}$ %; globulin, a very faint trace. Bile and sugar absent. Sediment: chiefly pus, free and in clumps; many small round cells, some fatty; few squamous cells, normal and abnormal blood-globules; rather numerous hyaline and granular casts, some with little blood and fat adherent. Urea in twenty-four hours, 7.22 gm.

Right Kidney (November 2d). — Urine obtained in twenty-four hours through sinus, 180 c. c. Color pale; reaction alkaline; specific gravity 1.013; urea .7 %; albumin $\frac{9}{20}$ %; globulin $\frac{4}{20}$ %. Sediment: large amount of degenerated pus; many small round cells, some fatty, occasional compound granule cell; few blood globules. Urea in twenty-four hours, 1.26 gm., and for both kidneys, 8.48 gm.

The remarkable skill with which the ureters and renal pelves are catheterized affords us the very best opportunity for making diagnoses from the urine thus obtained.

Previous to the time when the catheter was introduced into the ureter we were very often in doubt as to which kidney was the seat of disease, except in so far as we were guided by clinical symptoms. In the case of Mrs. H., from the first specimens obtained we were able to make the diagnosis of chronic pyelonephritis ("surgical kidney") on the right side, and what appeared to be a secondary disturbance of the left kidney of the nature of an active hyperemia, probably chiefly due to the elimination of toxins absorbed from the right kidney.

The foregoing detailed analyses have been given largely for the purpose of comparison. We found that the right kidney evidently had very little secreting structure left as the average quantity of urine in twenty-four hours amounted to only 261 c. c. (varying from 180 c. c. to 340 c. c., and the average twenty-four-hour quantity of urea 1.27 gm. (varying from 1.12 to 1.47 gm.), while from the left kidney the urine averaged 864 c. c. (varying from 636 to 980 c. c.) and the urea averaged 9.38 gm. (varying from 7.22 to 11.07 gm.) in twenty-four hours. Although the total urea in twenty-four hours for both kidneys (average 10.66, varying from 8.29 to 12.54 gm.) is far below the normal, yet it can be readily understood, when we consider the disturbance set up by the suppurating kidney, the emaciation, the limited diet and resulting low metabolism. It is apparent that the function of the left kidney, although disturbed, was not markedly retarded, as this organ was doing the greater part of the work which was originally intended for two kidneys.

Each specimen of urine from the right kidney was thoroughly examined for renal casts; but none could be found, their absence probably being due to the very extensive destruction of the parenchymatous structure and to the extreme dilatation of any tubules which remained.

The first few specimens of purulent urine from the right kidney had a strongly alkaline reaction and an exceedingly foul and disagreeable odor, evidently due to the fact that the urine and pus had been pent up in the renal pelvis for a long time and had undergone considerable decomposition. As soon as free evacuation through the ureteral catheter had been established, the urine was generally found to have an acid reaction and the disagreeable odor soon disappeared.

It is interesting to note the large quantity of serum albumin and serum globulin which the urine from the right side contained, and that the quantity of globulin was practically equal to that of the albumin. Traces of serum globulin are quite frequently seen in the urine, especially urines containing pus which comes from the kidney: but it is rather uncommon to find as large a quantity and equal to the quantity of albumin. Instances have been reported in which the amount of globulin was in excess of the quantity of albumin, the reverse, however, being the rule. The only satisfactory explanation for the varying quantities of globulin in the urine and its inconstant relation to albumin is that serum globulin is not readily diffused through the animal membranes, whereas serum albumin is quite readily diffusible; consequently, so long as there is not a marked change in the parenchyma and blood-vessels of the kidney, globulin will be absent, or only in traces, even though the albumin may be present in considerable amount. On the other hand, if there is destruction of the parenchyma and blood-vessels, as in the case under consideration, the globulin meets with less resistance and readily passes out.

The urine of August 21st, which passed from the left kidney through the bladder, showed evidence of a chronic pyelo-cystitis. There was still evidence of this at the last examination (November 2d), as well as of an increasing disturbance in the tubules, as shown by the somewhat larger quantity of albumin and the larger number of casts.

The sudden appearance of more albumin and a larger number of casts on September 12th was probably due to the ether, which was necessarily given in order to perform the nephrotomy. This severe irritation was apparently of short duration, as the urine of October 2d had assumed its usual appearance.

Left Kidney (June 18, 1897). — The twenty-four-hour quantity of urine, 890 c. c. Color pale; turbid; reaction alkaline; specific gravity 1.013; urea 1.15 %; albumin $\frac{1}{40}$ %; a trace of globulin. Bile and sugar absent. Sediment: an immense quantity of squamous and scaly epithelium; considerable degenerated pus and many small round cells, some fatty; considerable abnormal blood; few hyaline, granular, and brown granular casts, with blood, renal cells and some fat adherent; crystals of triple phosphate. The total quantity of urea in twenty-four hours for this kidney, 10.2 gm.

Right Kidney (June 18, 1897). — The twenty-four-hour quantity of urine for this kidney, 190 c. c. Pale; turbid; acid, 1.017; urea 1.07%; albumin $\frac{1}{11}$%. Considerable globulin present. Bile and sugar absent. Sediment: chiefly decomposed pus; many small round cells, some fatty; a few medium and large round cells; a few secondary crystals of uric acid; some abnormal blood; no casts seen. The twenty-four-hour quantity of urea for this kidney, 2.03 gm., and for both kidneys, 12.23 gm.

This examination showed a certain amount of improvement in the condition on the *right*. The quantity of albumin and pus was less and the twenty-four-hour amount of urea more than at any previous examination. Much the same can be said of the condition on the *left*. There was still evidence, however, of a marked irritation of this organ, and remarkably low urea (10.2 gm.) considering the improved condition of the patient, yet a decided improvement when compared with the examination of November 2d. There were still evidences of a chronic cystitis, but very few of the chronic pyelitis; in fact, it was very difficult to decide whether or not any pyelitis remained.

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THE MEDICAL AND SURGICAL TREATMENT OF HARE-LIP.[1]

BY J. G. MUMFORD, M.D.,
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No two cases of hare-lip are alike. They vary as much as do the faces which they deform; and so, from the simple notch in the border to the double hare-lip with complete cleft palate, each case must be treated on its own merits. And yet they have not been so treated; nor have operators, in many cases, seemed to appreciate the importance to the individual of a natural and sightly mouth. As to the child's parents, they are easily satisfied, and but too well pleased to have a hideous cavity bridged over in any fashion. With all these varieties of deformity, however, there are two main divisions for surgical purposes: those lips which are backed by a sound jaw, and those which are continuous with the nostril and a palatal cleft. In the former class the mortality is *nil*, so far as the lip is concerned, whether treated or not. In the second class the mortality is high when untreated — by some writers placed as high as 30 per cent.; when treated, the mortality ranges from 2 to 15 per cent., according to Fritsche. These deaths are ascribed, in all cases, to malnutrition, hemorrhage or bronchitis. In my opinion, by very far the most important factor is malnutrition. We hear of hare-lip babies, vigorous, puny, well nourished and rachitic; and the appropriate time of treatment for each. As a matter of fact, most of these babies are well enough at birth; and their subsequent condition depends largely upon the care and intelligence used in their feeding. If this care be used, the average infant can be brought comfortably up to the sixth or eighth week — the proper time for a hare-lip operation. Operations done earlier must be hurried and ineffectual for cosmetic purposes; if done later, except in the simple cases, the advantages of an early moulding of the nose and lateral pressure upon a cleft upper jaw are lost, in a measure.

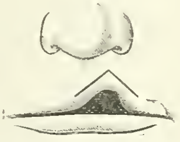

FIG. 1.

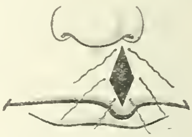

FIG. 2.

This highly important preparatory feeding of the patient is in itself an art, and, if outside the experience of the surgeon, should be entrusted to some one skilled in infant feeding. In my experience its successful prosecution influences very largely the result of the subsequent operation, and its effects are felt even up to the period of dentition.

Ordinarily there is no difficulty in giving the modified milk mixtures prepared in the laboratories for infant feeding; making up a strength according to the following table:

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[1] Read before the Warren Club, December 14, 1897.

Table I.

Week.	Amt. in oz. at each feeding.	Fat %	Milk sugar %	Proteids %
1 1st	1	2.00	5.00	.75
2 2d	1½	2.50	6.00	1 00
3 3d	2	3.00	6.00	1.00
4 4th to 6th	2½-3	3.50	6.50	1.00
5 6th to 8th	3-3¼	3.50	6.50	1.50
6 8th to 16th	3¼-4½	4.00	7.00	1.50
7 16th to 24th	5+	4.00	7.00	2.00

These mixtures, with an alkalinity of 5 to 6 per cent., answer all practical purposes. When milk laboratories are not accessible, home modification may be done according to the following table:

Table II.

Week.	Cream 16% oz.	Milk oz.	Lime-water oz.	Water oz.	Sugar of milk in 3⅜ ʒ measures.
1 1st	4	0	1	15	2
2 2d	5	0	1	14	2½
3 3d	6	0	1	13	2½
4 4th to 6th	7	1	1	11	2½
5 6th to 8th	7	1	1	11	2¼
6 8th to 16th	8	0	1	11	2¾
7 16th to 24th	8	2½	1	8½	2½

Amount at each feeding as in previous table.

Lines 1, 2, 3, etc. in Table II, are equivalent to lines 1, 2, 3, etc. in Table I.

In administering the milk there are a few practical hints which should be borne in mind. The food is best fed from a spoon; the various shields and patent nipples are needless and troublesome. The child should be placed on the bed in a half-reclining position during feeding, because when prone the milk is more likely to run up into the nares. If there is a cleft palate, the most scrupulous care must be observed to keep clean the mouth and nares; for this, a cotton stick dipped in a weak boric acid or borax and water solution is best. Plenty of clear water to drink should be given between feedings, as the mouth necessarily is very dry, and by the use of the water a proper action of the bowels is maintained. Stimulants should be given if there is pallor or a flabby skin — one or more drops of brandy with each feeding. The brandy should be increased for two days before operation, and on the day of the operation, in any case, a goodly measure should be allowed.

Most authorities are now agreed that chloroform is the best anesthetic for the operation, on account of its non-irritating action on the lungs. This may be so; but in some considerable experience with ether, I have seen no cause to complain of it; and I see to it that it is properly given. I have liked its stimulating effect.

As to the time for the operation itself, I make one exception to my rule laid down. In simple notched lips not extending to the nostril I think it well to wait until the child is three or four years old, as he can then be trusted to manage the wound carefully, and a most exact plastic operation can be done with the more mature tissues.

In these cases, and indeed in all others, so far as ultimate beauty of result is concerned, the greatest attention must be paid to the finish of the vermilion border. For this purpose the Nélaton or Malgaigne operations (Figs. 1 and 2) are the only ones to be used. The old-fashioned slashing cuts with scissors, and the quick sewing up, are bad surgery, and should never be used except when desperate hurry is demanded.

There is a large variety of other flap operations described by authors: Hagedorn's, Mirault-Langenbeck's, Simon's, Giraldè's and many more. They are all designed on the dovetail principle; their object being to fill in the cavity and provide a smooth red-lip border. In practice I do not think them applicable to infant lips. They sometimes answer admirably for older children and adults, but not for restless crying babies. At best they leave an irregular scar instead of a straight line, and there not infrequently results an ugly notch in the lip border. A type of this dovetailing operation is shown in the sketch of Giraldè's procedure (Figs. 4 and 5). The objection to it, as to most of the others, is that the thin flap *A* shrinks up, and that, if the mortising done with flap *B* does not hold by the first intention, we get a broad ugly scar. Ordinarily the long flaps of Malgaigne (Fig. 6) are not necessary, but the modified Malgaigne may be used, as shown in the cut (Fig. 3). This amounts to little more than cutting off the ends of the long Malgaigne flaps, which may protrude too far.

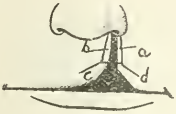


Fig. 3.

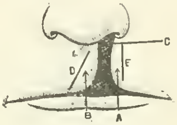


Fig. 4.

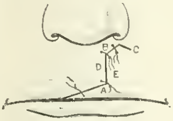


Fig. 5.

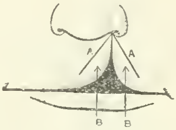


Fig. 6.

This same plan applies to double hair-lip operations in which it is usually unnecessary to sacrifice any considerable amount of tissue. In these cases the median portion may usually be trimmed into a V-shape (Fig. 9), as demonstrated in the cut, and the side flaps are then easily adjusted, as in cases of single hare-lip.

It is not necessary here to go into the treatment of the intermaxillary bone. Suffice it to say that it can usually be forced into position and utilized. In very rare cases it must be sacrificed.

It has been claimed by some writers that double hare-lip operations should be postponed until the second or third year of life, but I prefer to do them within the first two months if possible, for I am convinced that the same advantages apply to the early operation in these cases as to those of single hare-lip. In all operations, except for a simple notch, the soft parts about the alveolar processes and nares should be dissected free from the upper jaw with blunt-pointed scissors. By clinging closely to the bone no hemorrhage will result. When the flaps are being cut the coronary arteries may be controlled easily by an assistant's fingers. Scissors should not be used in cutting the flaps. They are inaccurate, sometimes bruise the tissues, and do not leave so clean and broad a cut surface. A narrow-bladed knife is best.

The old-fashioned hare-lip pins have gone out of general use, and very properly. Even when removed on the third day — the old rule — they leave a scar; and the third day is too early for the removal of deep sutures. In all operations, for both single and double hare-lip, one shotted stitch of silver wire is sufficient to anchor the parts. This is indicated by the dotted line *x y* in Fig. 9. It is inserted in the fold behind the alæ, lies in that natural furrow, takes all the strain off from the severed deep parts, holds in place the intermaxillary bone, and leaves no perceptible scar. When this stitch has been placed and the parts approximately brought into position, the question of passing the remaining stitches is one simply of time and patience. In all extensive operations, and always in the case of babies, I have adopted the method of J. C. Warren. Working with a stout silk suture, threaded with a needle at each end, the stitch is entered close under the skin, in the freshened lip border, is passed deeply through the underlying soft parts and buccal mucous membrane, and tied strongly to its fellow inside the mouth (see Fig. 10). Three or four of these heavy stitches suffice to hold the parts firmly in excellent apposition; when tied the ends should be cut long. The slight gaping in the skin flaps of the external wound is closed with a few very fine intestinal sutures threaded in small embroidery needles, and are passed as close as possible to the cut edges, the greatest care being taken not to draw them tight enough to invert the skin. The fine superficial sutures must be removed on the third day, and it will be found that no perceptible stitch scar results. The deep stitches are removed from the inside of the mouth on the fifth or sixth day, and the wire bridge on the seventh or eighth day.

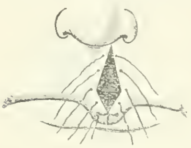


FIG. 7.

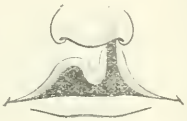


FIG. 8.

Fig. 9.

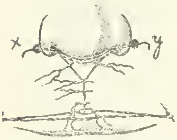
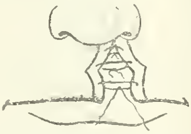


Fig 10



By no means the least part of the operation is the application of a proper sustaining strap from cheek to cheek. The old-fashioned adhesive plaster is a wretched device, and should never be used; it is unclean, sweats the parts, and checks any discharges which may collect. The familiar *crêpe lisse* "butterfly" is the best support. It is light, clean, sightly and does not check discharges. Before applying it, it is well to paint the wound inside and outside the mouth with compound tincture of benzoin, to lay a soft absorbent pad across the external wound, and then firmly to secure the "butterfly" with flexible collodion.

Silkworm-gut is sometimes used for sutures. It is applicable only when tied outside the lip. When so used it always leaves scars.

For older children and adults, I have had most excellent and satisfactory results with buried catgut. By its use only can an approach to an aseptic operation be made. The firm resisting tissues of an adult offer an excellent hold for the buried stitch, and if there remains a slight gaping of the skin it can be closed with the fine intestinal sutures.

An absolutely aseptic programme can never be carried out in any hare-lip operation, but some attempt should always be made to render the field approximately sterile. The constant use of boric-acid washes both before and after operation should be maintained. At the time of the operation the upper lip should be thoroughly wiped over, inside and out, with alcohol, which in its turn is to be washed off with water.

During convalescence, especially after the removal of the stitches, some spreading of the upper part of the wound should not discourage the surgeon. As a rule, if the vermilion border holds, the open cleft above will heal, by the second intention, in two or three weeks. There is often a very anxious time about the end of the first week, but the holding of the border is a sure sign that all will yet go well.

No one feature in the whole treatment of hare-lip is of more importance than that of the feeding of young infants during convalescence from the operation. As an immediate result of the operation there is almost always a considerable gastro-intestinal upset. This is in part due to the anesthetic and in part to shock, but by far the most important factor is the blood which has been swallowed. No matter what the form of operation or the position in which the child is held, a very considerable amount of blood finds its way into the stomach. If this is vomited, so much the better; but usually it remains and makes trouble. There then follow several days of diarrhea, undigested stools, pain, colic, sometimes loss of appetite and occasionally vomiting. These symptoms may persist many days and do not infrequently most seriously threaten life. More often, however, they merely debilitate the patient and seriously delay the healing of the wound. I have seen cases, in which a total lack of success in closing the lip was obviously due to a low vitality in the wound through malnutrition in an infant hitherto perfectly strong and healthy.

Of the very greatest importance, therefore, is proper care during convalescence.

The ordinary rules for the treatment of an acute mycotic diarrhea are here applicable.

On the evening after the operation a brisk purge should be given — castor oil or calomel; and the child should be put on a weak cream mixture. Sometimes even this is not borne, and a thin barley-water mixture or weak strained chicken-tea should be substituted for it. Meanwhile liberal doses of brandy should be given; and, if diarrhea persists, bismuth subgallate, in three-grain doses or more, should follow each feeding. Gradually the diet may be strengthened as convalescence progresses, until the normal mixtures given in the tables have been reached. At the same time plenty of water to drink should be given — a precaution most often neglected by uninstructed nurses.

A *résumé* of the important points in the treatment of hare-lip, therefore, will include the following considerations:

(1) Hare-lip babies are not necessarily feeble at birth, and by proper feeding can be kept up to the normal standard.

(2) Keep the field clean with aseptic washes before the operation.

(3) Operate in the sixth to the eighth week.

(4) Do not slash with scissors, but cut and trim carefully with a knife.

(5) Free the upper lip thoroughly from the jaw.

(6) Anchor the nares with shotted wire.

(7) Use no pins or heavy outside sutures.

(8) Use *crêpe lisse*, not surgeon's plaster.

(9) Leave the heavy inside stitches for six days.

(10) After operation give especial attention to the care of the bowels and to proper feeding, as on this very often hangs the whole success of the operation.

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BITS OF MEDICAL FOLK-LORE.

BY G. W. MOOREHOUSE, M.D.,
House Officer, Massachusetts General Hospital, Boston.

This article gathers together for preservation certain remnants of the thought of the past, as found in the folk-lore or popular superstitions of the present. The subject-matter affords a sufficient reason for presenting it to a medical audience rather than to the more general one to which the enumerator of popular superstitions usually addresses himself.

About one-half the items relating to pregnancy and child-bed were collected by externes of the Boston Lying-in Hospital, the majority by the writer. The rest of these items as well as most of the miscellaneous superstitions are from the general collections of one of our best-known workers in American folk-lore.

There is a great difference between the mere repetition of a bit of folk-lore when circumstances recall it to the memory and action based upon a similar superstition. We might think that belief in witchcraft had passed away long since if it were not for our daily newspapers which tell us every now and then of the persecution or actual murder of one who has in some way gained the unsavory reputation of being a witch. In this article the writer has attempted to show that in some cases enough value is still accorded to folk remedies to ensure their occasional use.

CHIEFLY OF PREGNANCY AND CHILD-BED.

A child was born to a Russian Jew, and upon the delivery of the after-birth a neighbor of the same race wished to have it. After much questioning the externe learned that she had heard that (1) to eat a placenta is a sure cure for sterility and proposed to make an experiment in therapeutics.

2. Often in pregnancy the woman is very well while the husband looks very wretched. "No," said the Irish mother of a large family, "I never feel better in my life than when I am in a family-way, for my old man, you know, he takes all my sickness." In a little higher grade of society two women were gossiping. Said one, "Have you noticed Mr. So-and-so, how miserable he looks this summer?" "Yes," said the other, "don't you know the reason? Why, his wife is pregnant."

3. If a pregnant woman stir boiling soap it will not "come" (Md.).

4. If when a woman is pregnant she touch a piece of meat it will spoil within an hour. It is said that butchers of the Isle of Jersey will not allow women to handle their meat for fear of loss from this cause.

5. Pregnant women must avoid the smell of paint, else they'll miscarry (Mass.).

6. A mole on the left breast is a sign of easy child-birth (Nova Scotia).

7. If a pregnant woman steps on a tangled rope or string, the child will have the cord around its neck (Russian Jew).

8. If a woman in labor puts her hands above her head, it is said she thus interferes with the descent of the child (Russian Jew).

9. By an examination of the placenta held in the hand it is possible to tell how many children the woman is to have (Russian Jew). An attempt to secure further information on this interesting subject elicited only the reply, that "the doctor always knows," the rebuke being doubtless unintentional.

10. White streaks in the cord show the number of babies (Russian Jew).

11. If the mother has a good deal of heart-burn during her pregnancy the infant will have a good deal of hair on its head (Nova Scotia).

12. A "longing," the abnormal craving of a pregnant woman for some special article of diet, should be gratified, otherwise the child will be marked by a picture of the desired food (common in England and America).

13. Should a pregnant woman be hit by any object thrown at her the baby will have a birth-mark on a corresponding spot (Russian Jew). The authority for this item told of the regret expressed by a neighbor who had accidentally hit her with some article of wearing apparel while sorting clothes for the wash.

14. If anything occurs during pregnancy to startle the mother, and so, according to popular belief, to "mark" the child, the mark may be transferred from visible parts, for example, the face, to invisible, for example, the leg, by the mother quickly rubbing that part of her own anatomy to which she wants the mark transferred and wishing it there (Ireland).

15. The first four months of pregnancy are those of greatest danger to the child (Russian Jew).

16. During the first four months of pregnancy a woman who sees any animal may give birth to that animal, that is, to a monster. To avoid so unpleasant an accident she should gaze steadily at it until she becomes tired of looking, and all will be well (Russian Jew).

"A woman before her child is born must not look hard at any animal, for the child may be like it," says the American Indian, and illustrates by examples.

17. If a mother during pregnancy is startled by a hare crossing her path, the child is liable to have a hare-lip (Ireland).

18. If a pregnant woman passes an enemy, and he

knows of her pregnancy, he may cause cleft-palate or hare-lip in the child by splitting a piece of wood or chopping up in a doorway with an axe (Russian Jew).

19. A pregnant woman helped her husband butcher his hogs, and when her child was born it had a pig's head (Mass.).

20. The placenta should be burned and not buried, for the greater safety of the woman in her convalescence (Irish).

21. A placenta should be buried not burned: it is bad for the woman to have it burned (Russian Jew).

22. An Irish woman living near Boston Harbor asked that the placenta be thrown into the water, so that the child might never meet his death by drowning.

23. Do not comb a parturient patient's hair while she is in bed for fear of child-bed fever (Nova Scotia and New England).

24. A parturient patient drank the urine of her son, probably as a diuretic, a fact to the truth of which a physician bears testimony. This occurred in New Hampshire.

25. Cow-dung, fresh as possible, has been plastered on an inflamed breast, commonly known as "bealed breast," within twenty-five years in Cape Breton.

26. The belief that the possessor of a caul will not meet his death by drowning is probably known to all.

27. A child born with a caul is born to see sights and wonders (Nova Scotia).

28. When a child is born with a veil (caul) it should be removed downward, for if it be removed from below upward the eyes will be opened to foresee death, sickness and other ills (N. Y.).

29. If a baby grips hard with its hands it is not silly (Nova Scotia).

30. If a baby can sneeze it is not an idiot (Nova Scotia).

31. If a pregnant woman kicks a cat the baby will have milk in its breasts, that is, mastitis (Russian Jew). The Irish call this witch's milk.

32. If a baby has jaundice some object of gold should be used about its dress and it will recover (Italian).

33. Tie a new coin in the baby's belly-band and the cord will drop off clean (Italian).

34. It is a common belief that a wet-nurse may transmit her disposition or features to the bantling (New England).

35. An unsatisfied craving, a "longing," which, as we have seen before, may give the child a birth-mark, will cause it to have through life the habit of running his tongue out (Ireland).

MISCELLANEOUS.

36. To wash the face with a diaper on which a new-born babe has urinated will prevent or cure freckles (U. S. and Canada).

37. Urine is used as a cure for chapped hands (New England and Canada).

38. Boys urinate on their legs before going in swimming to prevent cramps (common in U. S.).

39. Human urine has been used in bronchial affections (New Brunswick).

40. The patient's own urine was administered in Staffordshire, Eng., for gravel.

41. Within recent years a woman in England has been given her own urine after a severe illness to prevent "fits."

42. Menstrual napkins should not be burned.

43. For scanty menstrual flow let a young woman drink menstrual blood of a woman who flows freely, mixed with urine of a man (Pa.).

44. "Rabbit tea" (made of rabbit dung dried and steeped) is given for interrupted menstruation. Patient is not to know the nature of the remedy (Utah).

45. To cure warts on a man rub them with menstrual blood (Italian).

46. If a woman take salt fish from the keg during menstruation the remaining fish will soon spoil (N. Y.).

47. There seems to be a popular belief in a climacteric for men. It manifests itself in nervous and other disturbances, and is supposed to occur at the time of the corresponding change in his wife's life. It does not imply in his case a loss of the power of procreation.

48. Water standing in the depression of cow-dung was formerly recommended as a certain cure for pulmonary consumption (N. Y.).

49. The sheep-dung tea cure for measles is said to be extensively used in New England.

50. A physician in Indiana reports that goose-manure is supposed by some in his vicinity to cure pimples on the face.

51. A poultice of fresh, warm cow-dung is used for rheumatism (N. Y.).

52. Oil tried from the penis of a hog and applied to the loins of a child suffering from weakness of the kidneys or bladder cures the disease (Nova Scotia).

53. To remove tumors from the eyes (eyelids) rub about the lids with the hands of a corpse (N. B.).

54. It is not well to sleep with the hands above the head, for by so doing one draws the blood to the head (Russian Jew).

Clinical Department.

A CASE OF RESTORATION OF THE FEMALE URETHRA AND CLOSURE OF THE BLADDER, AFTER EXTENSIVE LACERATION.[1]

BY M. H. RICHARDSON, M.D.

In the following case Thiersch's principle used in restoring the urethra in cases of epi- and hypo-spadias in the male, was successfully employed. This principle, as applied to the female urethra and bladder, consists in the use of extensive flaps superimposed in such a manner that the internal surface of the urethra and bladder is supplied by vaginal mucous membrane; at the same time the denuded vaginal surface is restored by shifting a flap sufficiently large to cover it. The procedure will, I think, be made clear by reference to the accompanying diagrams.

The patient, Mrs. M., aged twenty-six, had had, in May, 1897, a very difficult labor. The attending physician found a deformity of the bladder and an exaggerated hymen. There had never been any penetration. With the patient on the table in the dorsal position, no opening into the hymen could be found. The child was delivered with difficulty and by the use of instruments.

After confinement there was inability to control the bladder.

On examination I found an entire absence of the urethra. There was in its place an irregular line of everted mucous membrane extending a half inch back into the base of the bladder.

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[1] Read before the Obstetrical Society of Boston, November 16, 1897.

A flap was first made to the patient's right of the fissure and corresponding to it in length. The base of this flap was the line of everted mucous membrane. Turned toward the left, this flap presented its mucous surface upward, and was destined to be the floor of the urethra (see Figs. I and 2). The second flap, on the patient's left, was a little longer than the first, and began at the left edge of the everted urethra. This flap had its base about half an inch to the left of the urethra (Figs. I and 2). A catheter was next placed in the urethra, and over it the first flap was spread. This flap was fastened to the denuded surface of the second flap by four silk sutures (Fig. 2). The catheter was thus covered in by vaginal mucous membrane. The second flap was then brought over the first and to the right, where it was fastened by numerous fine silk stitches (Fig. 3).

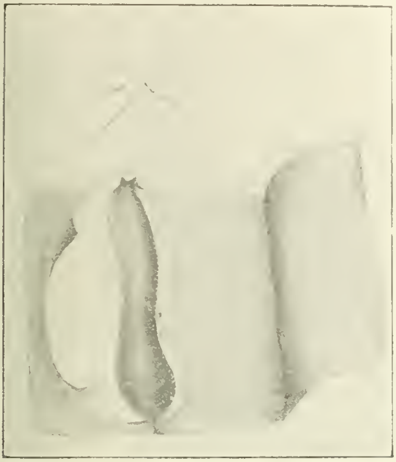

Fig. 1

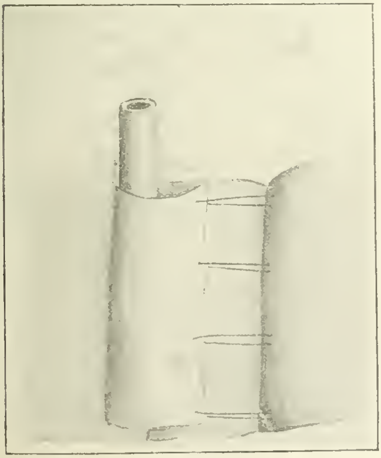

Fig. 2.

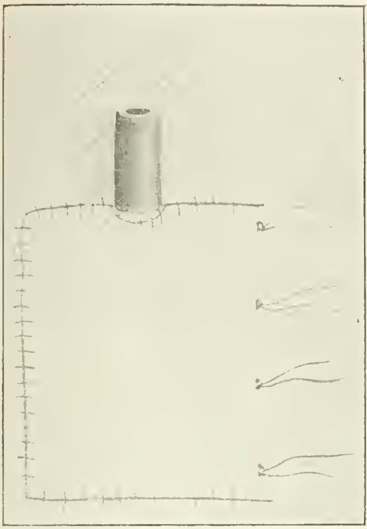

Fig. 3.

It will be seen that mucous surface was brought to mucous surface, and raw surface to raw surface. Immediate union resulted without leakage. The patient not only had a tight bladder, but she could control it. Since operation there has been no loss of control, but micturition is frequent, especially when she is erect.

This method of closing the fistula presents a double chance for success; for if the mucous approximation is imperfect, as it is likely to be from the impossibility of using sutures, the denuded surfaces, opposed to each other over comparatively broad areas, can be most closely approximated and accurately sutured.

I have used the method very successfully in restoring the male urethra.[2] The difficulties in applying it to the female are somewhat greater, for in addition to the restoration of the canal the power of controlling the bladder through the sphincter vesicæ is essential. In this case the functions of this muscle were completely restored.

Missed Everything Except Vaccination. — An old Georgia darkey with his arm in a sling, was talking to another on a West End car yesterday. "Yes, suh!" he said with emphasis. "I gone up now, fur sho'! You see dis arm in de sling, don't you?" "Yes." "Well, suh," the old man continued by way of explanation, "I'll be eighty years old next harvest; I done see lots er trouble in my day, but by de grace er God I miss de Ku-Klux, I miss de Viglance Committee, I miss de White Caps, en I miss de Regulators, but now in my old age, please God, waxinators kotched en cut me." — *Atlanta Constitution.*

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[2] See paper on this subject by Dr. H. A. Lothrop, Boston Medical and Surgical Journal for June 3, 1897.

Medical Progress.

REPORT ON PATHOLOGY.

BY JAMES H. WRIGHT, M.D.,
Director of the Laboratory of the Massachusetts General Hospital; Instructor in Pathology, Harvard University Medical School.

THE POISON OF TETANUS.

F. Blumenthal[1] has prepared extracts from the spinal cord and other tissues in four cases of tetanus, and has injected these extracts into animals. These, from three of the cases, produced tetanic symptoms and death.

Summing up the results of all his experiments with materials from cases treated with or without antitoxin, the author concludes that in the organs of individuals dead of tetanus two different poisons are present, both of which are capable of producing tonic convulsions. One of these is identical with the poison contained in the filtrate of bouillon cultures of the tetanus bacillus (the so-called tetano-toxin). The other is the product of a combination between the tetano-toxin and the substance of the tissue cells, and may be called the "organ poison."

These two poisons show certain marked differences. The "organ poison" withstands high temperatures better than the tetano-toxin, and acts upon animals without the interval of incubation, which is so marked a property of the poison of the bouillon culture. Moreover, the tetanus antitoxin which neutralizes the tetano-toxin seems to have less effect upon the "organ poison." On this account, when large amounts of the latter are present in the body, the antitoxin fails of effect.

The author believes that the tetano-toxin, or uncombined bacillary poison, is neutralized by the antitoxin, and that the "organ poison" alone may be answerable for the death of the individual when antitoxin has been administered. He advances, in support of this observation, that in all his cases which were treated with antitoxin the blood was not poisonous for animals, while in the majority of cases which had received no antitoxin it was poisonous.

BACTERIA IN THE CIRCULATING BLOOD IN INFECTIOUS DISEASES.

Kühnau[2] has made an extensive series of cultures from the blood during life in a large number of cases of bacterial infection, including septic-pyemic processes, endocarditis, localized purulent inflammations, tubercular mixed infections, miliary tuberculosis, influenza, pneumonia and typhoid fever. The blood was obtained in all cases by puncture of veins, in the majority of cases the median vein being laid bare for this purpose. The vein was punctured with a sterilized canula, and the blood was collected in sterilized flasks containing 50 c. c, of sterile bouillon; 10 c. c. of blood was the quantity taken for examination. After mixing the blood and bouillon, a number of agar-plate cultures were made from the mixture.

The results for the various classes of cases may be summarized as follows:

Typhoid Fever. — 41 cases. These were all either in the stage of roseolar eruption or in the acme of the disease. In ten cases typhoid bacilli were demonstrated in the blood of the arm vein. The number of bacilli found was always small.

Septic-pyemic Conditions. — 23 cases. All of the gravest sort, of which 19 died. In only three of these 23 cases were bacteria found in the circulating blood, and these in small numbers. The streptococcus pyogenes and the staphylococcus pyogenes aureus were the organisms concerned. The blood was withdrawn in two of these cases shortly before death, in the third case during a chill. Earlier cultures were negative.

Ulcerative Endocarditis. — 12 cases. In all samples of blood were repeatedly withdrawn and tested, but in only one case, and this shortly before death, was the presence of bacteria demonstrated in the blood. The organism in this case was one of the pyogenic cocci.

Acute Rheumatism. — Sixty-seven cases were examined, but in only one case, which was complicated by a pleuritis, were bacteria found. This case showed infection with the staphylococcus pyogenes aureus.

Localized Inflammatory Processes, including meningitis, erysipelas, septic venous thrombosis, phlegmonous angina and various pus formations. Not one of these cases, all of which presented the signs of a grave toxemia, gave positive results.

Phthisis Pulmonum and *Miliary Tuberculosis.* — 12 cases. Among these were four with terminal miliary tuberculosis. All showed symptoms of secondary infections. The cultures in all these cases were negative. In but one case were tubercle bacilli demonstrated in the blood by animal inoculation.

Acute Croupous Pneumonia. — 9 cases. Three were fatal. But one case gave a positive result, and that near the death of the patient. Animal inoculations with the blood were followed by the characteristic septicemia produced by the pneumococcus in two of the cases. One of these was the case in which the pneumococcus had been found with the cultures.

Influenza. — 12 cases. In none was the influenza bacillus cultivated from the blood. There was hyperpyrexia and marked constitutional disturbance in all of the cases.

THE DIFFUSION OF BACTERIA IN CADAVERS.

The preceding investigation, as well as certain others, shows that the invasion of the blood intra-vitam by bacteria in infectious processes in demonstrable numbers is not the rule. On the other hand, it is a common observation at autopsies to find bacteria widely diffused throughout the blood and organs, sometimes in large numbers, not only in cases of fatal infectious disease, but in other cases as well. In well-defined infectious processes this phenomenon is believed to be sufficiently explained on the ground of an invasion of the blood shortly before death by the specific bacteria, and then post-mortem multiplication. In other cases, however, there may be little or no clinical evidence of infection, and yet the bacteriological examination of the viscera may show the presence of more or less numerous bacteria. The bacteria found in these cases are of various species, and include the pyogenic cocci; but the organism which is most commonly found is the bacillus coli communis. The clinical significance of these post-mortem findings is very doubtful and their causes have never been satisfactorily determined. It has seemed probable that these bacteria may under certain conditions rapidly invade the tissues after death from the bronchi and intestinal canal, and that they are, so to speak, the advance guard of the army of putrefaction.

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[1] Zeitschr. f. klin. Med., Bd. xxxii, 1897.

[2] Zeitschr. f. Hygiene u. Infectionskrankh., Bd. xxv, 1897.

A. Hauser[3] has studied the question of such purely post-mortem invasion experimentally. He injected bouillon cultures of various well-known bacteria into the trachea and into the peritoneal cavity of human and animal cadavers, in the case of the latter in other situations also, and then made bacteriological examinations of various organs and fluids after different lengths of time. The blood of the heart, the pericardium, liver, bile, kidneys and pleural or peritoneal cavities were examined. The animal cadavers were examined up to twenty-four hours after the injection, the human cadavers up to fifty-two hours.

He found that invasion by the injected bacteria of some of the situations above mentioned was frequent — positive results being obtained in 29 out of 31 animal and in 12 out of 18 human cadavers. In the case of the animals the places invaded by the bacteria depended to a considerable extent upon the position of the body. Thus, if after peritoneal injection the body was suspended by the hind legs, the bacteria were almost always to be found in the liver, pleura and blood of the heart.

GENERAL LYMPHADENOMATOSIS OF BONES.

F. P. Weber[4] reports an unusual case in which "all the ribs, the vertebral column, the clavicles and the skull were found to be the site of a very vascular pulpy neoplasm, growing from the interior of the bone outwards. The ribs were all converted into delicate tubes formed of periosteum with only a thin imperfect shell of bone." They were easily fractured and many old fractures were indicated by callus. Nodular enlargements were also present from distention by the growth. A similar replacement and softening of the bony structure of the vertebral column and sternum was present. In the skull and in the clavicles the condition was less marked. The other bones were not examined. Microscopically the neoplasm was found "to consist of small mononuclear round cells, with none or scarcely any substance between them. Interspersed amongst the cells are small blood-vessels with swollen looking, almost hyaline walls."

There were no metastases of the growth except in the cervical lymph-glands. The author considers that the term "sarcoma," or "lympho-sarcoma," is unsuitable for the case on account of the absence of any infiltration of the tissues adjacent to the bones and the comparatively insignificant extent of the metastasis.

Cases somewhat similar to this one have been described and denominated "multiple myeloma," but these cases have not always presented the same histological appearances.

It is greatly to be regretted that no microscopical examination of the blood was made in this case because of its possible connection with some clinical form of blood disease. During life the individual complained of various rheumatic pains and presented a considerable kyphosis, which was progressive.

CEREBRAL INFECTION WITH THE BACILLUS OF INFLUENZA.

The invasion of the cerebral tissues by the influenza bacillus has been regarded as of doubtful occurrence, the cases of such invasion reported not being accepted as demonstrative.

Pfuhl,[5] who has published a number of such cases, has recently contributed three more to the list.

In two of these cases the only definite anatomical change recognized macroscopically was an increase of the cerebro-spinal fluid, which was somewhat blood-tinged. The other case presented the appearances of purulent lepto-meningitis. The bacillus of influenza was cultivated from the cerebro-spinal fluid, and its identity apparently well-established in two of the cases, while in the other case a bacillus, resembling that organism in morphology, was found microscopically, but not by cultures, in the cerebro-spinal fluid and pleural effusion.

One of these cases was of peculiar interest, in that the microscopical examination of the various viscera as well as of the tissue of the brain and spinal cord showed the presence in all of these tissues of numerous small bacilli like influenza bacilli in morphology.

The case was a rapidly fatal influenza with cholera-like symptoms.

In the microscopical sections of the brain, lymph spaces, blood capillaries, and small arteries were found containing these bacilli, in some instances in clumps and masses. They were also seen inside the large nerve cells, sometimes in considerable numbers and also scattered throughout the tissue. The spinal cord showed a somewhat similar condition. No reaction or inflammatory change was evident in the tissue. The small intestine showed some loss of epithelium, desquamation of the cells of the glands and edema of the submucosa. On the surface of the mucosa the influenza-like bacilli were present in enormous numbers. They were also observed in glands, in the lymph vessels and scattered through the submucosa. The bacilli were also found more or less numerously in the liver, kidney, pancreas and axillary lymphatic gland. On the pneumonic exudate of the lungs they were also numerous as well as in the interstitial tissue and capillaries of the organs.

It is unfortunate that the identity of these bacilli, found in such numbers microscopically in the various tissues, was not established by cultures. As the case stands it is by no means certain that the author had influenza bacilli before him, but the observations are suggestive.

THE NATURE OF THE FLAGELLATE FORMS OF THE PARASITE OF MALARIAL FEVER.

In the blood of birds, parasites similar to the parasite of malarial fever are sometimes found. Opie[6] about a year ago called attention to the fact that in the hematozoan infection of crows, two forms of the adult organism could be distinguished, and suggested that one of these forms only might be capable of developing into the flagellate form of the parasite.

MacCallum[7] has more recently found that Opie's suggestion is the fact, and has further found that the flagella of the parasite may separate themselves from it and, as small motile filaments, may be observed to wriggle about the other adult forms. One only of these motile flagella penetrates the body of the parasite, which then undergoes certain changes in shape and appearance to become transformed into another form of the organism.

The occurrence of the flagellated forms of the malarial parasite of course suggests a similar function for these flagella and MacCallum has been able to demonstrate that such is the truth. From his observations of the blood in a case of malarial infection of the æstivo-autumnal type, in which there were a great number of so-called "crescents," he writes as follows:

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[3] Zeitschr. f. Heilkunde, Bd. xviii, 1897.
[4] Journal of Pathology and Bacteriology, January, 1898.
[5] Zeitsche. f. Hygiene u. Infectionskrankh., Bd. xxvi, 1897.
[6] Bulletin of the Johns Hopkins Hospital, vol. viii, March, 1897.
[7] Loc. cit., November, 1897.

"These (the crescents) in a freshly-made slide of blood, with very few exceptions, retained their crescentic shape for only a few minutes. They soon drew themselves up, thus straightening out the curves of the crescent, while shortening themselves into the well-known ovoid form.

"After the lapse of ten or twelve minutes, most of them were quite round and extra corpuscular, the 'bib' lying beside them as a delicate circle or shadow of the red corpuscle. After twenty to twenty-five minutes certain ones of these spherical forms became flagellated; others, and especially those in which the pigment formed a definite ring and was not diffused throughout the organism, remained quiet and did not become flagellated. In a field where an example of each form could be watched the flagella broke from the flagellated form and struggled about among the corpuscles, finally approaching the quiet spherical form; one of these entered, agitating the pigment greatly, sometimes spinning the ring about. The rest were refused admission, but swarmed about, beating their heads against the wall of the organism. This occurred after thirty-five to forty-five minutes."

After this the organism became somewhat larger with long movements in its interior and no further changes were observed.

MacCallum regards this process which he has observed in both species of hemotozoa as one of fertilization and the motile flagella as a form of spermatozoa.

THE STREPTOCOCCI ERYSIPELATIS AND PYOGENES.

Wm. Bullock,[8] working in the British Institute of Preventive Medicine, has recently tested this question from another point of view. He immunized a horse against the streptococcus from a case of erysipelas, and then inoculated the animal with the streptococci from an abscess. The horse showed himself immune to this streptococcus also, thus affording an additional confirmation of the view that these two streptococci are of one and the same species, that is, identical.

THE BACTERIOLOGY OF GONORRHEA.

Alex. G. R. Foulerton[9] has made a study of the bacterial flora of gonorrheal pus. He has found that the cocci which occur most frequently along with the gonococcus is the staphylococcus pyogenes aureus and a coccus growing in white colonies which he names the *diplococcus urethræ communis*. The presence of other bacteria in gonorrheal pus beside the gonococcus was noted in three cases which were examined within twenty-four hours after the first appearance of the discharge. If these other bacteria were present in any considerable number in these very fresh cases the observation is not in harmony with those of other bacteriologists. The relative numbers of these organisms is not stated by the author.

The reaction of the purulent discharge from the urethra was tested in 27 cases. In 19 the reaction was alkaline, in six acid and in two neutral.

As a culture medium for the gonococcus, Foulerton recommends small agar plates smeared with a drop of blood from the finger. The blood can be readily obtained in sterile condition by simple methods of disinfection and cleansing of the skin. On this culture medium the author thinks the gonococcus manifests a distinct tendency to outgrow other bacteriæ during the first twenty-four hours.

A CASE OF PSEUDO-HERMAPHRODITISMUS MASCULINUS INTERNUS.

H. Stroebe[10] found this malformation at the autopsy of an individual of masculine appearances. The external genitalia were normal except that the scrotum contained no testes. The internal examination showed an elongated uterus-like body extending upward from the posterior aspect of the prostate and lying posterior to the bladder and anterior to the rectum. This "uterus" had two long Fallopian tubes originating on either side of the fundus in the usual manner and extending laterally in the folds of a broad ligament to the sides of the pelvis. These Fallopian tubes ended blindly, having no fimbriated extremities. In the position of the ovaries were two ovoid flattened bodies which microscopical examination showed to be two atrophied testes. Each of these had a more or less rudimentary epididymus from which began a very tortuous vas deferens running near the Fallopian tube to the "uterus." The uterus-like body was joined to the posterior portion of the prostate and contained a canal or cavity along its entire length, which opened into, or became continuous with, a normal *sinus pocularis* in the prostatic urethra. The colliculus seminalis was well-developed, and the prostate gland not specially remarkable. The lumen of the canal of the "uterus" in the superior portion of the organ resembled in shape that of the normal uterus, and was continuous with the lumina of the Fallopian tubes. About midway of the organ this canal narrowed, and then widened to again become narrow, with a diameter of a few millimetres. In the inferior portion of this "uterus" a part of the vasa deferentia, the rudiments of the vesiculæ seminales and the ducti ejaculatorii are included in its wall. The last-named opened on the colliculus seminalis. This inferior portion is regarded as representing a rudimentary vagina, while only the superior portion represents the uterus.

The case shows very clearly that the sinus pocularis is rightly to be regarded as the homologue of the uterus and vagina, as embryology teaches.

INFECTION WITH THE TYPHOID BACILLUS WITHOUT TYPHOIDAL LESIONS.

H. Chiari and E. Kraus[11] report five cases of infection with the typhoid bacillus, in which the post-mortem examination failed to reveal any lesions which were indicative of typhoid fever. These cases clinically were diagnosed typhoid fever, the Widal serum reaction being positive in each case. In four of them there was extensive tuberculosis of the lungs, larynx and intestine. In the fifth case there was pyemia.

Typical typhoid bacilli were demonstrated in the bile of two and in the urine of one of these cases. In the remaining two cases the bacteriological proof of the identity of the bacilli found microscopically in the mesenteric glands (and in the spleen also of one of them) is not complete, but that they were typhoid bacilli seems possible.

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[8] Transactions of the British Institute of Preventive Medicine, First Series, 1897.

[9] Loc. cit.

[10] Beiträge g. path. Anat. u. Allgem. Path., Bd. xxii, 1897.

[11] Zeitschr. f. Heilkunde, Bd. xviii, 1897.

The authors regard these cases as "typhoid septisemia," and emphasize the necessity of bacteriological examinations at autopsies on cases which have given a positive Widal reaction during life, but in which the anatomical signs of typhoid fever are lacking. They consider that certain post-mortem observations which have seemed to discredit the clinical significance of the Widal reaction are not convincing, because they were not supplemented by bacteriological examination.

Simon Flexner and N. McL. Harris have also recently reported a case of typhoid infection without intestinal lesions. In this case typhoid bacilli were cultivated from the lungs, liver and spleen.

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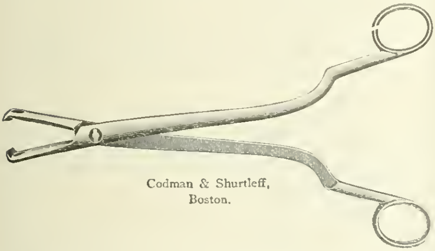
New Instruments.

A UTERINE CUTTING FORCEPS.[1]

BY W. L. BURRAGE, M.D.

The instrument figured in the accompanying cut is intended for the removal of polypi situated at the fundus uteri, and for smoothing rough surfaces in the same situation left after the morcellation of submucous fibroids. It was designed to fill a place that is not taken by the long uterine scissors, the vulsellum forceps, the placenta forceps, the long hemostatic forceps with serrated blades or the Emmet curette forceps or the curette. It is a powerful forceps made after the fashion of the long uterine scissors and the post-nasal cutting forceps, having the cutting blades at the end only. These blades are three-eighths of an inch wide, their corners being ground off so as to protect the guiding finger of the operator. They will cut only on a convex surface and therefore there is no danger of perforating the uterus. A fenestrum in each blade behind the cutting surface prevents the forceps from becoming clogged by the pieces of tissue as they are removed. The extreme length of the instrument is nine and a quarter inches, and there is a French lock two inches from the cutting edges. It is slender enough to work well through a moderately dilated cervix and yet it will cut cleanly through the toughest fibrous tissue.



In operation it bites off the tissue, leaving a smooth surface behind: and, by virtue of the pinching that it gives the tissues, it lessens the tendency to hemorrhage. Used as a vulsellum in larger growths, especially the more friable ones, the blades being broad, sink into the tissue and do not tear through as do the teeth of the ordinary vulsellum.

I have used the forceps on several cases and its successful work has more than equalled my expectations.

The instrument was made for me by Codman & Shurtleff, of Boston.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Regular Meeting, November 16, 1897.

Dr. G. W. Moorehouse read, by invitation, a paper entitled

BITS OF MEDICAL FOLK-LORE.[1]

Dr. C. W. Townsend referred to a case where the husband of a colored woman at the Boston Lying-in Hospital demanded from the house-officer the caul with which the child had been born. She refused to believe that such a valuable safeguard against drowning had not been saved.

Dr. W. L. Burrage showed

A UTERINE CUTTING FORCEPS FOR ENUCLEATION OF FIBROIDS,[2]

and demonstrated its use.

Dr. M. H. Richardson reported

A CASE OF VESICO-VAGINAL FISTULA.

Dr. F. B. Harrington said that there were two important points in the operation, one to denude enough, another to use silver wire.

Dr. A. Worcester said that silver wire was justified by the germicidal power of the silver salts formed.

Dr. C. W. Townsend reported orally

A FATAL CASE OF HEMORRHAGE UNDER THE SCALP IN A NEW-BORN INFANT,

which occurred during his service last September at the Boston Lying-in Hospital. After a short first stage of four and a half hours and a second stage of two hours and fifteen minutes the child was delivered with forceps. Lack of progress in the second stage and what was thought to be a large caput were the only noticeable things. Forceps extraction was rather difficult, but the application of the blades over the ears was good and there was no apparent damage done. The supposed caput instead of decreasing, became larger and was found to be soft and fluctuating, and was due evidently to an effusion of blood beneath the scalp. On the third day it was still larger, extending over the whole cranium. The infant was pale with a subnormal temperature of 96.8° in the rectum. On the seventh day the tumor was still increasing, extending well forward on the frontal bones and laterally down the sides of the skull. Death ensued on the tenth day.

The autopsy showed the body to be much blanched. A firm blood-clot extended under the scalp and above the periosteum (thus differing from a cephalhematoma) over the entire cranium, three-quarters of an inch thick in places. This clot reached from the foramen magnum behind to the middle of the frontal bones anteriorly and down to the ears on both sides. The infant had evidently bled to death under its scalp.

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[1] Shown before the Obstetrical Society of Boston, November 16, 1897.

[1] See page 201 of the Journal.

[2] See page 207 of the Journal.

There were no hemorrhages elsewhere. At the autopsy it was impossible to find the source of the hemorrhage, in fact there seemed to be a number of points of origin.

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ASSOCIATION OF AMERICAN ANATOMISTS.

Upon the invitation of Cornell University, the Association met at Ithaca, N. Y., December 28–30, 1897. Morning and afternoon sessions were held on each of the three days excepting Wednesday, when all the affiliated societies met in the afternoon with the American Society of Naturalists. Notwithstanding the small attendance, the sessions were fully occupied with reports, papers and discussions, and several papers were read by title for lack of time.

After a brief introductory by the President, Dr. Frank Baker, Dr. B. G. Wilder read an obituary notice of Dr. Harrison Allen, one of the founders and presidents of the Association.

The report of the Secretary-Treasurer, Dr. Lamb, showed that there were 105 active and four honorary members. Dr. Allen and Dr. Wm. Laurence Dana (of Portland, Me.) had died, and Dr. P. J. McCourt, of New York City, had resigned. Beginning with the present year the annual dues are three dollars.

The circular and blanks in reference to the anatomical peculiarities of the negro race were ordered to be modified and copies sent out for report of cases.

The Association adopted the report of the majority of the Committee on Anatomical Nomenclature, and ordered it to be published and distributed as soon as practicable, accompanied by the objections of the minority of the committee, and comments thereon by the secretary of the committee. Of the several terms recommended, more than 100 were identical with those adopted in 1895 by the Anatomische Gesellschaft.

The following papers were read and discussed; they were illustrated by specimens, photographs and diagrams:

Dr. P. A. Fish, Ithaca, N. Y.: "A Fluid for the Retention of the Natural Colors of Anatomical Specimens," and "Mummification of Small Anatomical Specimens."

Dr. George S. Huntington, New York City: "Comparative Anatomy and Embryology as Aids to the Teaching of Human Anatomy in the Medical Course."

Dr. Wilder: "An Adult and Healthy Living Cat, Lacking the Left Arm, excepting the Scapula, and Having the Heart apparently at the Epigastrium."

Dr. Woods Hutchinson, Buffalo, N. Y.: "Relative Diameters of the Human Thorax."

Dr. D. S. Lamb, Washington, D. C.: "Pre Columbian Syphilis."

Mr. Charles H. Ward, Rochester, N. Y.: "A Cranio-mandibular Index."

Prof. Howard Ayers, University of Missouri: "The Membrana Basilaris, Membrana Tectoria, and Nerve Endings in the Human Ear." Read by Dr. Hopkins.

Dr. Wilder: "Certain Resemblances and Peculiarities of the Human Brain."

Dr. B B. Stroud, Ithaca, N. Y.: "The Ape Cerebellum."

Dr. Fish: "The Brain of the Fur-Seal, *Callorhinus ursinus.*"

Dr. Huntington: "The Eparterial Bronchial System of Mammalia."

Dr. J. A. Blake, New York City: "The Relation of the Bronchi to the Thoracic Wall."

Dr. Thomas Dwight, Boston, Mass.: "The Distribution of the Superior Mesenteric Artery." Read by Dr. Lamb.

Dr. D. W. Montgomery, University of California, San Francisco: "Sebaceous Glands in the Mucous Membrane of the Mouth." Read by Dr. Lamb.

Dr. Stroud: "Notes on the Appendix."

Prof. S. H. Gage, Ithaca, N. Y.: "On the Relation of the Ureters in the Cat to the Great Veins; with Variations."

Dr. Wilder: "A Number of Specimens of Either Unusual or Specially Instructive Character."

Mr. H. A. Surface, Fellow in Cornell University: "Notes on the Fish Fauna of Cayuga Lake."

The following papers were read by title:

Prof. George A. Dorsey, Chicago: "Description of Two Koutenay Skeletons," and "Two Examples of Unusual Ossification of the First Costal Cartilages."

Dr. E. R. Hodge, Washington, D. C.: "Relation of Sex to the Size of the Articular Surfaces of the Long Bones."

Dr. J. T. Duncan, Toronto, Can.: "Anus Vulvalis."

Dr. Woods Hutchinson: "A Skin Heart?"

The following officers were elected for the ensuing term: Dr. B. G. Wilder, Ithaca, N. Y., President; Dr. George A. Piersol, Philadelphia, First Vice-President; Dr. William Keiller, Galveston, Texas, Second Vice-President; Dr. D. S. Lamb, Washington, D. C., Secretary and Treasurer.

Dr. F. J. Brockway, of New York City, Delegate, and Dr. R. W. Shufeldt, of Washington, Alternate, to Executive Committee of Congress of American Physicians and Surgeons.

Dr. F. J. Shepherd, of Montreal, Can., Member of the Executive Committee of the Association, in place of Dr. Huntington, term expired.

The following candidates were elected active members of the Association:

1. Frank Irving Brown, A.M., M.D., of South Portland, Me., Instructor of Anatomy, Portland School for Medical Instruction.
2. George Amos Dorsey, A.B., Ph.D., Acting Curator of Anthropology, Field Columbian Museum, Chicago, Ill.
3. Grant Sherman Hopkins, D.Sc., Assistant Professor of Anatomy, Cornell University.
4. G. Carl Huber, M.D., Assistant Professor of Histology, University of Michigan.
5. A. T. Kerr, M.D., Acting Professor of Anatomy, Medical Department, University of Buffalo.
6. Alfred King, A.B., M.D., Demonstrator of Anatomy, Bowdoin College.
7. Edward James McDonough, A.B., M.D., Demonstrator of Histology, Bowdoin College.
8. John Anderson Springle, M.D., C.M., Lecturer on Anatomy, McGill University.
9. Robert J. Terry, M.D., Demonstrator of Anatomy, Missouri Medical College, St. Louis.
10. Prof. Albert H. Tuttle, D.Sc., University of Virginia.

The following eminent anatomists of the Old World were elected honorary members:

Dr. Mathias Duval, Paris; Dr. Carl Gegenbaur, Heidelberg; Dr. Wilhelm His, Leipzig; Dr. Albert von Kölliker, Würzburg; Dr. Alexander Macalister, Cambridge; Dr. L. Ranvier, Paris.

It is understood that the next meeting will be held in New York City, in the Christmas holidays, in conjunction with the Society of Naturalists and other affiliated Societies.

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Recent Literature.

The American Year-Book of Medicine and Surgery. Being a Yearly Digest of Scientific Progress and Authoritative Opinion in All Branches of Medicine and Surgery, drawn from Journals, Monographs and Text-Books of the Leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, by eminent American specialists and teachers. Under the general editorial charge of George M. Gould, M.D. Philadelphia: W. B. Saunders. 1898.

The American Year-Book of Medicine and Surgery for 1898 is welcome! It is, as hitherto, a royal octavo, of the same size as the American Text-Book Series from the same publishers, of about 1200 pages.

What we have said of its predecessors we repeat of this issue with no less emphasis. The aim of the editor has been well carried out, and the Year-Book should find a place on the shelves of medical practitioners.

American Text-Book of Applied Therapeutics. For the use of Practitioners and Students. Edited by J. C. Wilson, M.D., etc., assisted by Augustus A. Eshner, M.D., etc. Philadelphia: W. B. Saunders. 1897.

In the preparation of this royal octavo of 1326 pages the editors have enjoyed the co-operation of a large number of widely known and distinguished collaborators — all Americans with exception of Laveran, of Paris, who contributed the chapter on Malarial Fever, and Beavan Rake, of Trinidad, who wrote the chapter on Leprosy. The object of the editors has been to indicate the course of treatment to be applied at the bedside, to make the book clinical and practical.

The important article on Typhoid Fever is by the editor, Dr. J. C. Wilson, who warmly advocates Braud's cold-bath treatment. The scope of the work is a broad one and includes chapters on diseases of the brain and mind, on diseases of the skin and its appendages, and on pregnancy and its disorders; this last chapter is by the late Dr. Theophilus Parvin.

This text-book of Applied Therapeutics can be recommended to the practitioner.

A Text-book on Mental Diseases. For the Use of Students and Practitioners of Medicine. By Theodore H. Kellogg, A.M., M.D. Pp. 775. Wood & Co. 1897.

This is the first work on mental diseases by an American author which can properly be called a systematic treatise, and, with the exception of Stearns's Clinical Lectures, it is the only text-book on the subject from the pen of an asylum superintendent in this country.

While its bulk may appall the medical student in whose curriculum the study of disorders of the supreme organ of the body is a minor requirement, he — as well as the general physician — may go to it confident of finding the information he seeks on any practical point whatever in the domain of mental medicine, clearly and fully given. For the practised alienist it will prove a complete "up-to-date" book of reference; and while he will discover few new truths or original views, he is sure to be pleased with the author's painstaking thoroughness and sensible opinions in every direction.

The classification is simple and of the pathologico-symptomatic variety; and, unlike many others, it is not likely to confuse the student. On the ground that "words . . . should not be changed without good reason when they have once been accepted as technical labels in special branches of science," few new terms or varieties of diseases are introduced — a welcome novelty in a new work on insanity. Among the few that of "abulic insanity" as a separate form seems a most suitable classification, properly designating and grouping as it does all the myriad-named "phobias," obsessions and impulses of the order of *folie du doute*, etc., under an appropriate head.

In the chapter on statistics, several interesting points are brought out. The author's estimate of the average results to be anticipated in mental disorders is based upon the statistics of a large experience in private practice as well as from hospital records. In consequence, he finds, as might be expected, a considerably larger proportion of permanent recoveries than merely hospital statistics — the only ones heretofore available — have led us to believe possible. Also, the average age at which first attacks occur is shown by the use of a vast number of cases to be rather lower than appears from the usual computations from small numbers of patients. The invariable obstacle to investigations on the tendency to insanity at certain ages we have never seen mentioned before. We refer to the fact that we must first compare the number of cases occurring at those ages with the mean of the living population of like age at the time of the occurrence of the mental disease, and such complete information is not to be had.

The treatment of insanity is a prominent feature of the work; and there is an abundance of information and judicious advice on all the points of care and treatment of all kinds of patients and all forms of the disease, but we feel quite sure that few psychiatrists of practical experience will be found to have the same confidence as does the author in the real value of purely medicinal treatment.

Taken as a whole, this volume does great credit to its author and the profession in this country as a scientific, advanced and practical exposition of the present state of mental medicine in all its branches.

The Wound Dresser. A Series of Letters written from the Hospital in Washington during the War of the Rebellion. By Walt Whitman. Edited by Richard M. Bucke, M.D. Boston: Small, Maynard & Co. 1898.

It was the fortune of the "good gray poet" throughout three years of the Rebellion to minister to the daily wants of many of the thousands of sick and wounded soldiers in the Washington hospitals. With a kind and sympathetic soul, Whitman took delight in visiting the wards of the hospitals, and lending a helping hand till he himself broke down with illness. He says in one of his letters: "I believe that even the moving around among the men, or through the ward, of a hearty, healthy, clean, strong, generous-souled person, man or woman, full of humanity and love, sending out invisible, constant currents thereof, does immense good to the sick and wounded."

The first three chapters are entitled "The Great Army of the Wounded," "Life among Fifty Thousand Soldiers," and "Hospital Visits"; and the book closes with a series of letters to his family friends, mostly presenting pictures of hospital life.

The book will be welcomed, not only by every surgeon, hospital steward and nurse who served in those dark days of strife, but also by the general reader.

Traumatic Injuries of the Brain and its Membranes, with a Special Study of Pistol-Shot Wounds of the Head in their Medico-Legal and Surgical Relations. By Charles Phelps, M.D., Surgeon to Bellevue and St. Vincent Hospitals. Pp. 582, and 49 illustrations. New York: D. Appleton & Co. 1897.

One finds this an attractive volume. It is well arranged, with clear type and excellent illustrations. It has been written to supply a concise, systematic description of brain lesions due to violence. It is a book of value to surgeons; also to general practitioners, whose experience is less extended, and who occasionally have urgent need of knowledge derived from wide clinical observation.

The book is written from the knowledge obtained from the actual clinical observation of the author, who has studied his records of five hundred consecutive cases of recent occurrence with this end in view. They are in many instances complete in clinical and necroscopic details. They give a comprehensive history of intracranial traumatism, except as relates to secondary pyogenic infection of the brain substance. The description of cerebral abscess is supplied from Macewen's excellent work.[1] The book is so arranged that the condensed histories of 300 of the author's cases are placed separately in an appendix. This is an excellent plan, since it preserves the continuity of the text and places the original material at the disposal of independent observers in such a manner that it can be utilized.

The lesions resulting from pistol-shot wounds are separately described; and this part of the work has been supplemented by a series of experiments on the cadaver to obtain data to determine, for legal purposes, how far the appearances presented by the patient indicate the conditions under which the injury was inflicted. The writer thinks he has better defined not only the positive value, but also the limitation of the medical evidence in these cases, than has been heretofore possible; that one can more precisely estimate the true worth of expert testimony in these cases.

The book represents the results of extensive investition, and will repay a careful perusal. It contains much which is of interest and value. Its statistical tables are extremely interesting as well as instructive.

Atlas and Essentials of Gynecology. By Dr. Oscar Schaeffer. Pp. 288, with 173 colored plates and 54 woodcuts. New York: William Wood & Co. 1897.

This little book, one of the series of Wood's Medical Hand Atlases, consists essentially of a series of small but very beautiful plates, and is excellent in its way. The text amounts to but little more than an explanation of the illustrations.

THE BOSTON

Medical and Surgical Journal.

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283 Washington Street, Boston, Mass.

THE LAST PUBLIC HEALTH SUPPLEMENT OF THE LOCAL GOVERNMENT BOARD.

The Public Health Supplement of the Twenty-sixth Report of the Local Government Board of England follows closely after that of the twenty-fifth, and contains many important medical papers, of which we can summarize briefly only those which are of the highest general interest to medical men.

Under the topic "Vaccination," the Board has revised its circular order of 1887 so as to sanction the use of calf-lymph (which English physicians have been slow in endorsing) upon an equal footing with humanized lymph. This may be taken as one of the results of the Parliamentary investigation upon vaccination, which has dragged its "slow length along" for the past eight or nine years. Sir Richard Thorne and Dr. Copeman also present a joint report upon the methods adopted in Continental cities in the preparation, storage and distribution of calf-lymph, especially of that which is glycerinated, to which we refer more fully under another head.

There are two instructive reports upon the prevalence of typhoid fever in the two small communities of Bicester and Chichester, the former being apparently due to polluted water-supplies, and this had occurred after the town authorities had already been warned in 1890 that "a safe water-supply for the district is essential." The latter epidemic occurred in a town where the disease appeared to be due to the serious pollution of the underlying soil by cesspools, with which, to use the words of Dr. Bulstrode, "the whole gravel upon which the town is built is riddled." It was on this account that scientific investigations were then instituted by the Board with reference to the behavior of typhoid-fever bacilli in soil of various kinds, both infected and virgin soil being made the subject of experiment. The result of these investigations has been mainly to show that the bacillus multiplies rapidly in polluted soil, but very soon dies out in virgin soil.

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[1] History of Pyogenic Inflammation of the Brain and Spinal Cord.

Another valuable paper is that of Dr. Cantley's upon the behavior of the typhoid bacillus in milk, which constitutes a decided addition to the knowledge of the subject; but the conclusions arrived at are not of so decisive a character as those which relate to the subject of soil-pollution.

Other papers follow upon the microbes of vaccinia and variola and that of bubonic plague, cultures of the latter having been obtained from a native of India who died of the disease soon after arrival in London.

The Board also publishes an amendment of its memorandum of 1891 upon the "circumstances under which the closing of public elementary schools, or the exclusion therefrom of particular children may be required in order to prevent the spread of the disease." The occasion which gave rise to the change was the occurrence of certain epidemics of diphtheria, which were very similar in character to those which have caused considerable friction in Massachusetts in recent years between the educational and the sanitary authorities of towns.

It appears that the Board, in a recent letter of December 24, 1897, has stated its intention to investigate the circumstances attendant upon the recent serious epidemic at Maidstone.

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ENTEROPTOSIS.

For the diagnosis of gastroptosis Langerhans[1] introduces into the stomach a stomach tube with a soft-rubber bag or condom tied over the end, and then inflates the bag with a measured amount of air by means of a syringe of known capacity. In cases of pure gastroptosis distention first appears low down, sometimes at the level of the navel in the middle line, and sometimes a little to the left. This tumor soon appears as a transversely placed swelling, which extends from left to right at the level of the umbilicus, and from the left extremity of which a limb extends directly upward under the lower border of the thorax.

The most important etiological factor of enteroptosis is a weakening of the muscular tone of the abdominal wall, the muscles of which, in some manner not yet fully understood, maintain the intra-abdominal organs in their normal positions. This class comprises the post-puerperal enteroptoses of Landau. In contrast to this is a second form, comprising those cases associated with chlorosis — due either to the fact that the anemic supporting ligaments of the viscera stretch under their weight, that the slowly moving contents in the anemic intestinal canal drag unduly upon the mesentery, or to other unknown causes — the enteroptoses of Meinert. Langerhans believes also that "nervous dyspepsia" is a cause of gastroptosis, and recognizes a hereditary predisposition or inherited tendency to enteroptosis. He does not believe that the wearing of corsets possesses the importance as a cause of this disease which Meinert ascribed to it.

A moderate degree of enteroptosis, when it is consecutive upon frequent child-bearing, is physiological, and productive of no symptoms. Cases of "Meinert's enteroptosis" seldom fail to produce symptoms. The most frequent symptoms are those of aggravated dyspepsia, pain and demonstrable abnormalities of secretory and motor functions. The descent of the abdominal organs changes the mechanical relations so that lasting injuries result, sometimes due to pressure upon the unprotected kidneys, sometimes to increased demands upon the propulsive muscles of the stomach, always to stretching of the mesentery. By the cumulative effect of these numerous and continuous irritations, even though each in itself is comparatively slight, the central nervous system becomes exhausted, and according to individual predisposition, neurasthenia or hysteria with especial prominence of abdominal symptoms is the result. Enteroptosis is the commonest cause of intestinal neurasthenia and hysteria.

The application of a bandage is of advantage only in the post-puerperal type of cases; abdominal massage and rubbing with alcohol should also be ordered. Operation or mechanical measures for fixation of the kidneys have been found of advantage only in the extremely rare cases in which other organs are slightly or not at all involved. Thure Brandt's vibration over the kidneys, and faradization of the abdominal wall have proved of only slight advantage. Most important of all therapeutic measures are gymnastic movements, calculated to strengthen the abdominal muscles, such as bending or twisting the trunk in the sitting, lying and standing positions. Of the efficacy of yeast (Günzberg) Langerhans has not been convinced. Sesamol, as recommended by Van Noorden, has been almost universally well borne and under its administration increase in weight and improvement in the general condition have been noted. The condition of the nervous system demands most careful observation and treatment.

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MEDICAL NOTES.

An Operation on Sarah Bernhardt. — It is reported that Dr. Samuel Pozzi, of Paris, operated on February 16th upon Sarah Bernhardt, the French actress, for the removal of an intra-ligamentous cyst.

Professor von Esmarch, it is reported, has announced his intention to resign the chair of surgery at the University of Kiel at the end of the present semester. He is now over seventy-five years old, and was appointed professor of surgery at Kiel in 1857. He is also a surgeon-general in the German army.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the the week ending at noon, March 2, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 20, measles 42, typhoid fever 2.

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[1] Archiv. für Verdauungskrankheiten, Bd. iii, Hft. 3.

The Board of Health Condemns Buildings in Boston. — The Boston Board of Health is at present active in condemning buildings in the crowded districts which are in unfit sanitary condition for safe occupation.

An Epidemic of Cerebro-Spinal Meningitis.— There is an epidemic of cerebro-spinal meningitis in the small town of Uxbridge, in Worcester County, Mass.

NEW YORK.

New York County Medical Association.—At a meeting of the New York County Medical Association held February 21st, the President-elect, Dr. George T. Harrison, delivered his inaugural address. In his valedictory remarks the retiring President, Dr. Janvrin, spoke in favor of a union of the Association with the Medical Society of the County of New York, and in the executive session later a resolution was adopted authorizing the President to appoint a committee of seven to confer with the authorities of the County Society as to the practicability of the proposed union. It is likely that this movement will meet with determined opposition from a large number of the members of the Association, for the reason that the County Association, like the State Association, was organized (in 1884) on account of the repudiation of the code of ethics of the American Medical Association by the State and County Medical Societies, and that the County Association is the only body in the County, and the State Association the only body in the State entitled (by reason of their adherence to the code of ethics) to representation in the American Medical Association.

Dr. Charles B. Kelsey.—Dr. Charles B. Kelsey, a well-known specialist in rectal surgery, who had held a professorship in the Faculty of the Post-Graduate Medical School and Hospital since 1890, was removed by a vote of the Board of Directors of the Institution at the beginning of the present year. The reason for this action was that Dr. Kelsey had notified the Corporation Counsel of the city that the annual report of the hospital, which receives from the public funds 38 cents a day for each infant cared for by it without charge, was misleading, in that it claimed ten thousand more days' free care for infants than it was in reality entitled to. He also expressed opposition to the expenditure of certain endowment funds to meet current expenses of the hospital. Accordingly, charges of improper and disloyal conduct were preferred against him. After his removal, Dr. Kelsey instituted proceedings in the Supreme Court for reinstatement, claiming that he had been dismissed without a hearing, to which he was legally entitled, and that such a removal could be made only by a three-fourths vote of the entire Board. On February 21st Judge Pryor, before whom the case was tried, rendered his decision in Dr. Kelsey's favor, and ordered the Board of Directors to reinstate him in his professorship.

Hydrophobia Conveyed through Abrasions. A young girl, seventeen years of age, recently died at the Roosevelt Hospital of hydrophobia, which was contracted in an unusual way. Her home was at Congers, Rockland County, where the family owned three fine Newfoundland dogs. One by one they sickened and died of rabies, but as the nature of the trouble was entirely unsuspected she frequently allowed them to lick her hands. On the latter there were abrasions at the time, and as it was positively ascertained that she was never bitten, there would seem to be no question that the virus was introduced through these abrasions from the tongues of the animals.

Death of a Peary Esquimaux. — Kusshan, one of the six Esquimaux brought here from Greenland last summer by Lieutenant Peary, died at Bellevue Hospital on February 19th, of pneumonia. He left a small son who is with the rest of the party at a suburban residence.

A New Recreation Pier. — The Legislature has provided for the construction of a new free recreation pier, to be located on the Hudson, at the foot of 96th Street. It will be of the same character as those opened last year on the East River, which proved a source of so much benefit and pleasure to the poor.

Bequests by Dr. Seguin. — The will of Dr. E. C. Seguin bequeaths to the New York Academy of Medicine an oil painting of his father, Dr. Edouard O. Seguin, an autograph letter of Pope Pius IX, a bronze medallion of Charcot given by him to Dr. Seguin, and a portion of his library. To the pathological laboratory of the Alumni Association of the College of Physicians and Surgeons, he leaves his collection of instruments and appliances for the study of the nervous system, his anatomical and pathological preparations and specimens, and his neurological library.

Death of Dr. Conant Sawyer. — Dr. Conant Sawyer, physician of Auburn prison, died February 21st, of pneumonia, after a week's illness. He was formerly a practitioner at Ausable Forks, and had occupied his position at Auburn for ten years. During his incumbency he performed a large number of important surgical operations and raised the medical service of the institution to a high degree of efficiency.

Miscellany.

THE INDUCTION OF PREMATURE LABOR BY MEANS OF GLYCERIN.

Dr. Heinrich Saft, assistant physician at the Provincial Lying-in-Hospital in Breslau, has published, in the *Deutsche Medicinische Wochenschrift* of January 20th an account of a method which he has devised for the induction of premature labor by means of glycerin.

The procedures commonly employed for this purpose, such as irrigations of hot water, introduction of bougies, etc., usually require some days or even a week to produce the effect, and glycerin is the most efficient substance at present known. Glycerin acts by withdrawing water from the animal tissues and in this way irritating the uterine ganglia and nerves so that muscular contractions are produced. Its application is not free from danger, as it has been found to cause hemoglobinuria, destruction of the red blood-corpuscles, shivering fits and spasmodic dyspnea. For the purpose of obviating these dangers, Theilhaber used rods coated with a mixture of glycerin, gelatin and tricresol. Dr. R. A. Simpson injected three ounces of glycerin into the undilated os uteri of a primipara suffering from eclampsia and subsequently packed the cervix and vagina with plugs soaked with glycerin; but labor did not ensue, and another injection of glycerin had to be given.

The dilemma is that small quantities of glycerin are useless, and large quantities are dangerous. Dr. Saft therefore endeavored to devise a method by which a large quantity of glycerin might be introduced into the uterus without more than a very small proportion of it being absorbed. The method was suggested by the procedure of passing a catheter covered with an empty india-rubber bag between the uterus and the membranes. The bag was fastened to the catheter by thread tied round its mouth, and when it was in position it was filled through the catheter with from 400 to 500 c. c. (from 14 oz. to 18 oz.) of a solution of lysol. It occurred to Dr. Saft that if glycerin were substituted for the lysol solution and animal membrane for the india-rubber bag, then the glycerin would be able to exert its power of withdrawing water from the tissues without much of it being absorbed. For the animal membrane he used the swimming bladders of fish which as prepared for the market possess most of the requisite qualities; and having selected such as were capable of holding water he succeeded to his satisfaction in inducing labor without any ill-effects to the patients. Diffusion takes place through the swimming bladder, the glycerin withdrawing water from the uterus and fetal membranes. The quantity of glycerin which diffuses outwards through the membrane is too small to be productive of injury.

The swimming bladders selected for this purpose must hold water; most of those which are sold will not do so, and all such must be rejected. They are then freed from fat by treatment with ether and are afterwards sterilized with an alcoholic solution of corrosive sublimate, the process resembling the preparation of catgut by Schimmelbusch's method. When the bladder is drawn over the catheter, about an inch is left between the bottom of it and the tip of the catheter; the two are then tied together with silk. When the instrument is inserted between the uterus and the fetal membranes about 100 c. c. (3½ oz.) of glycerin are injected through the catheter, the lower end of which is then closed by means of a piece of india-rubber tube. The bladder must not be pushed high up into the uterus, but must lie directly over the internal os. Finally, the vagina is packed with iodoform gauze, which prevents the catheter from slipping out.

No ill-effects to either mother or child were observed. Of seven patients treated in this way four had injections of from 40 to 60 c. c. (from 1½ oz. to 2 oz.) of glycerin and the average duration of labor was about 108 hours; the other three had injections of 100 c. c. (3½ oz.) of glycerin and the average duration of labor was about 52 hours.

Strong solution of sodium sulphate is another of the fluids which tend to absorb water by osmosis, and he proposes to make trial of it in the way above described in order to ascertain if it has the same effect on the uterus as glycerin has.

There would seem to be a probability that a mixture of sodium-sulphate solution and glycerin might be employed with advantage, thus combining two drugs which possess a strong affinity for water, as is done in the enema of glycerin and sodium-sulphate solution which is so much used at present for the purpose of moving the bowels in cases of threatened septic peritonitis.

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THE VITALITY OF THE PLAGUE BACILLUS.

In a report presented to the Surgeon-General of the Bombay Presidency, Mr. E. H. Hankin records certain investigations into the vitality of the plague microbe in the soil, in urine, in cow dung, in the chief grain exports from Bombay, and into the action of disinfectants on it. Mr. Hankin found the isolation of the plague microbe, when mixed with the microbes commonly present in dirt, to be almost impossible, and he doubts Yersin's statement that the plague microbe can be found by existing methods in the soil of infected localities.

An attempt was made to obtain some idea of its probable behavior in the outside world by testing the duration of its life in various substances that might possibly act as its nidus. This was done by adding the plague microbe to the substances to be tested after they had been sterilized. In acid urine it was found that the microbe could remain alive for twenty-four hours. In acid human feces it appears to die out sooner. Similar results were obtained with acid cow dung, but in alkaline cow dung the plague microbe appeared to be able to keep alive for four days. Grain which has fermented usually acquires an acid reaction, and it was found that the plague microbe died out within twenty-four hours when placed in sterilized liquid obtained from putrid grain. Mr. Hankin was unable to confirm the statement of Wilm and Abel, that the plague bacillus could remain alive in sterilized water for many days or even weeks. Cultures of the plague microbe added to different grains usually exported from Bombay perished within thirteen days.

Mr. Hankin confirmed the views of Kitasato and Abel that the plague microbe is not particularly sensitive to carbolic acid. Phenyl, a distillation product containing various phenols and cresols, appeared to be more active; while izal was still more active, for in a strength of 1 to 500 it appeared to kill the microbe in five minutes. But as phenyl and izal are insoluble in water, and merely form an emulsion, it is questionable whether their activity would be as great under the conditions that exist in nature. This objection cannot be raised against lysol, which seems to be equally efficacious. Napthalin had no disinfectant action. Formic acid 1 in 100, acetic acid 1 in 142, lactic acid 1 in 333, nitric acid 1 in 333, hydrochloric acid 1 in 500, sulphuric acid 1 in 1,429 destroyed the plague microbe in five minutes, while permanganate of potash in a strength of 1 in 10,000 destroyed the microbe. On the whole, however, Mr. Hankin suggests that the disinfectants to be used for infected buildings should be sulphuric acid 1 in 250, and a solution of corrosive sublimate 1 in 1,000 to which hydrochloric acid in the proportion of 2 in 1,000 has been added. We doubt very much whether the strength of the corrosive sublimate would effect the object in view, for we have known of corrosive sublimate double the strength proposed being ineffective in sterilizing soils. — *British Medical Journal.*

TRAUMATIC PERITONITIS DUE TO CONTUSIONS OF THE ABDOMEN WITHOUT INJURY TO THE VISCERA.

From one of his own and two cases in the hands of others Delore[1] comes to the conclusion that traumatic peritonitis without injury to the viscera, though rare, occasionally occurs, even when the term injury in the case of the intestine be understood to mean not only rupture, but also a contusion of the intestine. The occurrence of peritonitis without perforation, but in the presence of ecchymosis or necrosis of the intestinal wall, may be explained by infection of the peritoneum through the contused intestinal tissue. The mechanism of peritoneal infection without injury to the wall of the intestine is as yet unknown, but the possibility of its occurrence must be admitted.

Correspondence.

BERLIN LETTER.

Etiology in Blood Diseases.— Pseudo-pernicious Anemia in Women of the Better Class who Ride and Write and Dance and Study and Sport.— Blood Changes at Altitudes Denied.— Pasteur Institute for Berlin. — Professor von Esmarch's Resignation and the Passing of the Great German Medical Professors.

Berlin, February 10, 1898.

Mr. Editor: — Professor Grawitz, who is quite well known as an authority on blood conditions, and who was selected as one of the referents for certain of these conditions at the International Congress at Moscow last summer, is delivering a very interesting series of lectures on blood pathology here. The discussion of the present status of the question of essential anemia, that is, a primary anemia without a cause outside the blood itself, shows that the idea of disease of the blood as of a fluid independent tissue has given way to the much more rational one, that all anemias are secondary to some organic change, which makes itself felt alone perhaps in the altered blood condition. Progressive pernicious anemia is only a form of disease having a cause as yet unknown, and a course inevitably fatally progressive.

One of the things always looked for here in seemingly inexplicable anemias is the presence of intestinal parasites. Anchylostomiasis, that is, the presence of the anchylostamum *duodenale* in the *jejunum* (*sic*), is especially carefully looked for. Some cases were found among workers in a brickyard near Berlin not long ago by Grawitz; and as the disease is readily communicable, if the eggs of the parasite find their way into food or drinking-water, anemias in workers in clay are now always suspected. All of the other intestinal parasites have been known, however, to produce intractable anemia; syphilis, too, is gradually coming to be looked upon as an important etiological factor in progressive pernicious anemia. But then there are so many pathological conditions attributed to syphilis!

A very interesting form of pernicious anemia is that described as occurring among women of the better classes, as a consequence of over-exertion, be it mental, physical or emotional. The well-known state of more or less unstable equilibrium of the blood-making organs in women, which enables them to meet the varying demands of the pregnant and puerperal conditions, besides the not insignificant strain of monthly losses, leaves them especially liable to profound pathological alterations, if in more or less delicate constitutions additional burdens are put on them. Women who take upon themselves to imitate men in their ways of living, especially wives who make it a point to occupy themselves as their husbands do; who take up serious intellectual work, and devote themselves to their social duties, and then besides indulge in severe exercise — bicycle tours, mountain climbing, etc.— supposed to be recreation, and which actually are so for the more rugged masculine constitution, are sufferers in this way. These women are liable to progressive anemic conditions, at least here in Germany, having many points of resemblance to so-called pernicious anemia. Only a course of the most rigid rest-cure combined with plenteous nutrition (over-feeding) stops the disheartening progression of the affection. Where the same condition develops a second time, as the result of the same etiological factors, despite medical warning, the reaction of the blood-making organs is slow and often incomplete. A persistent anemia remains, which very easily takes on the quality of perniciousness, or sadly diminishes vital resistance to fatal intercurrent disease.

The problem of the increase of red blood-cells at altitudes, which attracted so much attention some years ago, naturally aroused a great deal of talk here. After a number of warm discussions at the Berlin Physiological Society, it was practically agreed that the increase of red blood-cells was apparent, not real. The fact of the decrease in number occurring immediately after descent, without any trace being found in excretions of the immense number of corpuscles, which must somehow be destroyed in the organism, if the decrease were a real one, was the consideration which moved most of the authorities not to credit the conclusions that seemed to flow inevitably from the blood-counts recorded.

It is believed now that the difference in pressure between higher and lower levels causes a different distribution of the red blood-cells in the organism, and that as a consequence more of them are found in the superficial cutaneous vessels than before. This theory has led to some very suggestive thoughts as to the merely relative accuracy of blood counting under varying circumstances, that have added to the present state of dissatisfaction with regard to supposedly scientific methods of blood examination; for hemoglobinometry, as it has been practised, is pretty thoroughly discredited, and either the specific gravity of the blood, or its dried residue, is the only thing one hears talked of where there is any pretence to be at all advanced in blood pathology.

An explanation of the seeming increase of the red blood-cells at altitudes, offered by Professor Grawitz himself, promises also to be pregnant with suggestion. In the dry mountain air much more moisture is given off by the skin, and especially by the lungs, than usual. The serum is thereby lessened in quantity and a relative increase of red blood-cells to a given quantity of fluid blood takes place. The idea seems to indicate that the blood-examination method of the future will have to take account of the plasma as well as the blood-cells, if it is to prove satisfactory and scientifically complete.

A very interesting comment on blood instruments and their accuracy is a series of experiments by Dr. Gottstein here some time ago, apropos of this question of hypereythemia at altitudes. He found that a series of results, corresponding to the changes supposed to be produced in the blood of patients by the rarefied mountain air, could be obtained by exposing the blood-counting instruments to a proportionately lower atmospheric pressure during the counting. With the air in the chamber of the Thoma-Zeiss blood-counter only one-half as dense as it was before, a significant amount more of blood would be contained in it. This amount, though extremely small, easily affects the accuracy of the result, as may well be imagined, because of very large factors which enter into the calculation and multiply the original slight error into important magnitude.

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[1] Gaz. hebdom. de méd. et de chir., 1897, No. 75.

After having absolutely refused for more than ten years now to put any faith in the Pasteur treatment for rabies, the Germans have at last resolved to try it. An appropriation for an experimental station for the treatment according to Pasteur's method is one of the items in the medical budget for the year. It is to be carried on in connection with the Institute for Infectious Diseases, Professor Koch's department. Though it is said to be only experimental, it would seem as though this was scarcely more than a half-hearted apology for the refusal to have had anything to do with it before. The treatment itself is far beyond its tentative stage, and each year brings more and more encouraging statistics as to its results in Russia, in Italy, in India, and in Egypt.

During April the German surgeons and physicians hold congresses: the surgeons here at Berlin; the physicians at Wiesbaden, not far from Frankfort. The custom which requires the medical society to meet in different cities in successive years separates it completely from the sister society most of the time. With the many interesting questions which are on the borderland between medicine and surgery, and which inevitably come up for discussion, this is unfortunate, and the Germans generally bewail the fact. The friction of ideas from very different points of view could only serve to smooth the angles of many a crotchety question. The medical meetings this year promise to be of specially universal interest as clinical methods of medical instruction are to be the formal subject of discussion. The subject is to be introduced by von Ziemssen of Munich and von Jaksch of Prague, who may be considered to represent very well the veterans and the young campaigners in the teaching methods at German Universities.

The announcement that Professor von Esmarch will resign his professorship at Kiel at the end of the winter semester and retire to well-earned rest takes away another of the great German medical teachers. Kölliker has just resigned, Haidenhain and Du Bois Reymond have died within the year, and only a few of the men whose teaching was the feature of German medical instruction will carry their professorships over into the new century; and it is a question for speculation if their successors will attract the attention and the students their elders have had.

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THE VAGINA A "TOOL CHEST."

Detroit, February 22, 1898.

Mr. Editor: — Apropos of the clipping in the Journal of February 17th, on "Foreign Bodies in the Vagina," there is in the Eastern Michigan Asylum a patient whose mischievous habits have given rise to no little annoyance to the attendants as well as destruction of property. For some time it was noticed that screws would mysteriously disappear from the window grating of this patient's room, the panels of the door would be partially cut through as if by a sharp instrument, and various doors and window-frames in the open hall would be found mutilated in some way. The patient's room, bed and clothing were repeatedly searched by the attendants for implements with which those acts of vandalism could be accomplished; but for several weeks nothing was discovered, although the "merry work" still went on.

Finally, it occurred to the Assistant-Superintendent, Dr. Jason Morse, that a physical examination might help to clear up the mystery. This being undertaken, a roll of tissue paper was found concealed in the vagina; and this removed and opened disclosed a corset steel sharpened at one end, and a screw-driver with removable handle. The crafty patient had taken advantage of her anatomical construction, feeling tolerably safe from discovery, and had converted the vagina into a veritable "tool chest."

Yours truly, W. P. Manton, M.D.,
Gynecologist to the Eastern Michigan Asylum, Pontiac.

METEOROLOGICAL RECORD

For the week ending February 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..13	30.13	41	46	36	68	57	62	N.W.	S.E.	15	3	C.	C.	
M..14	29.96	35	41	29	71	79	75	S.	S.	1	7	F.	R.	
T ..15	29.64	35	41	29	65	93	79	S.W.	E.	8	15	O.	O.	.02
W..16	29.13	28	45	12	89	72	80	S.W.	N.W.	20	26	N.	F.	.15
T ..17	30.02	22	32	11	55	43	49	N.W.	W.	20	20	C.	C.	
F...18	30.24	28	37	20	55	75	65	S.	E.	4	4	O.	R.	.01
S...19	30.36	36	38	34	72	82	77	N.	N.E	6	7	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, February 19, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Typhoid fever.
New York . .	3,438,899	792	299	11.83	23.27	1.43	3.12	.26
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	491	148	12.40	13.20	1.40	3.40	4.20
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	188	54	5.83	20.67	1.06	2.12	.53
Baltimore . .	550,000	196	73	10.71	15.30	2.04	4.59	.51
Boston . . .	517,732	180	56	5.60	17.40	.56	1.02	.56
Cincinnati . .	405,000	86	—	4.64	8.12	—	1.16	3.48
Cleveland . .	350,000	94	30	4.26	8.48	1.06	2.12	—
Pittsburg . .	285,000	127	45	18.17	26.86	3.16	1.58	6.32
Washington .	277,000	125	37	8.80	23.20	.80	1.60	2.40
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	26	11	19.25	15.40	—	3.85	—
Nashville . .	87,754	34	8	2.94	35.22	—	2.94	—
Fall River . .	95,919	55	26	3.64	23.66	—	3.64	—
Lowell . . .	87,193	38	6	2.63	23.67	—	—	2.63
Cambridge . .	86,812	28	11	3.57	28.56	—	—	—
Lynn	65,220	18	6	33.33	5.55	—	—	22.22
Charleston . .	65,165	26	6	11.55	3.85	7.70	—	3.85
New Bedford .	62,416	28	9	3.57	7.14	—	—	—
Lawrence . .	55,510	14	6	14.28	14.28	—	7.14	—
Springfield . .	54,790	19	5	—	10.52	—	—	—
Holyoke . . .	42,364	12	5	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	6	1	—	—	—	—	—
Brockton . .	35,853	6	2	—	—	—	—	—
Malden . . .	32,894	12	3	25.00	8.33	8.33	8.33	—
Chelsea . . .	32,716	10	3	10.00	40.00	—	—	10.00
Haverhill . .	31,406	13	4	23.07	15.38	—	15.38	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	6	1	16.66	33.33	—	—	—
Fitchburg . .	28,392	9	2	—	11.11	—	—	—
Taunton . . .	27,812	4	0	25.00	25.00	—	—	25.00
Quincy . . .	22,562	4	1	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	4	2	25.00	25.00	—	—	25.00
Everett . . .	21,575	1	0	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	7	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,730; under five years of age 880; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 273, acute lung diseases 515, consumption 318, diphtheria and croup 76, typhoid fever 45, diarrheal diseases 35, measles 20, scarlet fever 27, whooping-cough 20, small-pox 16, cerebro-spinal meningitis 12, malarial fever 7, erysipelas 5.

From measles New York 16, Philadelphia 7, Pittsburg 4, Baltimore, Boston and Haverhill 1 each. From scarlet fever New York 12, Philadelphia 7, Baltimore 2, St. Louis, Boston, Cleveland, New Bedford, Newton and Melrose 1 each. From whooping-cough Pittsburg 5, New York and Baltimore 3 each, Philadelphia, Washington and Lynn 2 each, Cambridge and Chicopee 1 each. From small-pox New York 16. From cerebro-spinal meningitis Worcester 4, Boston 3, New York and Washington 2 each, Philadelphia 1. From malarial fever St. Louis 5, New

York 2. From erysipelas New York 3, Baltimore and Washington 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending February 12th, the death-rate was 20.7. Deaths reported 4,448; acute diseases of the respiratory organs (London) 468, measles 171, whooping-cough 123, diphtheria 77, diarrhea 49, scarlet fever 43, fever 34.

The death-rates ranged from 11.3 in Croydon to 26.3 in Plymouth; Birmingham 22.5, Bradford 14.9, Cardiff 14.1, Gateshead 22.6, Hull 18.4, Leeds 17.6, Leicester 18.0, Liverpool 21.1, London 22.2, Manchester 22.3, Newcastle-on-Tyne 21.3, Nottingham 15.7, Sheffield 19.7, Sunderland 22.1, West Ham 16.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 19, 1898, TO FEBRUARY 25, 1898.

Leave of absence for four months, with permission to go beyond sea, to take effect on or about March 15, 1898, is granted **LIEUT.-COL. WILLIAM D. WOLVERTON**, deputy surgeon-general, chief surgeon, headq'rs., Department of the Columbia.

Leave of absence for two months, with permission to go beyond sea, to take effect on or about March 1, 1898, is granted **MAJOR HENRY S. KILBOURNE**, surgeon, Madison Barracks, N. Y.

CAPTAIN PAUL F. STRAUB, assistant surgeon, ordered to accompany Co's. A. and G., 14th Infantry, to Skagway, Alaska, and there take station.

FIRST-LIEUT. JOHN S. KULP, assistant surgeon, ordered to accompany Co's B. and H., 14th Infantry, to Dyea, Alaska, and there take station.

MAJOR WILLIAM W. GRAY, surgeon, is relieved from duty at Fort Apache, Ariz., to take effect upon the expiration of his present leave of absence and ordered to Fort Huachuca, Ariz., for duty.

Leave of absence for one month, to take effect on or about March 1, 1898, is granted **CAPTAIN CHARLES B. EWING**, assistant surgeon, Jefferson Barracks, Mo.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING FEBRUARY 17, 1898.

SAWTELLE, H. W., surgeon. Upon being relieved by Surgeon H. R. **CARTER** to proceed to Chicago, Ill., and assume command of Service. February 17, 1898.

AUSTIN, H. W., surgeon. To assume temporary charge of quarantine division in Bureau. February 15, 1898.

CARTER, H. R., surgeon. To rejoin station at Chicago, Ill., February 17, 1898. Relieved from duty at Chicago, Ill., and directed to proceed to New Orleans, La., and assume command of Service. February 17, 1898.

BROOKS, S. D., passed assistant surgeon. Relieved of command of Service at Port Townsend, Wash., and to remain in command of Port Townsend Quarantine. February 17, 1898.

PERRY, T. B., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon J. B. **STONER**, to proceed to San Francisco, Cal., and report to medical officer in command for duty and assignment to quarters. February 17, 1898.

STONER, J. B., passed assistant surgeon. Upon being relieved by Surgeon H. W. **SAWTELLE**, to proceed to Buffalo, N. Y., and assume command of Service. February 17, 1898.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Spartanburg, S. C., for special temporary duty. February 14, 1898.

PERRY, J. C., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon **RUPERT BLUE**, to proceed to Port Townsend, Wash., and assume command of Service. February 17, 1898.

BROWN, B. W., passed assistant surgeon. To proceed to Key West, Fla., and report to medical officer in command for special temporary duty. February 15, 1898.

BLUE, **RUPERT**, passed assistant surgeon. Upon being relieved from duty at San Francisco Quarantine, to proceed to Portland, Ore., and assume command of Service. February 17, 1898.

OAKLEY, J. H., passed assistant surgeon. To proceed to New Orleans, La., and report to medical officer in command for duty and assignment to quarters. February 15, 1898.

MATHEWSON, H. S., assistant surgeon. Upon being relieved from duty at San Francisco, Cal., to proceed to San Francisco Quarantine and report to medical officer in command for duty and assignment to quarters. February 17, 1898.

COLLECTIVE INVESTIGATION ON THE ACTION OF COLD IN PNEUMONIA.

February 26, 1898.

My three collective reports already published on local cold applications in the treatment of acute pneumonia give a record of 299 cases so treated, with ten deaths, or a mortality rate of 3.35 per cent.

Being desirous of pursuing this investigation still further, I take the liberty of asking those who have tested this measure to kindly give me the result of their experience. Full credit will be given to each correspondent in the report which I hope to publish soon. Blanks for the report of cases will be cheerfully furnished by me, with postage for return of same, on application.

THOMAS J. MAYS, M.D., 1829 Spruce St., Philadelphia.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, March 7th, at 8 o'clock.

Dr. A. T. Cabot will read the first paper of the evening: his title: "Some Observations upon Malignant Adenoma of the Rectum and its Treatment, by Kraske's Operation." Drs. C. B. Porter, H. L. Burrell and P. Thorndike have been asked to take part in the discussion.

Dr. A. Coolidge, Jr.: "Changes in the Turbinated Bones in Connection with Deformities of the Septum." Drs. S. W. Langmaid and J. W. Farlow will discuss the paper.

JAMES G. MUMFORD, M.D., *Secretary*, 197 Beacon St.

AMERICAN NEUROLOGICAL ASSOCIATION.— The Council announces that the twenty-fourth annual meeting of this Association will be held in New York at the New York Academy of Medicine, No. 17 West Forty-third Street, on Thursday, Friday and Saturday, May 26, 27 and 28, 1898. There will be two sessions daily, one from 10 A. M. to 12.30 P. M., and the other from 2 P. M. to 4.30 P. M.

APPOINTMENTS.

JOEL E. GOLDTHWAIT, M.D., has been appointed to the position of orthopedic surgeon and **CHARLES F. PAINTER**, M.D., assistant orthopedic surgeon at the Carney Hospital.

RECENT DEATHS.

JOHN PARKER MAYNARD, M.D., M.M.S.S., of Dedham, died February 26, 1898, aged eighty-one years.

JOHN YALE, M.D., M.M.S.S., of Ware, died at Beloit, Kan., February 25, 1898, aged seventy-seven years.

CALVIN STEVENS, M.D., M.M.S.S., formerly of Boston, died at Auburndale, March 1, 1898, aged eighty one years.

BOOKS AND PAMPHLETS RECEIVED.

The Abuse of Medical Charity. By Frederick Holme Wiggin, M.D., New York. Reprint. 1897.

The Value of Modified Cow's Milk in Infant Feeding. By David James Evans, M.D., Montreal. Reprint. 1897.

Examination of the Urine as a Means of Diagnosis. By Theodore W. Schaefer, M.D., Kansas City, Mo. Reprint. 1897.

Notes on Micro-organisms Pathogenic to Man. By Surgeon-Captain B. H. S. Leumann, I.M.S., M.B., London, D.P.H. (Cambridge), etc.

The Report to the Medical Society of the County of New York of its Committee on the Abuses of Medical Charity. Reprint. 1897.

A Contribution to the Pathogenesis and Etiology of Diabetes Mellitus. By Heinrich Stern, Ph.D., M.D., New York. Reprint. 1897.

Aids to Aseptic Technique. By A. D. Whitney, M.D., Assistant Surgeon to the German Hospital, Philadelphia. Philadelphia: J. B. Lippincott Co. 1898.

The Progress of Laryngology. Transillumination in Diseases of the Nose, Throat and Ear. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprints. 1897.

The Urgent Need of Sanatoria for the Consumptive Poor of Our Large Cities. By S. A. Knopf, M.D. (Paris and Bellevue, N. Y.), New York. Reprint. 1897.

Deficient Excretion from Kidneys not Organically Diseased and Some of the Diseases Peculiar to Women, and Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. 1898.

Manuels Paul Lefert, Lexique-Formulaire des Nouveautés Médicales et Biologiques, Nouvelles, Maladies Nouveaux Syndromes, Nouveaux Remides, Nouvelles Opérations. Par le Professeur Paul Lefert. Paris: J. B. Baillière et Fils. 1898.

Lecture.

ON SOME OF THE QUALITIES NECESSARY FOR BEING A GOOD NURSE.[1]

BY FRANCIS S. WATSON, M.D., BOSTON.

I have come here to-night at the kind invitation of Dr. Worcester to speak to you on a subject about which I have thought a good deal from time to time, and one which is important to nurses. It is with reference to some of the qualities that seem to me to be the most essential to the making of a good nurse, and of her relation to the families and the patients whom she tends in private practice.

Two considerations have made me select this subject. One is the fact of the scant attention that it receives, so far as I can learn, in the teaching of trained nurses; and the other is the growing disatisfaction in the community with them, which, I think, is almost wholly due in many cases to the absence of the personal qualities which go to make the good nurse. Let me begin by a few examples of contrasting traits as illustrations.

Not long ago I had the charge of a patient who was dying. I had placed him in the care of an excellent nurse, who unfortunately became ill after ten days of the work, and who with great reluctance was obliged to give up the case. The patient had grown used to her, and she had shown remarkable tact in caring for him, especially in the matter of feeding, which, owing to the nature of the disease, was an unusually difficult task. The nurse who came to replace her was younger, both in age and experience, and she had the disadvantage of following one whose services to the patient had been particularly grateful. I found, as I had feared, that she could not succeed in feeding the sick man so well as the other had done. I therefore asked the first nurse to carry out that particular part of the care.

I watched with curiosity the result of this somewhat unusual way of dividing the work between two nurses; for it was not, I knew, an easy thing for the one who had had full charge, and who was an older nurse to take part charge under the younger one who had been but a day or two with the patient, nor was it easy for the new one to have her work broken in upon and to feel that she was not so good in so important a matter as that of feeding.

I presently saw that all was going well, and that the first nurse was not only feeding the patient but also doing all she could to help the other in whatever way she could, or was asked to by her; while the latter, instead of resenting this as an interference with her care of the patient or as an implied criticism from the doctor, welcomed any suggestions made to her by her colleague. Owing to the excellent dispositions of these two nurses the patient was served doubly well, and received all the comfort and relief possible. It gives me pleasure to say that one of these nurses belonged to this school, and the other to the Boston City Hospital.

Had my experience of trained nurses been only with those of such qualities as I have just described, I should have lost the pleasure of addressing you to-night, on this subject at any rate, for there would have been nothing to be said, unless it were to speak in unstinted praise. But, unfortunately, there is no such uniformity of admirable traits; and personal experience with some nurses of quite contrary natures has furnished me with a larger number than I wish it had, of nurses whose conduct in one or more respects is of the sort that once made a lady to whom my first injunction was when she had sickness in her house, to send at once for a trained nurse, to reply with a tone of despair, "O doctor, must I have another of those women here? I have had four during the past year, and each was a greater curse to us than the last." And she then recounted to me her trials with them, which in some degree at any rate, justified her exclamation.

I once had charge of an old gentleman who was dying of pneumonia. One of the two nurses who were with him had been most highly recommended from one of our largest training-schools. One day the patient, in a moment of irritability, said to her, "Damn it, nurse, don't do that so"; and on several other occasions he found fault with her way of doing some small thing or other, as indeed he did with several members of his family. On the third day of her attendance on the case the nurse came to me and said that she wished to leave. I asked her why, and she told me that she had been sworn at by the patient — in the way I spoke of above — and that he was not a sympathetic person to her, and she could never properly nurse an unsympathetic individual. This incident would have been laughable had the circumstances been less grave. As it was, I need not comment on her conduct. She left — of course — promptly, but at a moment when the patient was very dangerously ill, and when the change might well have been of serious import to him, for she was a good nurse technically and he was perfectly content with her. His swearing at her on that occasion was simply the expression of irritability from his illness and not directed at her personally, which she would have seen had she not been so fully occupied with the sense of herself.

It is of frequent occurrence to hear a nurse say to the patient or to some member of the family, or to the attending physician, with regard to some detail of treatment, "Well, I never saw it done in that way," or "At the hospital we were always taught to do it so and so," or "Dr. So-and-so always did it in such a way."

These incidents I have selected from my own personal experience of a considerable number of similar ones. They demonstrate, when one realizes that they are but a fraction of the whole number, the fact that such women as these are carrying additional trouble into many households, in which their presence should be welcomed as that of ministers of mercy and carriers of help and comfort. And what is also important, they are discrediting trained nurses as a class, and doing great injustice to the rest of their comrades, amongst whom are some of the noblest women we ever see.

There is one class of nurses of which I have never heard any complaint with regard to the personal qualities which I mentioned. I refer to the members of some of the religious sisterhoods, both Catholic and Protestant. For this there is a good reason, and it is, I think, to be found in the attitude inculcated in them by these orders toward whatever duty they undertake. This attitude is one of entire self-forgetfulness, and the sinking of themselves in their mission. This is the particular feature which I believe makes the sisters so invaluable in the sickroom. The only knowledge one has of them is that there is a helpful presence in the home, that the orders of the physician are silently executed. There is no discussion; one hears no reports, then or later, that the nurse has criticised the doctor or praised another physician at the expense of him who is in attendance; no comments on the treatment or the nurse's ideas as to the nature of the disease; there is no talk with the patient or family about other patients they have nursed, or the detail of any diseases. I would not be understood as meaning that this special class of nurses is without faults; but I do assert that the discipline and self-denial acquired in the training imposed by their sisterhoods frees them from the sense of self in a way that is not often met with elsewhere, and that in so doing it fits them in one of the very first and most important requisites for being good nurses. On the other hand, there are those of us who have reason to be grateful to trained nurses for their inestimable help in many hours of sorrow and trial, and can testify to a goodly number who have carried the standard of their order nobly, and planted it where it should be placed, on high.

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[1] Delivered at the Waltham Training School for Nurses, January 11, 1898.

The relative rarity among trained nurses of the qualities I have just spoken of as belonging to the sisterhoods is, I think, to be referred to several things, amongst which are these: Our large hospitals require a large number of nurses, and it is obvious that of those selected for these positions there will be a certain proportion of women who have no natural fitness for the work. The work that these institutions demand of their nurses is arduous; it brings them in contact with some of the roughest and worst classes of the community, and it gives but little time or opportunity for learning the niceties of private nursing. The nurses in these hospitals remain in them, as a rule, but two years. They come there to be taught the technique of their profession. There is nothing that tends, therefore, to create in them or associate with their training the thought of nursing as a permanent mission of their lives or that identifies them with the best aims of the institution in which they are trained.

In making this partial comparison between the hospital trained nurse and those of the sisterhoods with reference to this particular question of some of the personal qualities, it must be remembered that with the latter the question of making their living out of their profession is eliminated; and, furthermore, the fact of a woman's joining a religious order is presumptive evidence that she has ingrained in her nature the desire and the fitness for a life of self-denying devotion which gives her a special and the most important qualification for becoming, in the sense of the personal qualities at least, a good nurse.

If the time which is given to their instruction upon scientific matters and the nature of disease were devoted to making nurses realize what their conduct toward the patient and the family should be, and to impressing upon them fully the requirements of their high calling, nurses and patients would be gainers. Think of what a mission nursing is! It calls for the exhibition of the highest human qualities as no other in the world does. The patience is taxed to the uttermost by the unreasonableness and irritability of the sick, by the injudicious interference, often well meant, of relatives and friends; and coming, as they often do, when the power of self-control is lowered by the fatigue of long-continued work, these things are hard to bear. There is no profession, so far as I know, which does not have in its ranks a certain proportion of persons of inferior or bad character; but in none is there demanded such exceptional strength and goodness of character as in those of the nurse, the priest and the physician; and because of this fact, defects, delinquencies and unfitness for the special mission they have undertaken assumes a greater importance here than elsewhere. The members of all three necessarily become acquainted with the weaknesses and sins of the people they attend; absolute trust has to be reposed in them, and to abuse this trust in the presence of suffering and sorrow, is a correspondingly grave offence.

In the great majority of cases the women of the training-schools of our large hospitals make admirable institution nurses; and in their capacity for hard work, technical knowledge and courage, they leave little to be desired. No one would contradict this who had seen, as I have, the nurses of the Boston City Hospital go through their terms of service in the diphtheria wards before the days of antitoxin. It was no fancied danger that they encountered there in the line of their duty, but grim reality. The percentage of the attendants upon the patients with this disease, who died from it, or took it, was as great as that of the killed and wounded in some of the bloodiest battles of the world. These women were well aware of this danger when they undertook their task; but there was no wavering, and no soldiers ever stood more steady under fire. It is not in some of the highest qualities, therefore, that they are lacking; and the knowledge of this makes it seem all the more regrettable that such failings as those I have spoken of should be seen in unfortunate contrast in a certain number of these — women in private nursing.

A most important quality required in private nursing is tact, which includes the ability to get on with the members of the family and the servants as well as with the patient. A quiet and encouraging manner should always be maintained. Anxiety or depression in regard to the patient, the sense of irritation, or expression of discouragement, should never appear in the nurse's face. It is incalculable what a bright smile, a quiet way of moving and a deft hand can do for a patient. A light step and a quiet way of moving things about are important. To have cups and saucers and dishes clattered, chairs set down with a thump, bottles overturned and broken, a towel handed to you with a jerk are disagreeable things when one is well, but for the sick person they may be serious obstacles to convalescence. The nurse needs to exercise much diplomacy in order to keep her control of the patient and to carry out the physician's orders. In order to do this she must, of course, not be interfered with; but she should secure this control without asserting herself disagreeably and irritating the members of the family by so doing. It is always better to appeal quietly to the attending physician, stating any difficulties that she has met with; and in most cases he will be able to give her a clear field for her work.

It is true, of course, that the nurse often finds herself in a household of anything but pleasant, well-mannered or intelligent people. She has to deal with all sorts of persons, and her trials from this source are many and varied. It is just because of this that she must be a woman of unusual tact, strength, sweetness of disposition and self-forgetfulness. The aggressive assertion of petty authority is a serious fault. So also are discussions with the members of the family. She must meet people who are enough to try the patience of a saint, and her patience should be as nearly of that quality as it is given to humans to have.

When you meet that sort of interference in your attendance on the sick, that is so hard to bear sometimes, such as one so often sees, for example, from the injudicious fondness of mothers for their children, or the sense of jealousy at the presence of a stranger suddenly brought into the relation of intimacy with their own that nursing necessitates in many respects, remember that while it is hard for you to bear with such interruptions to your work, it is also hard for them. Instead of thinking of your own feelings, let your first impulse be to put yourself in their place. Picture yourself as the wife or mother of the sick one whom you have cared for with such devotion as only springs from a true woman's love, and then at the moment when you are racked with anxiety and dread, wearied with the fatigue of having had, as so often happens, the sole care of ministering to the sick person, before the nurse has been finally sent for, think, I say, of giving up all that care, of being, as is often necessitated, told by the doctor that you must no longer perform the thousand and one tender offices that you have been trying to do, of being excluded, perhaps, except for short periods, from the sickroom, in which you cannot but feel that you before all others have the right to enter, think of watching another woman take your place, assume the control of one who belongs to you, see her succeed in giving comfort and relief which you are longing to give, being made to realize that she succeeds where you have failed, all this and much more; and then as nurse you will readily make a wide margin of allowance for the interferences, the annoyances of a personal nature arising from such causes as they so often do.

One of the details of tact is the concession to the patient and to members of the family in unimportant matters. It is a mistake to carry out the physician's orders with such a literal hard and fast manner that every point involves a discussion with the people about you, which leaves you and them with a feeling of annoyance and ends by putting additional obstacles in your way. And even in the more essential things, an apparent yielding, or at any rate avoidance on the nurse's part, of all argument about them, will enable her to secure her end in the quickest and easiest way.

A great deal of the comfort in a nurse's subsequent relation with the family depends upon her manner of entering the home, and particularly the sickroom. She is coming, remember, to deal with a serious thing, and she should come with but one purpose in her mind — that of carrying as much help as she can to the suffering person, and of bringing encouragement to all the household. I well remember a charming looking young nurse who on arriving in a house of a patient of mine walked in with great briskness, looked about with varying approving or critical glances at the furniture, pictures, etc.; she then entered in a sprightly way upon a short talk on general topics with the head of the house, in the course of which she touched upon the charming features of the house and the grounds, and other kindred topics, and finally seemed to become aware that there was a sick person there whom she was perhaps expected to do something about. She was fashionably dressed, and gave me the impression of having come to make an afternoon call.

This was, of course, an extreme example — a ludicrous one, if you like; but it will serve perhaps all the better to make emphatic what I wish to note as of real importance, namely, the reverse of such characteristics. One instinctively feels reliance and rest at once on seeing enter one's home a nurse with a quiet, self-possessed manner, gentle voice, and neat and quiet dress, one who shows that she has no other interest than to care for the patient, and relieve the weight of anxiety that is there. If you meet, as you will, with an ill-mannered greeting from ill-bred people, or the lack of consideration that comes from such, or as it sometimes does from the absorption of people in their own sorrows, disregard it, just as you should be able to disregard the lack of many household conveniences.

One of the most difficult parts of the household to deal with is that of the servants. One should never forget that in time of illness any additional work put upon them, especially when the family is not wealthy and does not have an extra number of people to help out, is likely to make them leave; so that care should be taken by the nurse to avoid giving them anything to do for her personally that can be avoided. The nurse should not hesitate to clear up the things she has been using, for instance, if she sees that the servants are hard pushed to keep even with their own work. If she has things said or implied to her by them that are intended to hurt her and to be disagreeable, let her remember that they can never offer an indignity to her if she has not invited it, but that such words are an indignity only to those who speak them. Any nurse who has native dignity, and there is no other deserving the name, can always afford to disregard the vulgar expressions of unkind intent from people of that or any other class.

One of the most valuable things in the attendance upon patients is that of anticipating their wants. I know of nothing that shows the native quality of a nurse more than this. A good nurse seems to have the intuitive knowledge of what her patient needs five minutes before the actual want becomes important to the individual; this is largely a quality of the imagination, which enables her to put herself in the sick person's condition.

The mistake is often made by a very conscientious nurse in carrying out too literally the treatment prescribed by the physician. A certain margin of discretion must always be left to the nurse; and a good nurse will never abuse it to the patient's harm, or fancy that because she is allowed it, she is at liberty to assume responsibility that does not belong to her. As an example of the too literal carrying out of the physician's orders, I once asked a nurse who was being examined for her diploma, this question, "If you had been ordered to put fresh poultices on a patient's arm every two hours, what circumstances, if any, would justify you in prolonging the intervals of their application?" She said, "None." I then asked, "Suppose the patient was having the first good sleep he had had for many days, would you think it right to wake him to change the poultice?" She said, "Certainly." In this she would have been mistaken. While dressings should be applied and medicines given as exactly as possible according to the physician's orders, yet there are times when rigid insistance upon this being done at the exact moment will fret the patient and do him far more harm than a delay of ten or fifteen minutes could possibly do.

A mistake frequently made is that of asking the patient whether he would like to have this or that, or of saying, "I am going to do so and so now." The thing, whatever it may be, should simply be brought; and it should be assumed it is to be taken or done, as a matter of course. This is especially true of food.

But the real essential of being a good nurse lies in the character of the individual. Good nurses cannot be made of ordinary women; and of no class of workers is it so true, I think, as of them, that the peculiar qualities requisite for their profession are born in them, not made. I go so far as to say that no woman who does not feel the native instinct and love for caring for the sick should enter the ranks of this profession. If a woman has that impulse sufficiently strong in her she is almost certain to make a good nurse. If she is undertaking it from any other motive than such natural love for the work, she is nearly equally certain to make something much less than a good nurse, and she may very likely make one of those who bring discredit to the profession. If any of you here have entered this profession from a less worthy motive than that I have said, I counsel you to leave it.

There are certain natural gifts — such as comeliness, native deftness of the hand, the power of rapidly learning the technical matters of the art of nursing — which are beyond one's power to control, and which make it easy for their possessor to excel; but their absence need not discourage any one who has the real earnest love of the work in her from undertaking it, she will have more obstacles to overcome, that is all.

A nurse's life should be thought of as a mission only, and rightly conceived and administered I know of none higher. It is a life of self-denial, and often of the most arduous requirements, and its material benefits are few. It demands enthusiasm for the thing itself; it demands tact, strength, self-control, broad human sympathy, and above all self-forgetfulness, such absorption in her work that she has no time to think about her rights, her authority, her dignity, whether some one is intending to slight her or to undervalue her importance, or to even think of losing her temper.

If your rewards are not in material ways, there are rewards which are of a higher nature, which are to her who has the real love of her mission deep in her heart far dearer. These are the seeing pain lessen or vanish under the tender and knowledgeful touch of the hand, of being the saver of lives, and the restorer of strength; of the consciousness of lifting the heavy burden of dread and anxiety from the friends and family of the sick, of putting order and system in the place of disorder. Her efforts will not meet with loud applause, often her best work will not be appreciated, or will pass unnoticed, even; but often she will draw to her the deep gratitude of those for whom she works, and she will always have that best of rewards — satisfaction with herself.

I would not be understood as exacting that the nurse should be a being of more than earthly perfection. I have asked nothing of her that does not fall within the actual attainments of a really good woman who has a special fitness as well for this particular work. We do not look to you to be angels of heaven, but there have been some of your band that have shown themselves angels of earth, women who have carried the blessings of their womanly sweetness and tenderness, and executed their errand of mercy with ungrudging unselfishness on battlefields, amidst fatal epidemics, and in the more commonplace but not less important task of tending the sick in the daily routine of ordinary home-nursing, in a way that should make all men honor them, and which has made men honor them. They have lighted the way in so doing for those who follow them, and no one of you should be content to strive for less than they have actually accomplished. Put on one side all pettiness and all smaller motives when you confront illness, and forget that you exist except as soothers of pain.

The power to contradict the dissatisfaction with the trained nurse lies with you who are going out to-day into the families of the people who need you; and I am sure that you can be relied upon to make her name welcomed and honored in many households where it is now discredited because of the unworthiness of a few who have misconceived the obligations and the nature of their work.

Original Articles.

PULMONARY ABSCESS AND GANGRENE.[1]

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Pulmonary gangrene is due to the growth in the lung of saprophytic bacteria, probably largely anaërobic, or at least facultative anaërobic. These saprophytes, however, according to Babès,[2] cannot of themselves produce gangrene, but are inevitably associated with some other organism, generally a pyogenic coccus. Thus in 12 cases he found the association to be with the staphylococcus, in 12 with the streptococcus, and in three with an extremely virulent pneumococcus. Indeed, all these cocci showed remarkable virulence. But these of themselves could only effect suppuration or necrobiosis, while upon the soil thus made ready the saprophytes found a favorable condition for growth. Other concomitant microbes were those of diphtheria in 10 out of 24 cases.

These teachings of bacteriology are in accord with the clinical observation that gangrene is often connected with abscess. Even where the initial disease has been pneumonia or phthisis, pus formation often intervenes between this original affection and the consequent gangrene. In many cases an accumulation of pus is expectorated representing a simple abscess, but as the cavity successively refills, the discharge becomes increasingly fetid.

Thus gangrene is never a primary affection. Its commonest precursors are certain diseases of the lungs themselves, notably pneumonia, phthisis (with cavity formation), broncho-pneumonia, peri-bronchitis, bronchitis (especially if putrid or accompanied by bronchiectasis). Indeed, the bronchi are the paths through which the mixed infection enters. As Babès expresses it, "the microbes of pneumonia are the first to clear the barrier which the termini of the bronchi oppose to them, and they prepare the soil for the development of the saprogenous organisms, and so for the gangrene."

Foreign bodies, as cherry-pits, particles of food, coins, etc., have produced gangrene. A patient once told me that while "logging" some years before, he was smoking a clay pipe, when he was struck under the chin by a log, and was rendered unconscious. The pipe was found broken on the ground. Soon after, the patient developed a cough, with fetid expectoration. He lost much flesh and strength, and his physicians diagnosticated phthisis. After a year or two he had an unusually violent spasm of cough, which brought up the missing end of his pipe-stem; his "phthisis" disappeared, and with the healing of what was doubtless a local gangrene he regained his former health.

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[1] Read before the Boston Society for Medical Improvement, November 29, 1897.

[2] Babès: La Semaine Méd., 1895, xv, p. 528.

Other causes of gangrene have been pulmonary emboli, traumatism and possibly gas-poisoning.

Again, the predisposing causes of this affection may lie outside the lungs, in the form of retro-pharyngeal or tonsillar abscesses; as has already been intimated, in diphtheria, and in other infectious diseases — as measles, scarlatina, small-pox, erysipelas, and, most frequently of all, grippe.

The gangrene may be even metastatic, as in a case mentioned by Babès, where there was cancer of the pylorus, with gangrene *in situ*, and a metastasis to the lungs not of the cancer but only of the gangrene.

Such being the conditions antecedent, especially if in addition the resistance of the body be diminished by want, cold, alcoholism or convalescence from severe disease, or by a vice of nutrition like diabetes, the final step is the implantation on this receptive soil of the saprophyte, which doubtless varies in different cases, for gangrene is not due to any specific organism. E. Leyden and M. Jaffé[3] were inclined to incriminate the leptothrix buccalis, or rather a variety of it, leptothrix pulmonalis. But later observers have found various other organisms involved, including spirillæ from the mouth and anaërobes like the bacillus of malignant edema, and one resembling the coli communis.

The records of the Boston City Hospital, including both medical and surgical services since the year 1880, contain altogether 16 cases diagnosticated "pulmonary abscess" and 20 diagnosticated "pulmonary gangrene." The two classes, however, were so intimately connected that it has seemed wise to consider them together.

Of these 36 cases 20 died in the hospital. Of the remaining 16, four were discharged not relieved and all probably destined to die; eight were said to be "relieved," but several of them were not in a promising condition, and four were discharged "well." In eight of the cases there were autopsies, and these cases I will describe as briefly as possible:

Case I. J. A. R., age fifty, farmer. (Service of Dr. Folsom.)

July 3, 1884. Always well till two months ago. Cough with expectoration, at first slight, muco-purulent, then increasing in amount. One month ago it became dark in color and fetid, and so continues. Cough now constant. Emaciation. No pain. Some dyspnea. Temperature 100.4°, pulse 100, respiration 30. Sputum brown, copious, foul, odor perceptible ten feet away from patient.

Heart apex, nipple line; short presystolic murmur.

Left chest, front and back, has coarse and fine moist râles, occasionally sonorous. Right side, similar signs; and an area of dulness in front, most intense at level of third rib, extending nearly from clavicle to nipple. Obscure respiration, diminished voice; corresponding signs in back. Increasing pain in right chest; dyspnea; later orthopnea.

Died July 14th.

Autopsy (July 14th). — Heart: right ventricle hypertrophied, chronic endocarditis, mitral stenosis, aortic and mitral insufficiency. Left lung and pleura normal. Right pleural cavity obliterated, except for lower one-third, which contained by estimate 750 c. c. foul-smelling, grayish fluid and foul-smelling gas; the wall lined with a recent false membrane about four millimetres thick. Pleural surfaces elsewhere adherent by a similar false membrane. The whole upper lobe of the right lung, except the anterior quarter, is represented by a grayish-black, shreddy mass with exceedingly foul smell. This gangrenous portion, occupying the posterior upper three-quarters of the lobe, was only about one-third its normal size. The remaining quarter (anterior) is pale, the alveoli filled with non-aërated fluid; the lower lobe atelectatic and carnified.

Case II. C. C., age thirty-three, weaver. (Service of Dr. Rotch.)

August 29, 1887. Has had several attacks of quinsy. Cough for eighteen months. Loss of 12 pounds in weight. Loss of strength. Expectoration free, mostly clear and watery, with clumps of pus. Two days ago pain in the left side below rib margin, with great dyspnea; now orthopnea. Temperature 102.5°, pulse 126, respiration 45.

Soft systolic murmur at apex of heart.

Left chest dull above eighth rib, flat below. Tympany above left clavicle. Diminished fremitus at left base, behind. Numerous moist râles, with bronchial breathing and voice; no splashing. Breathing diminished under left clavicle. A small area (two sq. in.) below angle of right scapula, indicating consolidation.

Numerous attacks of great dyspnea. Paroxysms of cough, with expectoration of two sputa-cupfulls of shreddy, white and yellow matter, without blood, with considerable pain. This was followed by relief of dyspnea.

Two days later (September 1st) there were tympany and cavernous breathing, with bubbling râles over the left lower back; abundant coarse moist râles at the right back. Pain across both sides of the chest, orthopnea. Expectoration fetid, at times abundant.

Died September 4th.

Autopsy, September 6th. — Acute pericarditis. Left pleura adherent except at lower part, which contained 300 c. c. foul-smelling, thin pus. The walls of this cavity covered with fibrin. Communicating with this cavity by a hole big enough to admit the thumb was a cavity in the lung itself, as big as a lemon, partly filled with cheesy material, and walls shreddy. Throughout the left lung numerous cavities with cheesy walls, mostly in the upper lobe. Intervening portions of lung in lower lobe partly solidified, dark red in portions, shreddy and gangrenous.

Right pleural surface adherent over lower lobe, which was partially solidified, containing recent broncho-pneumonic nodules, gangrenous. Middle lobe contained several circumscribed cheesy tuberculous nodules. Bronchial mucous membrane of left lung purplish in color, shreddy. Odor of both lungs, especially the left, very foul.

Here the original disease was evidently tubercular, of a year and a half duration. A cavity had formed, had become gangrenous and burst into the pleura, with the formation of a gangrenous empyema. There was a gangrenous bronchitis and diffuse gangrene of the lungs. A recent broncho-pneumonia of the healthier lung had then developed and had itself become involved in the gangrenous process.

Case III. H. C. P., brakeman, age twenty-six. (Service of Dr. Sumner.)

February 5, 1889. Four days ago chill, headache, nausea, vomiting, fever, epistaxis. Temperature 102°, pulse 112, respiration 52. Well developed and nourished.

Systolic murmur at apex, and heard in axilla. Pulmonic second sound increased.

Three days later signs of consolidation on right side (middle lobe) with friction rubs. February 9th there were fine râles also in the left axilla; and two days later bronchial breathing. There is no record of offensive sputa.

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[3] Deutsch. Archiv. f. klin. Med., 1866, ii, p. 488.

Died February 13th.

Autopsy.— Left pleural cavity showed no fluid; here and there circumscribed area of false membrane. On section of the lung corresponding to these points were found abscesses the size of a pea. Remaining portions of lung firmer than usual and edematous.

Right pleural cavity contained three litres of fluid, right lung collapsed, atelectatic. Pleural surface covered with false membrane. In outer portion of right lower lobe a circumscribed mass, size of an English walnut, gangrenous, grayish-black and purple.

Spleen enlarged five times. Adherent to diaphragm. On section the neighborhood of this adhesion contained a gray and softened mass the size of an English walnut. Follicles enlarged.

The history and physical signs of this case would have warranted the diagnosis of pneumonia, and the death was at a period not too late to correspond to the crisis of that disease. Nor was there any odor to the sputum to give a hint of the gangrenous process going on in the lung. The softened spot in the spleen was regarded by the pathologist as an anemic infarction.

Case IV. H. C. H., male, age sixty-two. (Service of Dr. F. H. Williams.)

July 23, 1891. Mother died of phthisis. Patient sick six weeks. Cough, much dark sputum. Percussion high pitched, both apices. Respiration harsh, especially at left apex. Few moist râles at both apices, most numerous on left. No tubercle bacilli found.

Died August 6th.

Autopsy.— Showed chronic pleurisy in right lung. Fresh fibrinous pleurisy in left. The greater part of the right upper lobe was a trabeculated cavity, more or less filled with thick, dirty, gray fluid, with many small, soft, yellow, opaque masses. In some places the cavity extended to the pleura.

Case V. M. P., widow, age forty-four. (Service of Dr. Withington.)

July 31, 1895. Three years ago pneumonia. Was sick two weeks; slow recovery. Cough off and on since. Loss of weight. One month ago gave up work, the cough being worse. Vomiting for two weeks. Diarrhea for four days. The temperature, at first 99°, rose for five days, then declined gradually and was subnormal the day of her death.

The physical examination showed dulness at right apex, front and back; prolonged expiration, fine râles. There was no amphoric breathing and no bad odor of sputum. Percussion over right chest revealed marked tenderness.

Autopsy. — Both lungs strongly adherent to costal pleura. Left lung of increased density; on section mottled red and gray; upper lobe near apex showed small calcified masses. Right lung, whole upper lobe replaced by a cavity through which ran many trabeculæ corresponding to bronchi and blood-vessels. The whole cavity filled with dirty grayish fluid, containing many larger or smaller soft yellow masses. Lower lobe edematous. The abscess cavity of the upper lobe extended a short distance into the lower and beneath this for a short distance was a grayish, granular, irregular, solidified area. A probe passed into bronchus in upper lobe entered at several points into the cavity through small openings. In the lower wall of the cavity were small pockets of thick yellow pus.

Spleen enlarged, with fibrous adhesions to the diaphragm.

In this case, despite the absence of physical signs during life of the abscess, the marked local *tenderness* should have suggested it. I am inclined to think this symptom is of considerable value in the diagnosis of abscess.

Case VI. W. H., stoker, age twenty-eight. (Service of Dr. Withington.)

September 25, 1895. Sick ten months with cough. Many hemorrhages last winter. Much expectoration, green. Copious hemorrhages last two weeks; finally one so severe that he was brought in by the police.

No formal physical examination was made on account of the hemorrhages. Stethoscope shows râles at both apices. Temperature 105°.

Died September 28th.

Autopsy by medical examiner showed gangrene of greater part of the right lung. The sequence was thought to be pneumonia, abscess, gangrene.

Case VII. J. H., roofer, age sixty-seven. (Service of Dr. V. Y. Bowditch.)

March 14, 1896. Cough for two or three years, with considerable expectoration, sometimes bloody. Worked till four weeks ago. Since then cough has been worse, with abundant purulent expectoration, rapid emaciation, difficulty in swallowing, pain in chest, back of neck and throat; dyspnea.

Patient moribund on entrance. Sputa greenish, very foul. Resonance poor over both fronts. Under right clavicle, over area two and a half inches in diameter, breathing amphoric, and at times almost metallic.

Died soon after entrance.

Autopsy.— Pleuræ on both sides show many fine adhesions easily separated. Right pleura greatly thickened over upper lobe. Whole right upper lobe taken up by a cavity which was separated from pleura by thin wall only. This cavity contained much thick, foul-smelling, muddy fluid, with small pieces of detached gangrenous lung substance. The walls of the cavity were rough, with irregular softened masses of lung substance projecting into it. Other portions of the left lung normal. Large amount of pigment.

Acute vegetative endocarditis.

Bacteriology: A cover-slip from the cavity in the right lobe showed numerous large and small bacilli and cocci. Cultures: diffuse, transparent, stringy growth — large bacilli faintly staining, rods, cocci, bacilli surrounded by a definite capsule. Pure culture from the lung was injected into a guinea-pig at 12 m. The animal was found dead at 7 a. m. following. Cover-slips from its peritoneal fluid showed numerous capsulated bacilli, the same as in the pure culture. The same also in cover-slips from heart's blood and spleen.

Case VIII. W. J., mulatto, age twenty-seven, asphalt worker (has worked much nights by gasolene flambeaux in the subway). (Service of Dr. Withington.)

May 6, 1897. Cough six months. Lost 20 pounds in weight; white expectoration. One week ago, chill for one hour. Pain across front of chest, worse on right, especially in axilla. Expectoration became black; no blood. Temperature 101°.

Heart area increased, both right and left. Dulness in right back at mid-scapula. Bronchial breathing and voice. Numerous coarse and fine moist râles. Sputum abundant, inky-black, very foul. No tubercle bacilli found.

May 10th. Coughing excessive, causing much abdominal pain. Amphoric breathing in middle and upper right back. Aspirator needle introduced into this cavity withdraws the same inky, fetid fluid which he expectorates.

May 14th. Transferred to the surgical side for operation; but his condition became too bad to admit of it, and he died before evening.

Autopsy.— There was a rupture of both recti muscles at their lower part, with considerable hemorrhage, caused evidently by the violence of the cough. The muscle-fibres showed Zenker's degeneration.

Pleural cavities both completely obliterated. Lungs and lymphatic glands over pericardium intensely black (anthracosis). Left lung: pleura thickened; on section lung tissue very dense, with some fairly large solidified areas; no caseation. Right lung: upper lobe almost entirely disappeared, leaving large cavity through which ran numerous trabeculæ of blood-vessels and bronchi. It contained thin, inky fluid, but no lung tissue was left; middle and lower lobes distended and solidified; on section smooth, intensely black. The bronchial glands and the retro-peritoneal glands to two inches below the celiac axis were strongly pigmented.

Spleen enlarged.

Cultures from the heart and liver were sterile; from spleen, colon bacilli; from kidney, streptococcus, pneumococcus, colon bacilli; from lungs, pneumococcus and streptococcus; and from the gangrenous cavity, a great variety of other organisms.

This case is of interest from the intense anthracosis. The man had had a cough for months, and the autopsy showed no tuberculosis. There was acute pneumonia, followed apparently directly by gangrene, without the intervention of any abscess. Although he was an athletic fellow, the recti muscles showed degenerative changes and the violence of the cough had ruptured the bellies of both recti completely across.

Of the remaining cases in this series it is, of course, impossible to speak in detail. A study of them, however, warrants the following deductions:

Of the 36 cases, the large majority were males (80 per cent.).

The patients were mostly in mid-life, a large majority being between twenty and forty-five years of age. The youngest was nine and the eldest sixty-seven.

The distribution of the lesion, so far as determined, was as follows:

Right upper lobe in	7 cases.
Left upper lobe in	2 cases.
Right lower lobe in	6 cases.
Left lower lobe in	15 cases.

In five patients the distribution was multiple, the lesions occupying more than one lobe, usually of the same lung. In two or more cases they were distributed through both lungs.

ETIOLOGY.

The histories of these cases show that in eight of them phthisis was a probable antecedent of the gangrene, and in sixteen, pneumonia. In a few cases both phthisis and pneumonia undoubtedly existed. In the four cases of recovery the antecedent disease was pneumonia.

Diphtheria.

Case IX. A. S. (Service of Dr. Mason.)

February 13, 1894. History of pneumonia from February 6th. Flatness below the fourth rib. Patient developed diphtheria February 26th and having recovered, was retransferred from the contagious ward March 10th. There was then dulness over left upper lobe, with fine râles at the base of the left axilla; tubular breathing. An aspirator brought pus, which showed chiefly putrefactive bacteria. No tubercle bacilli. Transferred to surgical side for operation.

March 19th. Sixth rib excised. A cavity in lower lobe of left lung was found, three inches deep. From this three ounces of blood and cheesy pus was removed.

Patient died March 23d.

Other possible etiological factors included —

Suppuration.

The most marked case of this was in a woman in my own service who had had ulceration of the upper teeth with great swelling of the face. After suffering in this way for five weeks with marked vomiting and prostration she had the teeth extracted. Five days later she developed pneumonia, and later gangrene of the right lower lobe. The gums were still actively suppurating during this time. After three weeks of severe illness she recovered.

Another patient had a perineal section June 5th, which was followed about July 1st by fetid empyema. This was operated upon, and later signs of pulmonary consolidation and then gangrene appeared in the left lower back.

A third patient had gangrene developing about two months after a septic foot. Unfortunately, the duration of the suppuration of the foot is not given, so that its connection with the pulmonary gangrene is not certain.

External Trauma.

A patient was struck in the side by a heavy quarter of beef, and from that time was not well. There was a stitch in that side on breathing. Three weeks after, on entering the hospital he showed consolidation and gangrene on the same side, and died in two weeks.

MODES OF EXTENSION OF THE GANGRENE.

I take leave to cite two cases which illustrate in an interesting manner the extension which the suppurative or gangrenous process may take if the patient's life be sufficiently prolonged. In the first of the two the extension was peripheral, in the second peripheral and also central.

Case X. Pneumonia, abscess, gangrene, pyo-pneumothorax, gangrenous cellulitis. (Service of Dr. Withington.)

T. S., age fifty-four, laborer, entered the hospital May 25, 1897. Had had bronchitis for years; one month ago pneumonia, from which he did not recover. For last two weeks has lost ground steadily. During the last week fetid expectoration and delirium. Temperature 103°, pulse 120.

A long narrow tumor occupied the left back, extending from the top of the thorax somewhat below the last rib and some six inches in width. It both fluctuated and crepitated. Over the upper portion the cracked-pot sound was heard on percussion. Succussion present.

On introducing a needle, fetid pus began to flow as soon as the point reached the subcutaneous tissue. As the man's condition was too grave for formal operation, one of the surgeons at my request made a long vertical incision without moving the patient from bed. This was followed by a copious gush of serum and very fetid pus. The finger introduced through this incision came upon much disorganized tissue and also felt two ragged holes between the ribs near the spine of the scapula through which evidently the gangrenous pus, having first infected the pleura, had then burst out of the thorax.

The operation failed to give any relief, the patient continued cyanotic and delirious, and died in about four hours.

The pathologist reported upon the pus, that it contained pneumococcus, streptococcus and staphylococcus pyogenes albus. The supervention of gangrene upon abscess was sufficiently evident.

Case XI. D. S., male, age forty-one. (Service of Dr. Doe.)

May 3, 1880. Had been sick three weeks. Pain in left chest, cough, fever. Sputum abundant, of gangrenous odor. Signs of consolidation in lower half of left back, with crepitation in left axilla. Later signs of fluid at left base.

May 17th. Aspirated 15 ounces of pus with blood, odor of H_2S.

May 22d. Again aspirated, 11 ounces of pus, having typical odor of gangrene.

May 31st. A third aspiration, of one ounce of very offensive pus. Cavity injected with carbolic solution (1–80), which *comes out of mouth.*

June 1st. Sputum bloody-purulent, with odor of carbolic acid. For the next four days no gangrenous odor.

June 9th. Aspirated one ounce of pus from below angle of scapula; needle inserted in axilla entered consolidated lung.

June 28th. Patient discharged, "well."

The sequence of events here was apparently pneumonia, gangrene communicating with a bronchus, then extending peripherally, local pleurisy, fetid empyema. Free communication was shown by the aspirating needle from the pleura through lung, bronchus and trachea to mouth. The gangrenous focus was apparently drained chiefly inward.

PROGNOSIS.

In this series of cases, four, or 11 per cent., were discharged as "well"; and if we assume that two of the cases discharged as "relieved" were likely to recover (as seems probable), the total recoveries are 16 per cent. Wilson Fox, in his great work, says he has seen but one case recover. But the figures which he quotes from other authorities correspond pretty well with those of our cases. Lawrence had seen eight cases recover out of 68, and Lebert six out of 32. Leyden reports seven recoveries in eight cases!

TREATMENT.

Most of these patients were given supporting treatment, combined in many instances with creasote inhalations. In my own cases I confess to seeing little gain from antiseptic inhalations, though writers generally recommend them.

If the mouth is, as seems probable, the source of the saprophytic organisms which are the direct cause of gangrene, the careful use of antiseptic mouth-washes would seem to be an important feature, both in the prevention and treatment of the disease.

Guaiacol has received favorable attention as a pulmonary antiseptic. Various French writers, among them Plique[4] and Lop,[5] recommend its use in pulmonary gangrene by injection. A solution of equal parts of guaiacol and oil of sweet almonds sterilized at 100° C. is employed, and two grammes are injected from one to four times daily.

These injections are usually made subcutaneously, but have also been made locally. Their employment directly in the gangrenous focus has been recommended by several authors, by whom other antiseptic agents have also been used. Similar injections have also been thrown in between the tracheal rings, but this procedure is too dangerous to be recommended. Lop reports three recoveries under the subcutaneous use of the guaiacol mixture.

Richardière[6] advocates the conjoint use of guaiacol and oxygen, a solution of the former being put in a wash-bottle and oxygen passed through it prior to being inhaled. Two cases of recovery are reported, neither of them, however, so severe as to give great assurance of the curative value of the medicament in serious cases.

The surgical treatment of pulmonary gangrene (as of abscess) offers very varying degrees of difficulty, according to the relation of the gangrenous focus to the pleura, or more definitely, according as the pleura has, or has not, been the site of such a local inflammation as has by adhesions shut off the portion overlying the diseased focus from the general pleural cavity. In other words, the conditions are similar to those affecting pelvic and abdominal abscess with relation to the general peritoneal cavity. The surgical prognosis, therefore, varies in the three following classes of cases:

(1) If a general infection of the pleura has taken place, one has to do with an universal fetid empyema, which increases the gravity of the prognosis, but which leaves no doubt as to the surgeon's duty of opening and fully draining the pleural cavity as well as of trying to establish free communication with the intrapulmonary gangrenous focus.

(2) If, on the other hand, the pleura has formed adhesions over the part of the lung affected, we have the most favorable condition possible, and through this encapsulated or adherent portion of the pleura drainage of the gangrenous lung can be effected with some hope of cure. It is probable that most of the cases of cure by pneumotomy come in this category.

(3) A third and much graver condition is that where a focus of gangrene exists wholly within the lung and without any adhesive inflammation of the pleura covering it. Here the operation of opening the pleura causes prompt collapse of the lung, the diseased portion draws away from the parietes and a cleft of such size is formed that (*a*) drainage of the cavity is difficult, and (*b*) general infection of the pleura is certain.

Of the cases in our present series only four were operated upon. In the first the lung was adherent to the pleura at the seat of the operation but no pus was found. Patient died two days later. In the second (see Case IX) blood and pus were removed from a cavity in the lower lobe three inches deep, and the patient died on the fourth day. Particulars of the state of the pleura are not given.

Another case, which is fairly typical of the third class of conditions above referred to as especially unfavorable (a focus wholly within the lung with no adhesive pleurisy over it), is as follows:

Case XII. A. D., age fourteen, bootblack.

Sick one month, in bed eight days. Left chest shows flatness below angle of scapula. Above this an area of tympanitic resonance, which changes position with movement of patient. Absence of fremitus, resonance and inspiration. Temperature 101°. Breath very offensive. Sputum abundant, brown, a cupful at a time — consistency of cream, fetid. Attacks ushered in by cough, followed by much prostation. Transferred to surgical side for operation.

Diagnosis on medical side, "abscess"; on surgical side, "gangrene."

Operation June 22, 1891, by Dr. Gay. Incision in postaxillary line, three inches, at right angle to ribs, from seventh to ninth. Incision at eighth interspace into chest. No pus found at first; but the probe being passed upwards reached pus, brownish-gray, very foul and in large quantity. Probe entered seven inches into an abscess cavity of the lung. Cavity irrigated with corrosive solution (1–5,000), followed by boric acid (two per cent., hot), double drainage-tube, iodoform gauze, daily dressing.

July 1st. Temperature began to rise, especially evenings. Expectoration foul, profuse; cough frequent.

July 6th. Died.

The fourth case, and the only one which recovered after operation, was not a pneumotomy, but really an empyema operation. The sputum was not offensive, the abscess of the pleura was shut off from the general cavity, and on irrigation of it some of the fluid introduced was coughed up, causing considerable strangling of the patient and demonstrating that there was pulmonary abscess communicating with that of the pleura.

These operative results are not so encouraging as some writers lead us to expect. For instance, Lop[7] had in 12 cases of pneumotomy seven recoveries: three were relieved and two died. In 31 cases which he collected, 17 were cured. The indications which this author gives for operation in gangrene are:

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[4] Gazette Med. de Paris, 1895, ii, p 411.

[5] Gazette des Hopitaux, Paris, 1893, lxvi, p. 219.

[6] L'Union Medicale, August 10, 1895.

(1) Two weeks of medical treatment including guaiacol injections, etc., without relief.

(2) Where auscultation shows a definite cavity.

(3) Where the gangrenous focus shows evidence of being covered by pleural adhesions and its seat is such as to be accessible.

Now it is just the difficulty of demonstrating that the pleura is adherent around the point of the intended opening which constitutes the source of doubt and danger.

Krause[8] advises, in case the pleura is found not to be adherent, a double operation: (1) resection of the necessary ribs and the establishment of adhesions either by stitching the pleura, packing with iodoform gauze, the use of the Paquelin cautery or other means; (2) after waiting five or more days till the pleural cavity is shut off, the gangrenous cavity is opened and drained. The difficulty with this deliberate procedure is that it presupposes that the patient's condition is not one of great urgency. Unfortunately, before five days there is quite a chance that the patient will be forever free of any need of further operation.

I close with what seems to me a needed word of caution as to the use of the aspirating needle in this class of cases. The comparative safety with which exploratory punctures may be made in the various cavities of the body may lead us to forget what may happen if the needle is plunged into a gangrenous or suppurating cavity of the lung, the pleura being sound and not adherent. Is not the withdrawal of the needle, charged with putrid matter, likely to inoculate the pleural cavity as it passes through it, and so produce that much to be dreaded complication, a general fetid empyema?

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A STUDY OF THIRTY-SEVEN FATAL CASES OF CIRRHOSIS OF THE LIVER.[1]

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Considerable confusion exists not only pathologically and etiologically but also clinically as to the classification of cirrhosis of the liver. The cases may, in a general way, be divided into two main classes, according as the size of the liver is diminished or increased. The first is usually spoken of as atrophic; the second as cirrhosis with enlargement or hypertrophic. Both are the result of an abnormal development of connective tissue; in one case contraction being a prominent feature, in the other not. In both also various changes of greater or less extent, probably secondary in origin, occur in the liver cells. The former conception of atrophic cirrhosis with its attendant symptoms as a result of the overgrowth of the connective tissue of the portal system only, and of hyperthrophic as the result of that of the biliary system only, cannot now be accepted but in a greatly modified form, as the process is always a more complex one. The division into interlobular and intralobular forms is also indefinite as both conditions invariably occur together.

The great majority of the contracted livers are probably due to alcohol, although a certain number are the result of the same agents which produce the large livers or of other influences at present unknown. Hanot's classification of cirrhosis with enlargement from the standpoint of etiology is perhaps as satisfactory as any: malarial, syphilitic, tuberculous, biliary from retention, alcoholic, fatty alcoholic, and finally, perhaps belonging in a separate class, the hypertrophic cirrhosis with chronic icterus.

While there is a pretty general agreement among medical writers as to the symptomatology of the ordinary forms of cirrhosis with contraction and cirrhosis with enlargement there seems to be considerable confusion regarding that of the form described by Hanot as hypertrophic cirrhosis with chronic icterus. In fact, many writers doubt even the existence of such a form. Hence, it may be well to give briefly Hanot's own description. It usually occurs in young and feeble men, beginning with an attack of pain in the right hypochondrium, associated with symptoms of disturbed digestion. This is soon followed by jaundice, which is persistent and gradually increases. Crises of pain and indigestion occur at intervals, but at other times there are no symptoms. Enlargement of both liver and spleen begins early, and is progressive, both becoming enormous. There is no ascites or venous enlargement, and the feces remain of normal color. The nutrition is maintained unimpaired for a long time, cachexia rarely appearing under four years. The course is from two to twelve years, more often the longer period. The cause is obscure, although alcohol, syphilis, malaria and lithiasis have seemed of etiological importance in some cases.

It was with the hope that something of interest might be learned concerning the etiology and symptomatology of these somewhat obscure conditions that this study was undertaken, and the medical records of the Boston City Hospital for the seventeen years ending with 1896 investigated. During this period 50,347 cases, exclusive of diphtheria and scarlet fever, were admitted to the medical wards. In 333 of these, or .66 per cent., the diagnosis of cirrhosis of the liver, either as the principal or as a complicating condition, was made. In the nearly 2,000 autopsies made on medical cases, exclusive of diphtheria and scarlet fever, during this same period, the clinical diagnosis of cirrhosis of the liver was confirmed in thirty-seven. On account of the difficulty in the diagnosis of this condition, and of the uncertainty inherent in all diagnoses unconfirmed by post-mortem examination, it seemed best to study only the autopsied cases.

For convenience of comparison they have been divided into three classes, according to the size of the liver as determined at autopsy. The first comprises the livers larger than normal, the second those of a size within normal limits, and the third those smaller than normal. It is possible that those of normal size should be considered with the small ones rather than in a class by themselves. It may be of interest to note that clinically the increased size of the liver was always recognized, and that its irregularity was occasionally noted. The livers of normal size, however, were usually considered large, while the diminution in size was recognized in about half the cases. The pathological data are, unfortunately, nearly all microscopic and of little use except in establishing the diagnosis of an increase of connective tissue with greater or less destruction of liver tissue and increase of fat. Chronic perihepatitis was noted in one of the large livers, in four of those of normal size, and in three of the small. The following table shows some interesting general points: It appears from this table that cirrhosis with enlargement, without change in size and with diminution in size, are equally frequent, and that the size of the liver is increased in a third of the cases. The male sex is more frequently affected. Cirrhosis with enlargement is more common in younger people, and cirrhosis with atrophy in old. The average duration of symptoms is longer in the atrophic cases. The duration of symptoms, however, varies within wide limits in all varieties. Hemorrhage is a not infrequent cause of death in all forms, and a fatal hemorrhage may be the first symptom even in the hypertrophic form. An alcoholic history was obtained in every case in which the subject was investigated. A history of previous malaria, syphilis or gall-stones was occasionally obtained, but in none did it seem of etiologic importance.

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[1] Reprinted from Medical and Surgical Reports of the Boston City Hospital, 1897.

[7] Loc. cit.

[8] Berliner klin. Woch., April 22, 1895.

	Large Livers.	Normal-Sized Livers.	Small Livers.
Number of cases	13	11	13
Average age at death	40	52	49
Sex	Males 9	Males 6	Males 8
	Females 4	Females 5	Females 5
Average duration from first symptom in cases in which death not due to complication [1]	In eight cases 14 mos.	In six cases 9 mos.	In ten cases 25 mos.
	Shortest 8 "	Shortest 3 "	Shortest 3 "
	Longest 30 "	Longest 24 "	Longest 72 "
Cause of death	Stress of disease 10	Stress of disease 8	Stress of disease 9
	Hemorrhage 1	Hemorrhage 2	Hemorrhage 2
	Complications 2	Edema of brain 1	Complications 2
Cause of disease	Alcoholic history 13	Alcoholic history 6	Alcoholic history 11
	No data as to alcohol 0	No data as to alcohol 5	No data as to alcohol 2
	History of syphilis in 1 and gall-stones in 2. Gall-stones not of importance as ducts free.	History of syphilis 1	History of malaria 2
		" " malaria 1	(Both alcoholic cases.)
		(Non-alcoholic cases.)	

In the following table the individual symptoms and their relative frequency in the different classes are considered. As complete data were often wanting in the records it seemed best to also compare percentages made up only from the cases in which the data were complete.

Among other symptoms pain in the region of the liver was mentioned two or three times in each class, but tenderness was never noted. Swelling of the feet and dyspnea were very common early symptoms in all forms, often preceding any others by months. Late in the disease anasarca and accumulations of fluid in the various serous cavities often developed. Delirium or coma, and in one case convulsions, often preceded for a few weeks the fatal termination. The brain was examined in several of these cases, and nothing abnormal found except in one case where there was edema. The brain in the case of convulsions was normal. There seemed, however, to be rather a definite relation between the nervous symptoms and jaundice.

An analysis of this table shows the following facts: Ascites was about half as frequent in the cases with hepatic enlargement as in the others, in which it was sometimes the first symptom noted. In all forms, however, it was, as a rule, rather a late symptom. Jaundice occurred, sooner or later, in more than half of all the cases; more often, however, in the cases with hypertrophy, in which it also, as a rule, occurred earlier and lasted longer. In the hypertrophic form it often occurred in cases in which ascites never developed, rarely without ascites in the others. It sometimes preceded ascites, especially in the cases with enlargement, but more often followed it. The abdominal veins were dilated in somewhat less than half of all the cases; proportionately more in the hypertrophic form. Hemorrhages from the alimentary tract occurred in about one-quarter of the cases, but were less common in the cases with enlargement. Indigestion was more or less troublesome in all forms, being one of the earliest and most persistent symptoms. The nutrition was retained practically unimpaired in all the cases with hepatic enlargement and in about three-quarters of the others.

The inconstancy of the symptoms and the irregularity of their development, both absolutely and relatively, is most striking. In comparison with the others the cases with hepatic enlargement maintained their nutrition better, had jaundice more frequently and earlier, developed ascites less often and later, and were less subject to hemorrhage. It is to be noted that none of the cases resembled in their symptomatology the hypertrophic cirrhosis with chronic icterus of Hanot.

The size and condition of the spleen seems worthy of special attention. It was of normal size in one and enlarged in twelve of the cases with hepatic enlargement; normal in two, and enlarged in nine of the normal-sized livers; normal in three, and enlarged in ten of the atrophic form. The maximum weights were respectively 1,200, 600 and 1,200 grammes. No relation was evident in any form between the size of the spleen and the duration of the symptoms or the amount or duration of the ascites. Three of the cases with hepatic atrophy with marked ascites showed no splenic enlargement. On the other hand, some of the largest spleens were found in cases in which there was no ascites. Moreover, the spleen was enlarged in most and of increased density in all of the cases in which death occurred early from complications. Unfortunately, no microscopic examinations of the spleens were made. The condition was often described as passive congestion, and sometimes as a hyperplasia of the pulp. Chronic perisplenitis was present in four of the first, three of the second and six of the third class.

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[1] In one each of the large and normal classes a fatal hemorrhage was the first symptom.

The early development of splenic enlargement and the apparent independence of ascites and splenic enlargement of each other seem to suggest some other or additional cause for the enlargement than portal congestion. This discrepancy has already been noted by Oestreich who, after a careful study of the clinical histories, autopsies and microscopical examinations of the livers and spleens of early and late cases of cirrhosis, comes to the conclusion that "the existence of the splenic tumor in cirrhosis of the liver is independent of the liver and due to irritative processes." The irritant is the same as that which causes the diseased process in the liver.

Symptoms.	Large — 13		Normal-11		Small—13		Total—37	
	Absolute Number.	Percentage.	Absolute Number.	Percentage.	Absolute Number.	Percentage.	Absolute Number.	Percentage.
Ascites —								
Present in	5	39	8	73	10	77	23	62
Av'ge duration	5 mos	..	6 mos	..	4 mos	..	5 mos	..
Shortest "	1 mo	..	5 wks	..	3 wks	..	..	..
Longest "	1 yr	..	2 yrs	..	1 yr	..	..	..
First symptom	0	..	4	36	1	8	5	14
Jaundice[1] —								
Present in	9	69	5	45	8[2]	61	22	59
Av'ge duration	5 mos	..	2 mos	..	3 mos[3]	..	..	..
First symptom	1	8	0	..	0	..	1	3
Without ascites	4	31	0	..	2	15	6	16
Preceded "	2	15	0	..	1	8	3	8
Followed "	3	23	5	45	5	39	13	35
Large veins —								
Present in	3	60	1	17	4	31	8	40
Abdominal	3	..	1	..	3	..	..	..
Hemorrhoidal	1	..	1	..	1	..	..	..
Hemorrhage[4]	2	15	3	27	3	23	8	22
Vomitus	2	..	3	..	2	..	7	..
Stools	1	..	3	..	3	..	7	..
Indigestion	6	75	7	100	7	89	20	87
Slight	2	..	3	..	2	..	..	..
Moderate	2	..	1	..	3	.	..	..
Marked	2	..	2	..	1	..	..	..
Av'ge duration	7 mos	..	5 mos	..	6 mos	..	..	..
First symptom	3	37	1	14	1	13	5	25
Nutrition — Good	12	100	7	70	9	75	28	82
Poor	0	..	3	30	3	25	6	18

The associated chronic complications in the other organs were as follows:

Complications.	Large. 13	Normal. 11	Small. 13	Total. 37
Heart — Hypertrophy left ventricle.	3	3	3	9
Fatty degeneration.	2	3	..	5
Fibrous myocarditis.	1	..	..	1
Chronic fibrous pericarditis.	1	1	1	3
Arteries — Chronic endaortitis.	3	4	4	11
Lungs — Tuberculosis, active.	..	..	2	2
Healed.	..	2	1	3
Chronic bronchitis.	..	2	1	3
Pleura — Acute fibrinous pleurisy.	..	..	1	1
Chronic adhesive pleurisy.	2	2	4	8
Gastro-intestinal canal — Chronic passive congestion.	2	1	..	3
Chronic gastric catarrh.	1	1	1	3
Dilation of esophageal veins.	1	..	1	2
Dilatation of duodenal veins.	1	..	..	1
Peritoneum — Chronic peritonitis.	..	2	1	3
Pancreas — Chronic interstitial pancreatitis.	..	..	1	1
Kidneys — Passive congestion.	3	1	3	7
Chronic diffuse nephritis.	3	2	1	6
Chronic interstitial nephritis.	2	4	3	9

These figures agree in a general way with those of Lange, based on a considerably larger number of cases. They show, as do his, a marked tendency to interstitial changes in the serous membranes, kidneys and general arterial system. They are presumably due to the same cause as those in the liver and spleen. The pathological changes in the gastro-enteric tract are surprisingly small for a disease in which portal congestion is supposed to play so large a part.

The preceding statistics justify to a certain extent the following conclusions: Cirrhosis of the liver is a comparatively rare disease. It is the result, in the vast majority of cases, of the abuse of alcohol. Alcohol may cause either an increase or a diminution in the size of the liver. Both are due to the abnormal development of connective tissue. Why hypertrophy results in one case and atrophy in another is at present unknown. All forms have the same symptoms. There is no regularity in the relative development of these symptoms. The sequence, however, varies to a certain extent in the different forms. Portal congestion plays a less important part in the development of these symptoms than is generally supposed. Many of the associated lesions are of the same nature as those in the liver, and are due to the same cause.

LITERATURE.

Charcot. Traité de Médicine.
Graswick. Uber interstitielle Hepatitis. Bonn, 1892.
Hagan. Zur Kenntniss der chronischen interstitiellen Hepatitis. Bern, 1893.
Hanot. Le Cirrhose Hypertrophique avec Ictère Chronique. Paris, 1892.
Labadie-Lagrave. Traité des Maladies du Foie. Paris, 1892.

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[1] Clay-colored stools in two of large and one of normal class.

[2] In four of these cases it was noted that the bile-ducts were patent.

[3] In several others at intervals for two to six years.

[4] Source of hemorrhage was esophageal veins in two; duodenal in one, ileal in one, and hemorrhoidal in one.

Lange. Ein Beitrag zur Statistik u. path. Anatomie der interstitiellen Hepatitis. Kiel, 1888.
Oestreich. Die Milzschwellung bei Lebercirrhose. Virchow's Archiv, 1895, b. 142, s. 285.
Paulfranz. Hypertrophische Lebercirrhose. Würzburg, 1893.

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THE FORCIBLE CORRECTION OF THE DEFORMITY IN POTT'S DISEASE.

A Review of the Recent Literature.

BY ROBERT W. LOVETT, M.D., BOSTON.

The forcible rectification of the deformity of the spine in Pott's disease is a subject which in France and Germany is awakening the widest interest. It has hardly found its way into American or English literature yet to any extent, partly because it is all so recent and partly because each one hesitates to approach the subject in a critical way on the facts so far presented. The method is essentially one which requires the lapse of a considerable amount of time for the estimation of its real value.

The method proposed is this: the patient is anesthetized, and lying on his face is forcibly pulled upon by one assistant on each arm and leg while the surgeon leaning over him presses down upon the deformity until it yields or he sees fit to desist. The patient is then laid on his back on a padded board or enveloped in plaster from his head to his pelvis, for some months. It is claimed by some writers that permanent improvement and almost cure of the deformity may be obtained in this way.

We are taught, and analogy would lead us to believe, that traumatism to bones or joints affected by tuberculous disease renders the tissues more vulnerable to the inroads of the bacillus and the general system more likely to be affected by generalization of the tuberculosis. The forcible tearing of tuberculous bone tissue has been again and again demonstrated to be risky and attended often by meningitis or general tuberculosis. For example, in 27 cases of the forcible rectification of the deformity in hip disease recently reported by Raymond Sainton,[1] five developed fatal meningitis within two or three months of operation.

Objections on practical and theoretical grounds instantly occur:

(1) Pott's disease is a tuberculosis of bone, of the bodies of the vertebræ, and the deformity is secondary and is an incident. It has been regarded as in a measure conservative and as Nature's preliminary to arresting the disease. The essential is vertebral tuberculosis, not deformity of the spine. Were the treatment proposed the eradication of the disease, it would place it on a different plane; but the measure deals only with a symptom and a result which is of itself distressing, and sometimes disabling but which is on the whole fairly well controlled by early and efficient treatment. Other things being equal it is, of course, most desirable to improve or obliterate the deformity; but the essential of any rational treatment is first to cure the disease.

(2) The question of the occurrence of bony repair to fill in the gap caused by the tearing apart of the bodies of the vertebræ is, of course, an essential one. If there is to be no bony repair the operation is useless. It is asserted (Méuard)[2] that in Pott's disease bony repair occurs, not in the bodies of the vertebral column, but at the sides and back. But Regnault[3] quotes a specimen in the Musée Dupuytren, where a gap exists in a diseased column, but the column is stable. One must remember, as shown by experiments on the cadaver,[2] after rectification, that the gap to be filled may measure two to six centimetres or more. No pathological evidence beyond the specimen of Regnault has been adduced to show that bony repair of the vertebral column of a character likely to support weight is likely to occur. Chipault, the modern originator of the method of forcible correction, and the predecessor of Calot, who seems to have reaped the glory, lays much stress upon ligature of the spinous processes in Pott's disease; not only does he ligature them after forcible correction, but as a routine method of treatment of Pott's disease in children even before the occurrence of deformity he advises "ligature by a silver wire of the spinous apophyses corresponding to the diseased region, a ligature followed by immobilization."[4] A stout silver wire is twisted from one spinous process to another, so as to embrace and steady the whole area affected. After forcible correction Chipault has either wired the spinous processes together or has clamped the laminæ together by an appliance somewhat like Malgaigne's patella hooks. A column supported in this way has, he says, double the strength of the intact column. Upon this ligature Chipault insists as one of the essentials, not only of forcible correction but of all treatment of Pott's disease in the active stage.[5] Relapse, without this is, he says, most likely to occur.

Calot claims that bony tissue fills up the gap caused by the separation of the vertebral surfaces on the ground that radiographs show it, instancing one where there were seen two beams of bone stretched across the gap after an interval of three and a half months, eight to ten millimetres thick and two centimetres long. Again, he says that where the operation is done in two stages, weeks or months apart, distinct snaps of bony tissue are felt at the second redressement.

Ducroquet has brought forward radiographs which are said to show bony repair of the gap in the vertebral bodies.[6]

The reproductions of these radiographs in his article[7] is far from satisfying one that these statements are warranted by them. The general opinion is that the question of bony repair of the gap in the vertebræ must be regarded for the present as wholly *sub judice.* Such a process is not in line with the general behavior of bone when affected by tuberculosis and disturbed by traumatism. It cannot be dismissed as impossible, nor can it yet be accepted as proved to have occurred after the forcible correction in Pott's disease. If bony repair of the gap does not occur the operation is of questionable ultimate utility unless the spinous processes are wired, as advised by Chipault. Among those who have reported relapses are Pean, Phocas, Tausch and Lorenz[8] and Vincent.[9]

(3) One would suppose that such operations must be attended by risk to life, but the reported casualities are surprisingly few. The cord and membranes in ex-

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[1] Revue d'Orthopedie, July, 1897.
[2] Gaz. Med. de Paris, 1897, 10, s. i, 231.
[3] Comptes rend. de Soc. de Biol., 1897, 10, s. iv, 793.
[4] Chipault: Du Mal. de Pott, Paris, 1897, p. 2.
[5] Chipault: Gaz. d' Hôp., 1897, 21, 197; Presse Med. de Paris, 1897, 240; Gaz. d' Hôp., 1897, lxx, 900.
[6] Ducroquet: Cont. a l'etude de la consolidations du radies, etc. Communication to Twelfth International Congress, Section of Surgery.
[7] Calot: Arch. Prov. de Chir., 1897, vi, 65; Rev. de Ther. Med. Chir., 1897, lxiv, 573.
[8] Deutsche med. Woch., xxv., 556.
[9] Lyon Med., 27, 323.

periments on the cadaver have not shown signs of injury. Ménard [10] in correcting the deformity on the cadaver ruptured a prevertebral abscess which would have found its way into the mediastinum during life. Lorenz [11] speaks of a case where an operation was undertaken to arrest a threatened paraplegia; permanent paralysis immediately followed of a severe type.

In addition to these dangers, hemorrhage, opening up of tuberculous foci, injury to intrathoracic vessels, etc., are advanced as theoretical possibilities. It is obvious that in old cases where union has occurred fracture of the spine will result from attempts at correction sufficiently forcible. Such an accident is reported by Malherbe,[12] where a deformity has existed for eight years in a patient twelve and a half years old.

The results quoted are surprisingly good.

Calot comes first with 204 forcible corrections. There were no accidents, no deaths on the table. Two children died inside of three months, one of broncho-pneumonia and one of meningitis. In eight cases of paralysis, six cures resulted within eight days. In one case partial paralysis came on some days after correction. Twenty of his operated cases walk already; but his end results are too recent to be worthy of serious consideration. He states that the x-ray shows the process of repair to be finished five to ten months after operation, sometimes requiring fifteen months. The criticism of Calot's figures made by M. Monod [13] seems reasonable. In a critical report of the papers of Chipault, Calot and Ménard he made the statement that the statistics of Calot were too good, and for that reason would not carry weight. On the other hand, it must be remembered that Calot operates at Berck-sur-Mer under the most favorable hygienic conditions; and, as one of his critics said, could venture on things unsafe in cities.

Chipault has operated for four years. He says there are many relapses, and that unless the apophyses are fastened together, practically all will relapse.

In England, Jones and Tubbey [14] have done 11 reductions. In six they obtained immediate and complete rectifications, in five only partial.

Lorenz has been already quoted with one case of paralysis, and at the same time relapse of the deformity.

Jonnesco [15] reported three deaths in 13 reductions, one from chloroform, one death unexplained by autopsy forty-eight hours after reduction, and one death from broncho-pneumonia after eight days. Most of the series of cases are, however, much more favorable.

As far as figures go to show immediate dangers, one must admit that if representative cases are reported, the immediate results are altogether more favorable than could have been predicted on theoretical grounds.

The limit of applicability is indefinite. Cases of three and four years' duration have been often corrected, and adults and children have yielded equally good results. Calot makes in doubtful cases traction of 40 to 80 kilogrammes; and if there is no yielding, he stops. Very old cases are obviously unfit for such operation. In two such cases, however, Calot has done a cuneiform resection of the posterior parts of the vertebræ and has thus accomplished reduction. This method, of course, diminishes the chest capacity markedly.

The technique is simple, the patient lies prone and is pulled apart by strong assistants pulling on the legs and arms so as to distract the vertebræ at the seat of disease. Jeannel,[16] of Toulouse, and Vulpius,[17] of Heidelberg, use pulleys and bands for distraction in place of assistants, and the latter advocates suspension by the heels as the most available position for correction, and the application of the jacket. Calot advises, as the first step of the operation, the removal of the spinous processes of the diseased vertebræ through a longitudinal incision which is at once sewed up. This is advocated on the ground that pressure can then be made by the flat of the hand in rectifying the deformity, which is more accurate than pressure on each side of the spines; and it is said that sloughs are much less likely to form under the jacket.[18] On the other hand, it is claimed that the removal of the spinous processes weakens the already diseased and unstable column.

Traction of 20 to 80 kilos is made by Calot, according to circumstances, and then the surgeon standing over the patient presses downward on the boss with short jerks, exerting a pressure from 15 to 40 kilos. The deformity generally yields with a succession of snaps or suddenly and easily. The patient is then held with the spine overextended while a plaster cuirass is applied reaching from the top of the head to below the pelvis. This is changed every three or four months.

Sloughs are likely to occur, especially on the occiput and over the boss. Recumbency of some months is advised, and the indication, according to Calot, for the upright position unsupported is afforded by the x-ray, which shows the formation of bone. All this seems to the American reader very indefinite and vague.

Chipault lays the patient, after operation, on an elaborately arranged board for hyperextending the spine.

Such is the literature as it stands. Lorenz and Ménard are the chief critics; Chipault, the real reviver of the method, is conservative and cautious; Monod is judicial and sceptical; the majority are enthusiastic. Theoretical objections are all very well; but every new operative method has had to meet them at the outset, and either disprove them or be itself discredited.

The operation attacks, not Pott's disease, but the deformity of Pott's disease, which is not the worst feature of the affection. It expects of tuberculosis of bone a reparative power and a behavior in general which it does not possess in general. It is not apparently attended with much risk, but its real utility in *permanently* maintaining the improved position is yet to be proved. The operation is apparently not particularly dangerous. One need not use in all cases an obviously unreasonable amount of force, as advocated by Calot, but several gentle rectifications may follow each other. Paralysis may often be cured; the deformity may be largely corrected, temporarily at least, in recent cases; and in view of the decidedly unsatisfactory status of the present treatment of Pott's disease, the method is bound to be used, probably abused, advocated and decried until finally it finds its real level and is estimated at its true value. What that real value is no one can tell until much time has elapsed — time enough to show ultimate results.

There has been yet no interval for the discussion of anything more than immediate results regarded in the light of the slow progress of tuberculosis of bone. Neither is it possible to say yet just which cases are best suited to this treatment. They must obviously be recent cases, that is, cases without anchylosis; and adults and children are apparently equally amenable. Beyond this nothing definite can be said.

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[10] Gaz. Med. de Paris, 1897, x, s. i, 231.
[11] Deutsche med. Woch., 1897, 556.
[12] Ann. de Chir. et d' Orth., July, 1897, 218.
[13] Gaz. d' Hôp., 1897, 70, 656.
[14] British Medical Journal, 1897.
[15] Comm. to Twelfth International Medical Congress.
[16] Arch. Prov. de Chir., 1897, vi, 383.
[17] Münch. med. Woch., 1897, 36.
[18] Bilhaut: Ann. de Chir. et d' Orth., July, 1897, 193.

The method is of value in one way, even if time should prove it in every other to be worthless, which is altogether unlikely. It has shown us that an ambulatory apparatus can be applied which shall hold straight even a vertebral column where the bodies of the vertebræ do not exist but where they only bound a gap. But this apparatus must include the head and shoulders. If this turns us aside temporarily from our routine of braces and jackets to remember that body weight can be supported elsewhere than on the vertebral bodies, if we are only willing to use sufficient apparatus, the method of Calot, or rather Hippocrates, will have helped conservative methods and given new energy to the efforts to prevent deformity.

REFERENCES NOT GIVEN ELSEWHERE.

Delore. Concours méd., Paris, 1897, xix, 209.
Ann. de Chir. et d'Orth., 1897, x, 97.
Ann. Soc. Belg. de Chir., 1897, vi, 383.
Miele. Belg. med., 1897, iv, 65.
Gaz. d' Hôp., 1890, 70, 197.
Redard. Communication to Twelfth International Medical Congress.
Helferich. Zeitschrift f. prakt. Ærzte, 1897, No. 161.
Vulpius. Cent. f. Chir., 1897, 49, 1257.

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Clinical Department.

ENORMOUSLY DILATED INTRA-PERITONEAL LYMPH VESSELS.

CYSTIC LYMPHANGIECTASIS. DEATH FROM SHOCK.[*]

BY JOHN HOMANS, M.D., BOSTON.

I HAD known M. K., age thirteen, from her early childhood, about ten years. Her abdominal enlargement had been slow and progressive. When I first saw her, at the age of three years, I found the abdomen large, and thought the fluid ascitic because I could always hear more or less intestinal gurgling in the midst of the fluid. At other times the fluid seemed to be more or less shut up in different localities, as if partitioned off, or in separate sacs. But as time went on I eliminated ovarian tumors and tubercular peritonitis, and was much puzzled.

I saw her every few years, and always refused to operate until 1895, when her size made her an object of derision to her schoolmates. I hoped that I should find some exceptional kind of ovarian, or other benignant cystic tumor, and should be able to cure her. On May 16th I opened the abdomen with the patient in the Trendelenburg position, above the umbilicus and, after pushing back the omentum, came upon the blue, thin wall of a cyst. The cyst was emptied by tapping, but kept filling up as fast as it was emptied. On further exploration it was found to be connected with other cysts varying in size from that of a large marble to that of a small foot-ball. These cysts opened into each other by valve-like openings scarcely admitting the end of the finger. The fluid which ran out first was straw-colored, the next whitish, not sticky, and much of it resembled the fluid of a parovarian cyst; some of the fluid was, however, chocolate-colored.

In lifting out the mass that seemed to be the wall of the three main cysts, the bowels were brought along also, and were seen to be intimately connected with the cysts, which ran in among them under or in the peritoneal sac. The only way I could get the cysts out was by very forcible pulling with the fingers and forceps, both inside and outside of the sacs under the peritoneum; and in this way they were incompletely everted and peeled out. During this process there was more or less oozing of blood, but no severe hemorrhage. After the three large cysts had been gotten out, small openings were found running into other deeper cysts in the pelvis; these were emptied by sponging, and kept filling up. The cysts and canals seemed to continue indefinitely, and to have their origin somewhere in the neighborhood of the sacrum. Finally, as the sacs seemed to be endless, I decided to desist from attempting their complete removal; and the separated portions were cut away, though still more sacs or channels remained.

The operation had lasted two hours, and the patient showed signs of shock, with pallor, rapid pulse, etc. Gauze was stuffed in the pelvis, and the walls of the different sets of sacs were stitched to the sides of the incision. Later the incision was closed with silkworm gut save where the gauze protruded. The patient came out of ether well, but with much pain.

In the evening she was very restless, and later delirious. The pulse became feeble and rapid (160). The urine (eight ounces) was drawn by catheter. She died at 2 A. M., seventeen hours after the operation had been begun. There was no thorough autopsy; but the wound was opened, and the gauze was found saturated with fluid; there was fluid also in the pelvis, but there were no clots and no post-operation hemorrhage. Dr. Whitney reported that the cysts were dilated lymph-vessels, and that I might have gone on indefinitely clearing out canals and cysts.

Appended is Dr. W. F. Whitney's report:

CYSTIC LYMPHANGIECTASIS.

The specimen consists of a plexus of tortuous, irregularly dilated and communicating, thick-walled tubes measuring about fifty centimetres in length. They are extremely complex in their course and union, running for a short distance (six to eight centimetres) as a cylindrical tube three or four centimetres in diameter, and then opening by a sharp circular ring into an irregular cavity, the largest being ten centimetres in diameter. In places this opening is on one side, and not in the line of the direction of the tube. The outer surface is covered by fragments of thin, loose connective tissue, in which the mass evidently lay. The wall proper varies from two to four millimetres, and is of a firm fibrous structure, the outer layers being infiltrated with blood. The inner surface is corrugated, but smooth.

Microscopic examination showed the wall to be made up of simple fibrous tissue increasing in density from without inwards, the innermost layers consisting of dense wide fibrillæ, with only an occasional spindle-shaped nucleus. It was vascularized throughout its entire thickness, very small vessels being detected quite close to the inner surface. No smooth muscular fibres were found.

From this it is evident that we have to do with dilated spaces or channels in the connective tissue, which has become much thickened immediately about them. From the absence of any epithelial lining, or adherent blood corpuscles, the inference is justified that they must stand in communication with the lymphatic system.

While slight degrees of lymphangiectasis are not uncommon, such an enormous dilatation as has occurred in this case is among the greatest rarities. The specimen is preserved in the Warren Museum of the Harvard Medical School, and numbered 8905.

COMMINUTED FRACTURE OF EACH PATELLA.

Excision of One Patella, Wiring of the Other Patella. Recovery with Useful Knees.

BY CHARLES L. SCUDDER, M.D.,
Assistant in Clinical and Operative Surgery, Harvard University; Surgeon to Out-Patients, Massachusetts General Hospital, Boston.

B. B., male, forty-four years old, married, fell September 23, 1896, to the sidewalk from a second-story window.

An examination immediately afterward found a compound comminuted fracture of the right patella, with wide separation of the fragments. The wound in the soft parts was about one-third of an inch long. The knee-joint was distended by much fluid. The left patella was also comminuted, but there was no wound of the soft parts. The fragments were small, numerous and widely separated. There was comparatively little fluid in this joint.

Under ether anesthesia the following operation was done.

Left Knee. — A four-inch transverse incision, made below the patella, opened the joint. The patella was broken into so many small pieces that all the fragments were removed. Little fluid was found in the joint, there having been very slight hemorrhage following the fracture. The patella tendon and the quadriceps fascia were sutured across the front of the joint with six silkworm-gut sutures. A small wick of gauze was left in each side of the joint, and the skin was sutured with silkworm gut. The joint, before being closed, was flushed with sterile water.

Right Knee. — The compound wound was enlarged each way to the sides of the joint. The fragments were exposed, the joint opened and thoroughly flushed with 1 to 10,000 corrosive-sublimate solution and then with boiled water. Three of the fragments were of such size and so well attached that they were sutured with silk sutures. The other smaller fragments were removed. The skin was sutured with silkworm gut. One small wick of gauze was left at one end of the incision.

After-Treatment. — Both knees were immobilized upon posterior wire splints, with wooden side splints and straps, and aseptic-dressings applied. Three days later all wicks were removed. One week later all sutures in the skin were removed. Plaster-of-Paris splints were applied to each leg. Four weeks later the plaster was removed from the right leg. A flannel bandage was applied from the toes to the groin. A few days later the plaster was removed from the left leg and a flannel bandage was applied.

About seven weeks from the operation, passive motion was gently made at both knees. Union was firm of the sutured fragment of the right knee. Nine weeks from the operation the patient was discharged from the hospital with crutches, wearing flannel bandages upon both knees.

One year and four months after the operation the condition of the knees is as follows: Firm union of the right-knee fragments. Useful motion to a right angle. No pain. Practically no disability. As strong as ever. The left knee presents, in the entire absence of the left patella, a curiously flattened appearance. Motion of the left knee is slightly beyond a right angle. There are two little nodules of bone just under the skin near the outer side of the left knee. These are probably bits of bone left at the time of the operation, which if pressed upon are slightly sensitive. Otherwise the left knee is functionally as strong as if there were present a natural and normal patella.

This case is reported because of its unusual character.

Simple transverse fractures of the patella from a fall or muscular violence, with slight separation of the fragments, are best treated by non-operative measures.

Simple transverse or comminuted fractures of the patella, with wide separation of fragments, are best treated by operation and suture of the fragments.

Compound fractures of the patella, whether transverse or comminuted, whether with much or little separation of the fragments, are best treated by operation.

If the fragments of the patella are so greatly comminuted that the integrity of the patella cannot be restored, then an excision of all the fragments is indicated and a suturing of the strong quadriceps extensor fascia to the ligamentum patellæ and the fascia on each lateral aspect of the knee-joint.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, November 29, 1897, the President, Dr. A. L. Mason, in the chair.

Dr. C. F. Withington read a paper entitled

PULMONARY ABSCESS AND GANGRENE.[1]

Dr. F. C. Shattuck: Dr. Withington's interesting paper brings up several important points: in the first place, the complex condition which we are apt to encounter in any given case of gangrene of the lung so called. As he has clearly shown, abscess is very apt to be associated with gangrene; and the latter, after the separation of the slough, is liable to form an abscess. In fact, gangrene and abscess may be almost interchangeable clinical terms. Secondary empyema and secondary changes in the lungs, peritoneum or other parts may be complications or sequelæ. Another interesting point, especially interesting to me, which he brings out is the more favorable prognosis in cases of gangrene following pneumonia. My own experience, limited as it is in this line, quite coincides with Dr. Withington's accurate statistical facts as regards that point. Most of the gangrenes which I have seen get well have followed pneumonia, and it has seemed to me that pneumonia in drinking men was rather more apt to be followed by gangrene than pneumonia in temperate men, though as to that I do not feel perfectly sure.

The diagnosis of pure abscess of the lung seems to me a very difficult one, and the cases of pure abscess must be pretty rare. I passed an hour this afternoon looking over the records of my own cases at the Massachusetts Hospital. Among these were five set down as abscesses of the lung. When I came to look over the record of those cases, I was satisfied that at least two of them were nothing but empyema, the diagnosis of abscess having been written in by the house-officer or some one other than myself. For some years I now have taken pains to write the diagnosis myself.

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[1] See page 220 of the Journal.

So that only three cases could be classed as abscess of the lung. In two of the three it seemed to me that the abscess, if such existed, was probably an inhalation affair. One of them was in a man who had been operated on by the surgeons for an irreducible hernia. Soon after he began to cough; eight days later his expectoration became foul, and he was transferred to me as a case of abscess with gangrene. He had signs of local consolidation on one side, and about a month later was discharged much improved. Sent to Waverley. Presumably got well. I thought the disease probably originated from the inhalation of something at the time of his etherization.

Another case which I considered to be of the same character was a man who was fished out of the Charles River. It was not known how he got there. As a result of the wetting he got an acute catarrhal nephritis which soon passed off. He also had expectoration, which became fetid, and I thought that he perhaps inhaled some of the dirty Charles River water, which must have enough germs of all kinds in it to make an abscess or a gangrene or anything else. A few tubercle bacilli were found in his sputum, so that presumably he was not a healthy man when he got into the water.

In another case I made the diagnosis of abscess of the lung, and I believed that the pleura was adherent. There was an area of limited bronchial breathing in one back. There was offensive expectoration, the man was evidently going down, and I asked Dr. Elliot to operate on him. He incised the point which I designated and got into the lung; the pleura was adherent there. He got into a friable lung tissue, but did not open any distinct abscess cavity. A drainage-tube was left in, and about a week later the man was re-transferred to me, dying two days later. At the autopsy the drainage-tube was lying in a cavity about one and a half inches in extent lined by pyogenic membrane. Death occurred only eight days after the operation. That would seem a pretty short time for pyogenic membrane to form inside of a traumatic cavity, as it was called by the pathologist. There was an encapsulated small empyema containing only about an ounce or so shut in at the base on the right side. There was a general peritonitis. No obvious communication was found between the pleura and the peritoneum to account for the peritonitis. This same man had a cheesy non-tubercular broncho-pneumonia.

Two other cases, classed simply as gangrene, were discharged doing very well, and I think in all probability recovered.

It has seemed to me that the administration of oil of eucalyptus, where the patient's stomach would take it, was a valuable means of diminishing the fetor of the expectoration.

Dr. Arthur T. Cabot said that he had had one interesting case of gangrene of the lung in which operation was followed by recovery. The patient, a man of about twenty-five, had been in the wards of the Massachusetts General Hospital for an attack of pneumonia, which was followed by evidence of fluid in the chest. When operation was advised, he was alarmed and he left the hospital. A week or ten days later, having been very ill during that time, he sent for Dr. Cabot, who found him expectorating foul pus with evidence of a considerable collection of fluid in the right side of the chest. He advised his immediate return to the hospital, which was acceded to, and he operated upon the following day. A large quantity of pus was evacuated through a free opening in the lower part of the chest. Presently sloughs of lung tissue began to appear, and were dragged out through the opening with some difficulty. It was difficult to tell just how large a portion of lung tissue was represented by these sloughs; but when they were put together, they seemed to represent a considerable portion of the lower lobe. The patient made an extremely good recovery. The cavity rapidly contracted, and the tube was finally taken out about as soon as it would have been after an ordinary empyema.

In this case the sloughs were large, and delay in operation had given them time to completely separate, the patient fortunately having strength sufficient to bear this illness.

An interesting fact in regard to this patient was that, about six months later, when seen by Dr. Cabot, measurements of the chest showed that the right side was somewhat less than an inch smaller than the other, and the lung was very fairly expanded towards the base.

Dr. Cabot said that his feeling would be that, in any case of gangrene where empyema existed, immediate operation was the one proper measure and offered the best hope of recovery, no matter what the patient's condition. The drainage of such a cavity through the bronchi is very imperfect, and is liable to lead to infection of other parts of the lung, so that the sooner drainage through the chest wall is afforded the better. This opening should be a free one in order to provide for the escape of sloughs which subsequently separate.

Dr. Cabot said that he had had no experience in treatment of gangrene where the pleura was not also affected.

Dr. V. Y. Bowditch: I have been hoping for a long time that we could reach the stage when operative procedure in such cases as Dr. Withington has spoken of could be resorted to with much greater frequency. I have had the feeling, after reading the reports from the other side of the water, that we were a good deal behind the times here in such matters; and I have been on the watch in my hospital practice for cases in which the condition of the patient and the signs of the disease were sufficiently well located to justify a surgical opening with drainage. I confess that the great difficulty in most cases that I have seen has been the inability to find a definite point at which I could ask the surgeon to make his incision, the signs having been more or less diffused.

In the discussions which we read of in the Paris societies the impression we gain is that the operation can be resorted to much more frequently than we do here; and yet, of course, we are obliged to take into consideration, even in these reports, the possibility of errors of diagnosis. As far as we can learn from the meagre reports of the late International Congress at Moscow, the consensus of opinion is in favor of the operation in a great many cases. Three or four isolated cases of what would seem to be by the reports undoubted cases of pulmonary gangrene with successful operation have been given lately in the *London Lancet*, and *British Medical Journal*. The signs have all pointed to acute pulmonary gangrene; and in each of the cases at the point of operation the pleuræ were adherent, simplifying the operation of course.

In this connection in regard to treatment, I should like to mention again one case of pulmonary gangrene which I reported with Dr. W. N. Bullard, in my service at the Carney Hospital, about eight years ago. We used in this case intra-pulmonary injections, the chief ingredients of which were carbolic acid and iodine. It was a striking case, the results in which were corroborated by other physicians. A young man had been seized with a sudden violent pain in the right side without any previous symptoms of ill-health. He entered the hospital and signs only of a catarrhal condition apparently at the top of the right lung were found, with beginning very fetid expectoration. Signs of a rapidly increasing process developed, and although every means were tried to diminish the fetor and cough, he went rapidly down hill. No bacilli were found upon repeated trials. After two months of ineffectual treatment, with every sign of rapid decline, it was decided to try intra-pulmonary injections. They were made in the second intercostal space, between the anterior axillary and mammillary lines. Iodine was noticed in the breath immediately; a slight fit of coughing resulted, but marked diminution of the fetor and cough began from that time. The improvement in every symptom lasted several weeks, when again the fetor appeared. In the space of five months about the same number of injections were given, each time with marked improvement and steady gain until at the end of that time he left the hospital fat and well, without a trace of cough or expectoration; the physical signs showing a healed process at the top of the right lung. For six months he remained well, but by dissipation of various kinds injured his health, and, at the end of the time appeared with signs in the top of the left lung, the right remaining as before. The sputum then showed bacilli but had no fetor. All the symptoms of acute tuberculosis appeared and he died soon after. No autopsy could be obtained. As to the marked benefit from the intra-pulmonary injections in the gangrenous conditions over the right side there was no shadow of doubt in the minds of any of the four or five physicians who watched the case.

If I were to find definitely located signs in any such case, I should never hesitate to use the intra pulmonary injections again; but I hope we can do still more by more radical surgical procedures in the future.

Dr. F. I. Knight: I happen to have a case under observation now in which there is apparently recovery going on after gangrene following pneumonia in a patient whom I saw with a most profuse hemoptysis twenty-five years ago, who since then has been perfectly well until about two months ago, when, according to his family physician, he had an attack of pneumonia. When he was pretty well convalescent five or six weeks ago, he was attacked with profuse stinking expectoration, without doubt due to gangrene, which has gradually subsided, and all his symptoms have improved so that I think he is going to recover without any surgical interference. It seems a pretty good case for interference if occasion requires, as the signs are at the very lower part of the right chest — a moderate amount of dulness and moist râles pretty well down to the base. I don't think there is any empyema; at any rate there is nothing to justify any immediate interference. It seems to be one of those cases following pneumonia in which recovery takes place more frequently than when the condition ensues upon other diseases.

Dr. Mason: In young subjects with fetid expectoration it is often exceedingly difficult to determine whether we are dealing with a gangrenous cavity in the lung or a circumbscribed empyema discharging through the bronchi. The gangrenous process in the young subject is a rare one. I do not know that I have seen a young person who has developed gangrene after pneumonia, whereas in the aged and in those who have bronchiectatic cavities it is more common and almost invariably fatal. In a few cases of fetid expectoration in young persons after pneumonia, with recovery, it has seemed to me more probable that the condition was a localized empyema opening through the bronchi, not a very uncommon sequence of pneumonia, as it is well known that pneumococcus empyemas have a greater tendency to perforate externally or into the bronchi than other forms of empyema. In case of recovery the diagnosis of pulmonary gangrene as apart from empyema may be a difficult one. Lately I had such a case. A young man after pneumonia was expectorating foul pus. After determining the locality I explored with a good-sized needle, but there was no cavity to be found. He still went on expectorating pus and got well, but he emptied the cavity so completely that, although puncture was made at a point where breath sounds were absent, I did not reach the cavity. In such a case it seems to me difficult to determine what the nature of the process was.

Dr. Withington: I felt a great deal of interest in the case Dr. Cabot reported; and I wonder whether in that case, where the lung on the side of the operation had filled out to such an extent as to be almost of the same size as the opposite side, and yet where a large part of the lower lobe had sloughed away, whether the auscultatory signs indicated that any function was going on in the lower part of the lung. It seems hard to believe that much breathing could be done with so much of the lung absolutely sloughed out, and yet if it was not, it is hard to understand how the lung could have filled out to the point indicated to make that side of the chest nearly as large as the other.

The coincidence of empyema with gangrene of the lung is very frequent; but it seems to me in a good many cases the process is internal in the lung and no empyema is present at all. In one case that came to autopsy the gangrenous cavity approached very near to the pleura, but the pleura was not found adherent over it. It seems to me that in that kind of cases surgical treatment is almost hopeless because an incision is sure to make the lung collapse and so to interfere with drainage and, on the other hand, there is a strong likelihood of an infection of the pleural cavity and a general empyema.

Dr. C. L. Scudder read a paper on

TUBERCULOSIS OF THE BREAST.

This comprised a report of one case and an analysis of all cases (80 in number) recorded in literature to date.

A Safety Club. — Dr. A. W. Nelson, of New London, Conn., has invented a policeman's club, coated with semi-vulcanized rubber, which he claims, is sufficiently yielding to prevent a blow with the club from fracturing the skull, while still being sufficiently convincing to the unruly arrestee. — *New York Medical Record.*

THE BOSTON

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LIBERTY, LICENSE OR LAW.

At the recent hearing on the bill to amend the Massachusetts Act for Medical Registration, at the State House, some statements made by a gentleman, with a medical education but never a practitioner, subsequently a professor of psychology and now of philosophy, justify a reply.

The amendment complained of was in the following words — guarded, however, as we shall show — by the preceding section:

> Section 5. Any person shall be regarded as practising medicine within the meaning of this act who shall append to his name the letters *M D.*, or shall assume or advertise the title *Dr.*, or *Physician*, or any other title which shall show or tend to show that the person assuming or advertising the same is a practitioner of medicine, or of any of the branches of medicine; or who shall investigate or diagnose, or offer to investigate or diagnose, any physical or mental ailment or defect of any person with a view to affording relief, as commonly done by a physician or surgeon; or who shall prescribe for or treat a person for the purpose of curing any real or supposed disease, whether by the use of drugs or by the application of any other agency or alleged method of cure or alleviation or prevention of disease; or to operate as a surgeon for the cure or relief of any wound, fracture or bodily injury or deformity, after having received therefor or with the intent of receiving therefor either directly or indirectly any bonus, gift or compensation.

The conservative restriction is as follows:

> Sect. 3. Nothing in this act shall be so construed as to discriminate against any particular school or system of medicine, or to prohibit service in a case of emergency, or the domestic administration of family remedies.

This amendment, according to its framers, is aimed at medical quacks; and no one, it was thought, would oppose it, except those in sympathy with incompetent practitioners. Spiritualists, Christian Scientists, magnetic healers and druggists appeared in great force in opposition.

In the name of Liberty, Prof. William James, of Harvard College, appeared to protest in behalf of the Christian Scientists and mind-healers. We quote his words, as reported:

"The mind-curers and their public return the scorn of the regular profession with an equal scorn; and will never come up for the examinations. Their movement is a religious or quasi-religious movement: personality is one condition of success there; and impression and intuition seem to accomplish more than chemical, anatomical or physiological information."

Professor James's argument is based on three principal points:

(1) That the modes of treatment attacked are religious.

(2) That the legislature, having no medical knowledge, has no right to legislate in medical matters.

(3) That the regular medical profession are trades-unionists, influenced by their own methods and by a non-receptive conservatism.

It is wisely ordained by Nature that the will does not have control over the smooth muscular fibre of organic life; were it otherwise all our organic functions would be interrupted and unequal. Of such fibre, and with such insensibility to the direct action of the will, is the womb.

We are informed that within a few years, in a neighboring suburb, a woman in labor was under the treatment of the mind-cure, or Christian Science, without other physician. The child was expelled by the natural efforts, but there nature stopped. The patient was prayed over, and urged to concentrate her will on the womb, and to determine to be well, and she would be. Meanwhile, the womb relaxed, the sinuses opened, flooding occurred, and the woman died, without medical aid. A physician would have emptied the uterus with the hand, have given ergot, and probably saved her life.

"Do you dare," says the professor, "to thrust the coarse machinery of the criminal law into these vital mysteries?" alluding to the proposed enforced education and registration of Christian Scientists.

"Do *you* dare," might the friends of this poor woman reply, "to *withhold* the coarse machinery of the criminal law from the author of this patient's death?"

The heart, once thought to be the seat of the emotions, is somewhat affected by the mental state, but not so far as to interfere with its purely mechanical functions. The heart is a pump which forces the blood from the ventricle through the lungs; if the lungs are obstructed, the blood regurgitates into the heart, its walls are over-stretched and paralysed, and it stops. In case, then, of any obstruction of the lungs, the heart can only continue to beat by being aided by rest and absence of effort; a quiet current may thus partially flow through the lung.

Near Boston, very recently, we are credibly informed, a man ill with pneumonia was under the sole care of a Christian Scientist. Here the will was called on by the reputed healer, and the patient told to will to be well, and all would be well. The sick man was directed to make an effort to get up and walk. He struggled to do so; but he walked to his death, for he never regained his bed alive.

Here the will failed; the pump was clogged, faith erred, the victim died.

Professor James says: "The history of medicine is a really hideous history, comparable only with that of priestcraft."

Have we returned to medieval superstitions, where ghosts walk and miracles abound? where cities rot and rivers stink? where the plague riots, where charms and prayers are the remedies, and where, if they avail not, all must die? A man has a right to poison himself, but not to poison others. "Science," says Mr. Buckle, "is the result of inquiry; theology is the result of faith. In the one the spirit of doubt, in the other the spirit of belief. In science, originality is the parent of discovery, and is therefore a merit; in theology, it is the parent of heresy, and therefore a crime."

Which will you take, blind credulity or open-eyed investigation? The royal touch, the water of Lourdes, the amulet, or vaccination, antitoxin, antisepsis?

Such cases as those narrated prove the faith-cure valueless, unless based on anatomical and physiological knowledge. Faith may unhinge an hysterically contracted knee; it cannot control the eruption of scarlet fever or remove the membrane of diphtheria.

Clairvoyance, the assumed Röntgen ray of faith, or spiritual insight, is useless to see with, unless it knows what to look for, and what to see. Goethe has somewhere said, "The eye sees only what it has the power to see"; for special training and previous knowledge are requisite to understand, or to utilize, what one sees.

To pass to the second proposition. We quote from Professor James:

"Were medicine a finished science, with all practitioners in agreement about methods of treatment, a bill to make it penal to treat a patient without having passed an examination would be unobjectionable; but the present condition of medical knowledge is widely different. . . . The hinge of my whole contention is that in strictly medical quarrels the State has no right to intervene."

To intervene between whom? With medical schools or systems the bill disclaimed interference. It claimed only the right to be satisfied that those who treat the sick, by *any method*, have some knowledge of the body they are to treat. Plumbing is a comparatively exact trade, but the State requires that the plumber shall be examined and licensed. Why? Because his calling affects human health. Electricity, on the other hand, is ill understood, employed with risk, subject to unexplained vagaries and accidents; it is notoriously an imperfect science. Yet the State has a right to regulate it because it endangers human life.

Steam-power, gas-light and other agencies come under the same category. Will you test your engineer and examine him? or call in the first fool, who *professes* to know, to sit on the safety-valve of your boiler, instead of watching the steam-gauge? We regulate such trades; shall we not enforce some method in the treatment and care of the sick?

As Dr. Harvey, of the Board of Registration, well says, "You cannot bury your sister or your daughter without medical opinion, because the Commonwealth demands it; no one can be deprived of liberty and confined to an insane asylum without medical opinion; life insurance companies would become insolvent in a year without medical opinion; the city of Boston cannot have a board of health without medical opinion. Are we to be told that this State cannot have medical opinion of any kind? Contemplate what would be the results were the State to recognize the contention of these remonstrants. I say, with regret, that the chief remonstrants who have appeared here are opposed to every safeguard of the State pertaining to public health. They are opposed to all quarantine regulations, to medical examiners, to the compulsory law for vaccination, to the reporting of all contagious diseases."

To quote once more from Professor James: "Now as to calling the Massachusetts Medical Society a trades-union trying to legislate against scabs, I can hardly imagine any member of the society affirming that in the movement for the present bill trades-union motives are totally absent."

We had perhaps foolishly thought, that ours was a profession and not a trade; that commercial motives, though indispensable to our living, were not the first in our minds. A trades-union of self-denial, of charity, of saving life at any cost — a masonry of benevolence and of love — would more accurately describe most medical practitioners. They alone toil most without reward, and sacrifice themselves oftenest without fee. But let that pass. Doctors are men; some are selfish, all are human and fallible. Are they so conservative that they are unwilling to receive new ideas? Charcot and hypnotism; Brown-Séquard and epilepsy; the psychology of insanity; the growth of knowledge in neurology, with Horsley and McEwen. Are these signs of an insensible conservatism toward the great field of mental therapeutics? Have these men, or the ghosts of our fathers talking through mediums, and the revelations of Christian Scientists, done the most to clarify an obscure subject, to advance knowledge? to heal the mind and body diseased? Physicians welcome, seek, try every new thing. If useful, they adopt it; if not, they throw it aside. The educated mind, however, insists that the crucial test of experiment shall be applied by hands and eyes trained to see and observe, and familiar with the body in health and disease.

However, to quote once more from another speaker for Christian Science: "We claim that we derive our license to heal our fellowmen from a higher than human power." Hence we suppose they are not amenable to human laws. What more can be said? Only this: with the doctor, on his lonely calls and vigils, rides responsibility, anxiety, self-questioning, diffidence. *Atra sedet cura.* He tries all things; he seeks all things; he weighs all things; and with a single eye to his patient's recovery.

Would you prefer to trust yourself to the physician, or to the metaphysician?

MEDICAL NOTES.

THE GERMAN CONGRESS OF SURGERY. — The twenty-seventh Congress of the German Surgical Society will be held in Berlin from April 13th to 16th.

POLITICS AT VIENNA UNIVERSITY. — Owing to the national feeling running so high among the students of the Vienna University, including those from Upper Austria, the Senate has declared the lectures closed for the session.

THE MEDICAL LOG OF THE "MAINE." — The journal of the medical officers of the *Maine*, which was recovered by divers after being under water for four days, showed that Surgeon Heneberger kept his records up to date. The last entry was on February 15th, the day of the explosion.

THE WAY IT LOOKS IN NEW YORK. — Boston is a very hotbed of "Christian Science," if one can judge from the large number of "Reverends," "Professors," and the like that are openly expressing their opposition to the bill now before the Massachusetts Legislature, which, if passed, will put a summary end to the substitution of crazy folly for common-sense and experience in the treatment of disease. The titles of these people are doubtless much more impressive to those who do not know the bearers of them than to those who do, but they are presumably respectable, and more or less well-educated members of society, and it tells much that they can defend a miserable superstition without encountering any large amount of local criticism. Is the Boston standard of intelligence degenerating even more rapidly than the passing away of the city's literary honors would seem to indicate? — *New York Times.*

BOSTON AND NEW ENGLAND.

ADVERSE REPORT ON THE RESTRICTION OF MEDICAL PRACTICE. — The Committee on Public Health of the Massachusetts Legislature have reported adversely on the amendment submitted by the Board of Registration to the law requiring registration of practitioners of medicine.

CENTENNIAL REPORT OF THE BOSTON DISPENSARY. — We are in receipt of this very handsome report of the history and work of the Boston Dispensary, compiled by Dr. Robert W. Greenleaf, and published by the Board of Managers. In our issue of October 15, 1896, the date of the one-hundredth anniversary of its founding, we gave an editorial notice of the history and present status of this excellent and deserving charity. We note that the staff of the dispensary has effected a permanent organization, of which Dr. Harold Williams is President, and Dr. Frederic M. Briggs Secretary and Treasurer.

NEW YORK.

DEDICATION OF A NEW HOSPITAL BUILDING. — The new building of the New York Skin and Cancer Hospital, at the corner of Second Avenue and 19th Street, was formally dedicated and opened for inspection on March 5th. Addresses were made by J. Cleveland Cady, President of the Board of Managers, and by Drs. A. Jacobi and L. Duncan Bulkley. Mr. Cady explained that the funds for the erection of the building were principally derived from the sale of the suburban property, which the institution had purchased a number of years ago for the establishment of a country branch, but which it had been found impracticable to maintain. In the course of time this property, which was situated at Fordham Heights, had greatly increased in value, and had finally been sold to the New York University for four or five times its original cost. In the course of his remarks Dr. Jacobi said that this institution was exclusively for the benefit of the poor. "Under the prevailing circumstances," he said, "of most of our public institutions, dispensaries and clinics, the poor are crowded out by those who are quite able to pay. See to it, no matter how that difficult task may be accomplished, that public dispensaries and institutions are reserved for those who, because of poverty, are the natural wards of the Commonwealth. The result will be the gradual return of self-respect to those who now behave, not like free citizens of a republic, but like sneak thieves, who obtain valuable things under false pretences." Dr. Bulkley, who was the originator of the hospital, delivered an address on "The Care of Diseases of the Skin and Cancer in New York and Elsewhere," and in it gave an elaborate review of the work accomplished by this institution in the course of its history of fifteen years. The number of patients treated has been 25,031, of whom 3,010 were in the cancer department, 22,021 in the skin department.

THE NEW PRESIDENT OF THE BOARD OF HEALTH. — Mr. Nathan Strauss has resigned the presidency of the New York City Board of Health and Mayor Van Wyck has appointed Col. Michael C. Murphy to the position. Colonel Murphy is a Tammany Hall politician, but his record has been a creditable one. He served with some distinction in the Civil War, and for many years was a member of the Legislature, where his vote was always in favor of small parks, free recreation piers, and other improvements for the benefit of the poor. He was also formerly an Excise Commissioner. In 1890 Dr. Robert F. Weir performed the operation of gastrotomy on Colonel Murphy on account of incurable stricture of the esophagus, and since that time he has taken all his food through a silver tube inserted through the abdominal walls into the stomach.

RECIPROCITY IN STATE WARDS. — The Secretary of the State Commission in Lunacy recently addressed a letter to the Secretary of the State Board of Charities of Colorado requesting him to arrange for the reception of a patient who had come into New York and had been committed to one of the State hospitals for the insane. The answer of the Colorado official was to the following effect: "We are greatly in favor of your law relative to the removal of non-resident insane. We have about forty consumptives from New York maintained in our county hospitals at public expense at the present time, and as soon as a law similar to this is in effect here we shall be glad to reciprocate all favors."

Continued Low Mortality. — During the month of February the mortality of the city remained exceptionally low for this season of the year. In the week ending February 5th it represented an annual death-rate of 18.01 per thousand of the estimated population. In the week of February 12th the death-rate was 19.06, in that of February 19th, 19.05, and in that of February 26th, 17.52. In the week ending February 19th the death-rate in the Borough of the Bronx reached the high figure of 30.45, but this was officially explained to be due to the number of large institutions in that part of the city. Fortunately, the total population of the borough is such a comparatively small portion of that of the whole city (137,075 out of 3,438,899) that the large death-rate here has little effect in lowering that of all the boroughs taken together. The lowest death-rate reported during the month was that of the Borough of Richmond (Staten Island) in the week ending February 26th, which amounted to only 12.05. The largest number of deaths from diphtheria in any one week was 47, and the smallest, 29; from scarlet fever the largest number was 24, the smallest, 13; from measles the largest number was 22, the smallest, 17; from typhoid fever, the largest was 9, the smallest, 3; from phthisis the largest was 153, the smallest, 128; from pneumonia the largest was 216, the smallest, 176. There has been no death from small-pox thus far during the year. The only disease that seems to be increasing to any extent is measles, of which 648 cases were reported in the week ending February 26th, against 593 in the week preceding, and 473 in the week ending February 12th.

Death of Dr. James J. Stephens. — James J. Stephens died at his home at Tappan, Rockland County, on March 3d, of apoplexy. He was in his 76th year and leaves a widow and two daughters. He was born and educated in New York City, and removed to Tappan fifty-three years ago. While somewhat eccentric in some particulars, he was a skilful physician and surgeon. For forty years he was the owner of the historic house at Tappan in which Major André was confined immediately before his execution.

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Miscellany.

TWO CURIOUS "FREAKS."

The following account of two performers at Barnum & Bailey's Circus at the Olympia is taken from the *Lancet* of February 2d:

> One of these entertainers, whose name is Delno Fritz, is a sword-swallower, and asserts that he can swallow longer swords than have ever been swallowed before. We for our part never want to see any one swallow more rigid metal. To those who know the surface markings of the abdomen and the situation of the stomach it is little short of appalling to see this man pass a sword down his gullet until the hilt impinges upon his teeth and then withdraw the weapon and demonstrate by outside measurement that in the erect posture the point falls some inches below the usual line of the lower curvature of the stomach. What really happens, of course, is that Delno Fritz has learned, consciously or unconsciously, to stretch the somewhat loose and elastic tissues between the lips and the cardiac orifice of the stomach, so that these tissues will lie along his blunted sword in a condition of extension, while a protruded chin assists in the prolongation of the pharynx. It should be added that the solidity of the weapon with which the feat is performed is beyond question.
>
> A second person in whom medical men must be interested is one Young Hermann, who can expand and contract his chest and abdomen at will to really remarkable dimensions. He is able to make a *bona fide* difference of sixteen inches in his chest measurements, and accordingly to snap chains and straps fastened across his thorax by the standing pressure he is able to effect upon them. The alterations which he produces in his abdominal outlines are no less striking. By swallowing air and then effecting pressure upon it by contractions of the rectus abdominis muscle he can rapidly pass from the appearance of extreme corpulency to the appearance of horrible emaciation, the skin of the abdomen appearing in the latter case to lie against the spinal column. His extraordinary power of swallowing and inhaling air enables him to shift the apex beat of the heart many inches and otherwise to displace his viscera.
>
> The power of swallowing air is not exceedingly rare, but the extent to which Young Hermann possesses it is unexampled in our experience. It is probable that Joseph Clark, the celebrated posture-master of the seventeenth century, possessed the secret of this trick in addition to his unwholesome knack of dislocating many of his joints at will. It may be remembered that Clarke's favorite joke was to go to a tailor to be measured with his right shoulder, say, much higher than the left, to return to fit the suit on with the protuberance on the other side, and finally to call at the shop and reject the clothes indignantly, having this time assumed a central hump. Young Hermann might amuse himself in a similarly ill-natured way if the inclination took him.

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Obituary.

JOHN PARKER MAYNARD, M.D.

Dr. John Parker Maynard, of Dedham, Mass., whose death in that town on February 26th, at the age of eighty-one, was noted in last week's Journal, was born in Boston in a house which stood on the spot where the store of Joel Goldthwait & Co. now stands, on lower Washington Street, then Marlborough Street. He was educated at the Latin School and Yale College, and was graduated from the Harvard Medical School in 1848.

While still a student at the Medical School, almost exactly fifty years ago, he was probably the first to employ the ethereal solution of prepared cotton, which is now known as collodion, for surgical dressings, though he established his claim to this distinction only after a rather animated controversy with his classmate, Dr. Samuel Lee Bigelow, who was the first to publish an account of the surgical uses of collodion. Bigelow's article appeared in the Journal of March 22, 1848, and was entitled "A New Method for Rapidly Uniting Wounds by First Intention." Bigelow had obtained the formula for preparing collodion from Dr. Charles T. Jackson, and had first used it as a varnish to protect a plaster cast. He had subsequently employed it as a surgical dressing, and introduced it as such at the Massachusetts General Hospital, where its use found favor.

In the Journal for March 29, 1848, Dr. Maynard published a communication addressed to John D. Fisher, M.D., of Boston, and read before the Boston Society for Medical Improvement on March 27th, entitled "The Discovery and Application of the New Liquid Adhesive Plaster," in which he stated that his friend and fellow-student, Mr. Samuel L. Bigelow, had in January, 1847, shown him some of the new varnish, which he had prepared according to a formula furnished him by Dr. Jackson, who had obtained it from Professor Schönbein, of Germany. Dr. Maynard, in an unsuccessful experiment in the use of the varnish to protect a gilded surface, got some of it on his fingers, and noticed that it dried quickly, and glued his index and middle fingers firmly together. This occurrence immediately suggested to him its use as a substitute for adhesive plaster in surgery, and he began to use it with excellent results. He informed Mr. Bigelow of these results, and afterward Mr. Bigelow began to employ it in surgical operations.

In the controversy which followed, several letters were published in the JOURNAL by both claimants to the discovery, and the result was that the weight of evidence may be said to have established Dr. Maynard's claim. Dr. Maynard's tone towards his rival in this discussion was uniformly courteous and considerate. Dr. Maynard began practice in Newton Upper Falls in 1848, and in 1852 went to Dedham, where he practised during the remainder of his long and honorable career.

He was a member of the Massachusetts Medical Society, and for some years a councillor, and at one time president of the Norfolk District Medical Society. He published in 1866 in the JOURNAL another paper on the surgical uses of collodion.

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Correspondence.

EPIDEMIC SUICIDES.

BOSTON, February, 1898.

MR. EDITOR: — Although the subject of epidemic suicides lies beyond the scope of practical medicine, still I think that the following occurrence which took place just one year ago in Russia, and which was extensively spoken of in the European as well as in the American press, presents such interesting features as to claim the attention of not only the special psychological investigator, but of all those — and the physicians are surely among them — who in any way at all concern themselves with the study of man in health and disease. The incident was widely commented upon, but rather in a vague and disconnected manner; and it remained for Professor Seekovsky, a well-known neuropathologist, and a prolific writer on psychiatry, attached to the University Keeyeff, to investigate the subject and to attempt to give to it a scientific explanation. The space allotted to this correspondence will, however, hardly permit us to dilate on his conclusions, and we will therefore present the facts and let the reader draw his own conclusions.

To become thoroughly acquainted with the particulars of the case, Professor Seekovsky made a special journey to the place of its occurrence (in Southern Russia, in the Government of Cherson, some fifty to sixty miles north of Odessa), lived for some time with the chief participators, and embodied the results of his investigations in a special work on epidemic voluntary suicides.

The *dramatis personæ* belonged to one of the various religious sects which are abundant in this part of the empire. They occupied a large, barn-like structure, which was well guarded by secret, underground exits and almost constantly locked doors, from invasion by any unwelcome guests. The population consisted almost entirely of women, with an occasional sprinkling of men and children; at the head of the sect was a certain Vitalia, an elderly woman, possessing wonderfully strong will powers, wielding an unbounded influence over the rest; she was, as a matter of fact, the potentate of the place, ruling over it with an iron hand, exerting a sway the rest had no power to withstand — not, indeed, through any physical force, but entirely by moral persuasion, or, possibly, by intellectual superiority. She was at once the teacher, the priest, the superintendent; appointed the hours for prayer, the time for work; designated the character of enjoyments, etc. As soon as the rumors of the decennial census-taking reached the sect (according to whose tenets the counting of living souls constitutes a grievous sin) Vitalia began to prophesy that the reign of the Anti-Christ was rapidly approaching, when all the various sects of the "true believers" would be ruthlessly persecuted by the government, their members exiled, thrown into jails and tortured. These prophesies were constantly and with increased fanatical vehemence repeated by her, day after day, at their meetings, which were participated in by all the members of the sect, including the children, till at last they took the form of facts that were sure to happen, and gained complete possession over the minds of those people. Thus perdition, death in exile or in the jails of the Anti-Christians seemed inevitable. It was in vain that the more reasonable members of the small community attempted to stem the tide of the pernicious propaganda, advising to wait for further developments.

This belief in the unavoidable spread like an epidemic. The influence of Vitalia's preachings exerted an especially destructive tendency on the impressionable minds of the growing children, and one of them, in an ill-fated moment of extreme mental anguish and despair, exclaimed, "It is far better to be buried alive, than to suffer in jail, and be compelled to renounce one's religion!"

The word was spoken! The seed fell on a fertile soil. The suggestion became a resolution, which spread like wildfire; and when the census officials knocked at the doors of the building they were not admitted, and a note was reached out to them through a window hole containing this positive statement, "We can never obey your new laws, but rather prefer to die for Christ."

Vitalia now began to act more and more energetically. She hurried them on, made ready the various preparations for the funeral herself, while her sermons became more and more threatening. She spared no words, no colors, to depict the terrible advent of the Anti-Christ. He is already here, and the sin-ridden earth is doomed to destruction, not in two or three years, but in a few days, so that the greatest possible haste must be made to effect an exit from this world; those who refuse to be buried alive will at any rate be dealt with in the same manner in a few days, with the advent of the Anti-Christ; the gain by waiting is therefore trifling. Gifted by the eloquence of a savage but strong nature, she brought infinite despair and torments to those who eagerly listened to her vivid descriptions of the coming terrors. "What are but two days in the grave compared with the eternal torment in hell; only two days of suffering and then — heavenly bliss forever!"

The first act of the terrible tragedy took place on the night of December 23, 1896. A party of nine people, the first to be buried alive, congregated in an adjoining house, and with tearful prayers and heart-rending good-bys went down to the cellar, dug by common efforts a grave, and with lighted candles, clothed in the "dress of the dead," and chanting hymns, entered it. But the man who was appointed to fill up the grave with earth hesitated, as he considered such an act equal to self-destruction (?), and with tears in his eyes begged to be allowed to go down into the grave with the rest. Vitalia decided that a certain Kovaleff, who was all prepared to enter the grave, should replace him, and this was done accordingly. The filling up of the grave was done with feverish haste, Vitalia assisting Kovaleff. This done they hurriedly locked the cellar and flew home. How long the buried ones remained alive, what unspeakable tortures they underwent, and how they died, is a secret jealously guarded by the grave. According to the opinions of the local physicians, the position of the bodies shows that their sufferings must have been horrible, and merciful death must have visited them in from one and one half to eight hours each.

The second party (number not stated) was buried by the same man on the night of December 27th. He, however, before filling up the grave, asked the volunteers, whether or not they were ready to die, and only after a positive reply proceeded with his work, during which he clearly heard for some time how they conversed and prayed.

Meanwhile Vitalia and Kovaleff were arrested, as in conjunction with others they refused to answer the census-taker's inquiries. The intense excitability and an unnatural exaltation, as well as the positive refusal to take any food pointed clearly to the fact that the arrested ones were far from being in a normal condition and that they were preparing to starve themselves to death. From February 5th to February 8th none of the prisoners had literally eaten or drunk anything, protesting that neither the State nor any individual was obliged to feed them, and that their religious belief did not allow them to eat or drink anything that had not been earned by their personal labor. As they continued obstinate in their resolution, they were set free and given over in charge to Kovaleff's mother. The starvation in jail naturally tended to induce a condition of anemia in the brain, and this, along with failure in general nutrition, contributed to accentuate and increase the condition of the nervous excitably. As if possessed, Vitalia took to preaching with even greater fervor, but she failed to find as ready converts as before. However, four old women, who lived with the Kovaleffs, succeeded by repeated requests and beggings in persuading Kovaleff (who by this time began to waver) to bury them; and they were joined by his own sister. The act had to be done with the greatest precautions, as vague rumors of the burials began to spread among the people. He assisted each of them into the grave; and having put themselves snugly together, he tenderly, so as to cause no unnecessary pain, filled up the common grave, his ear catching the last adieu from under the earth.

By this time, however, the period of reaction made its appearance. Vitalia herself began to lose faith in her own prophesies. The condition of ecstasy was rapidly passing, giving way to that of intense disappointment and unbounded despair, which was accentuated by the knowledge of an expected punishment by the authorities, as notwithstanding all the precautions taken the incident became an open secret, and loathing and hatred were expressed on every side toward Vitalia and her accomplice.

Thus exasperated by the failure of her undertaking, Vitalia decided upon destroying herself, and with the quick mind and inventiveness so peculiar to her, she began to exert pressure on three women, including Kovaleff's mother. As a result another, and the last, grave was entered into by these, to whom was also joined a brother of Kovaleff's, a deaf-mute boy. The burying of Vitalia, also done by Kovaleff, was however far from being the solemn procedure it was with the first party; it was but the *dernier resort* of an exasperated helpless soul fleeing from her own self. Before she died Vitalia succeeded in extorting an oath from Kovaleff that he would starve himself to death. He did not, however, keep his promise, and was accordingly subjected to general ridicule and unsparing contempt. He very naively told Professor Seekovsky how he abstained from eating for a few days, awaiting the advent of the Anti-Christ and the "destruction" of the world; but as this last was rather slow in coming, he thought he would drink some water; a day passed — no earthquake — he ate a tomato. Two weeks passed — no earthquake, no general war — and he began to eat little by little.

It would be a mistake to imagine, as some people will do, that Kovaleff is a monster in human form. On the contrary, Professor Seekovsky describes him as a kindly-disposed, mild-mannered man of a tender nature and very weak will. He was at first horrified at the very idea of being buried alive; but prevailed upon by such a woman as Vitalia he performed his terrible part under the influence of a power he was unable to withstand. He buried with the first party his wife and daughter; after this he fell into a condition of complete moral indifference and insensibility. The past seems to him a terrible nightmare; he was as if hypnotised, experiencing neither fright nor pity after the commission of the act. In talking to Professor Seekovsky he complained of an extreme mental anguish that had taken possession of his soul since the occurrence. It was not remorse that tortured him, but a great sorrow at the painful consciousness of the fact that the past could not be returned. He was not even brought before the court.

This tragedy takes us two or three centuries back, when epidemics of self-destruction by religious fanatics were of not infrequent occurrence in Europe. In the present case it is difficult to determine how much was due to the psychopathic tendencies of the actors, as generated by their religious views, and how much to the external circumstances which probably served only as the spark applied to the inflammable material. But however the case may stand, it proves beyond peradventure the fact that mental epidemics, whether they appear in the Parisian mob of the Zola trial, in the intellectual centre of the most refined nation of modern times, or at a Moody and Sankey revival, or as in the present case, can under favorable circumstances spread as rapidly as epidemics of physically contagious diseases. If this proposition is recognized, and its results be applied to historical investigations, a great many events in the past history of humanity will be viewed and explained in a light totally at variance with the methods of modern historical research.

Again, once these epidemics are recognized as such, that is, as deviations from the normal and the healthy, is it beyond the possibilities of art and science to prevent their occurrence?

A. Rovinsky, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, February 26, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1155	432	8.40	13.26	.90	.24	2.76
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	205	74	11.76	18.62	3.92	.98	2.94
Boston . . .	517,732	186	45	5.94	22.14	1.08	—	1.62
Cincinnati . .	405,000	117	—	3.40	16.15	—	1.70	2.55
Cleveland . .	350,000	74	28	5.40	12.15	1.35	1.35	—
Pittsburg . .	285,000	111	40	18.90	20.70	3.60	9.90	2.70
Washington .	277,000	105	26	7.68	12.48	.96	.96	1.92
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	35	16	2.86	11.44	—	—	2.86
Nashville . .	87,754	29	9	6.90	7.80	—	—	7.80
Fall River . .	95,919	28	18	10.71	32.13	10.71	—	—
Lowell . . .	87,193	34	9	2.94	20.58	2.94	—	—
Cambridge . .	86,812	22	7	4.15	4.15	—	—	—
Lynn	65,220	14	3	14.28	7.14	—	—	—
Charleston . .	65,165	30	11	—	10.00	—	—	—
New Bedford .	62,416	34	15	2.94	5.88	—	—	2.94
Lawrence . .	55,510	24	12	8.32	8.32	—	—	8.32
Springfield . .	54,790	16	6	—	18.75	—	—	—
Holyoke . . .	42,364	9	4	11.11	11.11	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	4	1	—	—	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	9	5	—	22.22	—	—	—
Chelsea . . .	32,716	6	0	—	33.33	—	—	—
Haverhill . .	31,406	9	1	11.11	22.22	—	11.11	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	12	2	—	8.55	—	—	—
Fitchburg . .	28,392	11	2	—	22.22	—	—	—
Taunton . . .	27,812	15	1	—	20.00	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	2	0	—	—	—	—	—
Everett . . .	21,575	7	2	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	9	1	22.22	—	—	11.11	11.11
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,415; under five years of age 797; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough,

erysipelas and fevers) 237, acute lung diseases 421, consumption 257, diphtheria and croup 73, diarrheal diseases 35, scarlet fever 29, measles 24, typhoid fever 23, erysipelas 10, malarial fever 6.

Form scarlet fever New York 24, Baltimore, Boston, Cleveland, Brookline and Woburn 1 each. From measles New York 17, Baltimore and Pittsburg 2 each, Washington, Cambridge and Lynn 1 each. From whooping-cough New York 11, Baltimore 3, Cincinnati, Pittsburg and Charleston 1 each. From erysipelas New York 5, Boston 2, Baltimore, Cleveland and Washington 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 10,992,524, for the week ending February 19th, the death-rate was 20.4. Deaths reported 4,384; acute diseases of the respiratory organs (London) 437, measles 189, whooping-cough 108, diphtheria 71, fever 34, diarrhea 33, scarlet fever 29.

The death-rates ranged from 13.9 in Preston to 29.0 in Wolverhampton; Birmingham 20.6, Bradford 19.9, Croydon 21.0, Gateshead 20.1, Hull 18.1, Leeds 17.1, Leicester 16.0, Liverpool 23.4, London 21.5, Manchester 20.5, Newcastle-on-Tyne 17.8, Nottingham 18.3, Plymouth 22.1, Sheffield 18.3, Sunderland 14.9, West Ham 15.6.

METEOROLOGICAL RECORD

For the week ending February 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..20	30.27	33	34	32	86	90	88	N.E.	N.E.	26	22	O.	R.	.57
M..21	29.90	36	38	33	100	100	100	N.E.	N.E.	9	18	R.	R.	2.45
T ..22	29.82	37	40	34	96	96	96	N.	N.W.	18	5	R.	C.	.19
W..23	29.86	38	41	34	96	79	88	W.	W.	7	10	R.	C.	.17
T ..24	29.98	40	46	34	73	67	70	S.W.	S.W.	15	14	C.	C.	
F...25	29.95	42	52	32	87	63	76	S.	W.	8	7	C.	C.	
S...26	29.95	33	38	28	71	72	72	W.	N.W.	12	9	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM FEBRUARY 26, 1898, TO MARCH 4, 1898.

By direction of the President, Major William C. Shannon, surgeon, will, upon the expiration of his present sick leave of absence, report in person to the President of the Army Retiring Board at San Francisco, Cal., for examination by the board.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING MARCH 3, 1898.

Austin, H. W. To rejoin station Boston, Mass. February 21, 1898.

Magruder, G. M., passed assistant surgeon. To proceed to Opelika, Ala., for special temporary duty. February 19, 1898. To proceed to Cartersville, Ga., for special duty. February 24, 1898.

Nydegger, J. A., passed assistant surgeon. To rejoin station South Atlantic Quarantine. February 18, 1898.

Norman, Seaton, assistant surgeon. Granted leave of absence for twelve days. February 19, 1898.

Clark, Taliafero, assistant surgeon. To report to medical officer in command, South Atlantic Quarantine, for duty and assignment to quarters. February 18, 1898.

Banks, C. E., surgeon. Detailed as delegate to represent Service at National Pure Food and Drug Congress. March 1, 1898.

Kinyoun, J. J., passed assistant surgeon. Detailed as delegate to represent Service at National Pure Food and Drug Congress. March 1, 1898.

Brown, B. W., passed assistant surgeon. To proceed to Birmingham, Ala., for special duty. February 25, 1898.

Stewart, W. J. S., passed assistant surgeon. To proceed to Fair Oaks, Ark., for special duty. February 28, 1898.

Parker, H. B., assistant surgeon. To proceed to New York, N. Y., for duty and assignment to quarters. March 2, 1898.

BOARD CONVENED.

Board convened to meet at Washington, D. C., March 2, 1898, for the physical examination of officer of the Revenue Cutter Service, Surgeon C. E. Banks, Chairman, and Passed Assistant Surgeon G. T. Vaughan, Recorder.

APPOINTMENT.

Herman B. Parker, of Pennsylvania, commissioned as assistant surgeon, February 26, 1898.

SOCIETY NOTICE.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, March 16, 1898, at 8 p. m.

At 8 o'clock. Short communications by Drs. J. L. Ames and C. J. White.

At 8.30 o'clock. Dr. R. C. Cabot: "Recent Advances in Blood Diagnosis, with Lantern Demonstration." Dr. H. F. Hewes will open the discussion.

April 20th. Dr. A. K. Stone: Subject to be announced.

E. W. Taylor, M.D., *Secretary*, 416 Marlborough St.

WARNING.

We are informed that a man who represents himself as a medical man impoverished by misfortune, and who is at present visiting physicians in Boston and vicinity, and making pathetic appeals to them to purchase patent gas-lighters from him at $1.50 apiece, in order to relieve his distress, is an imposter. The same gas-burners may be bought for thirty-five cents apiece in one of the large department stores.

BOOKS AND PAMPHLETS RECEIVED.

Silber als äusseres und inneres Antisepticum. Von Hofrath Dr. Credé, Divisionsarzt à la suite und chirurg. Oberarzt am Carolahause zu Dresden. Berlin. 1897.

Final Report to the Medical Society of the County of New York of its Committee on the Abuses of Medical Charity. Transmitted December 27, 1897. Reprint. 1898.

Abstract of the Proceedings of the New York State Medical Association, Fourteenth Annual Meeting held at New York, October 12, 13 and 14, 1897. Reprint. 1897.

A Case of Cerebral Abscess situated at the Posterior Part of the External Capsule. By Charles K. Mills, M.D., and Wm. G. Spiller, M.D., Philadelphia, Pa. Reprint. 1896.

Diseased Ova. Laparotomy for Diseases of Women from 1879 to 1889. Personal Experiences in Laparotomy. By Mary A. Dixon Jones, M.D., New York. Reprints. 1897.

Preliminary Report, Clinical and Pathological, of a Case of Progressive Dementia. By Chas. K. Mills, M.D., and Mary A. Schively, M.D., Philadelphia, Pa. Reprint. 1897.

An Obscure Case of Purpura Hæmorrhagica with Infection by the Bacillus Ærogenes Capsulatus. By W. F. Hamilton, M.D., and H. B. Yates, B.A., M.D., Montreal. Reprint. 1897.

Some Experimental Investigations as to the Effects of the Administration of Yeast Nuclein upon the Leucocytes. By Alfred Scott Warthin, M.D., Ph.D., Michigan. Reprint. 1897.

The So-called Hot-Air Treatment of Painful and Partially Ankylosed Joints, and an Experimental Investigation of the Physiological Effect of the Local Application of Hot Air on General Metabolism. By Charles H. Frazier, M.D., Philadelphia. Reprint. 1897.

The Antivenomous Properties of the Bile of Serpents and Other Animals, and an Explanation of the Insusceptibility of Animals to the Poisonous Action of Venom Introduced into the Stomach. By Thomas R. Fraser, M.D., LL.D., F.R.S., Edinburgh. Reprint. 1897.

Twentieth Century Practice, An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume XIII. Infectious Diseases. New York: William Wood & Co. 1898.

Deuxième Session de l'Association Française d'Urologie, Paris, 1897. Président, M. Le Professeur Guyon; Secretaire, M. Le Docteur Dernos. Procès-Verbaux, Memoires et Discussion, Publiés sous la direction de M. Le Docteur Dernos, Secretaire-général. Avec 95 figures dans le texte. Paris: Octave Doin, Editeur. 1898.

Treatment of Chronic Empyema of the Antrum of Highmore by Temporary Osteo-Plastic Resection of the Anterior Antral Wall. A New Method of Nerve Resection for Amputation-Neuroma. Lumbar Nephropexy without Suturing. A New Incision for Arthrectomy, Resection, and for Reduction of Irreducible Dislocation of the Shoulder-Joint. By N. Senn, M.D., Ph.D., LL.D., Chicago. Reprints. 1897–98.

Original Articles.

OBSERVATIONS ON MENINGITIS IN INFANTS AND CHILDREN.[1]

BY A. H. WENTWORTH, M.D.,
Assistant in Diseases of Children and in Pathology in the Harvard Medical School.

EPIDEMIC CEREBRO SPINAL MENINGITIS.

Etiology. — A primary disease caused by the diplococcus intracellularis meningitides. The manner in which infection occurs is still unknown. Nothing positive is known about the contagiousness of the disease, or the duration of the stage of incubation. The disease occurs epidemically and sporadically. It is rare in infants under one year, and in children occurs most frequently between the ages of three and ten years.

Pathology. — The lesions consist of an inflammation of the pia-arachnoid. The exudation is confined in the meshes of the pia; none is found on the surface of the arachnoid. In the most acute cases the exudation is slight in amount and purulent. In acute cases of longer duration there is more fibrin in the exudation. The pus cells are contained in the distended meshes of the pia. Large cells, derived from proliferation of the cells of the lymph-spaces and from the connective tissue corpuscles, appear. These cells are phagocytic and often enclose numbers of the exudation cells within them. In the very chronic cases the membranes are thickened. The exudation is slight in amount and is marked only by circumscribed whitish foci. The cells in these foci are degenerated and do not stain well. The ventricles are always distended. The ependyma is softened and frequently ragged. The fluid is cloudy and a small mass of fibrin or pus is always found in the posterior cornua of the lateral ventricles if the body has lain on the back.

The changes in the brain consist of softening and infiltration of the cortex with pus cells, which extend in from the meninges, and of foci of softening in the interior of the brain. There is also some proliferation of the neuroglia cells of the cortex. The exudation extends along the cranial nerves. The nerves most affected are the second, fifth and eighth pairs. The meninges of the cord are always affected and the exudation is found chiefly in the meninges of the lumbar cord over the posterior surface. The inflammation extends along the spinal nerves to the spinal ganglia. The changes in the interior of the cord are not so marked as in the brain. Degenerations are found in the cranial nerves and in the spinal nerve roots.

(The above description is a brief abstract of the pathological anatomy of the disease as given by Councilman, Mallory and Wright, "Epidemic Cerebro-Spinal Meningitis," etc.—Report of the Massachusetts State Board of Health, 1898.)

Symptoms. — Prodromal symptoms are usually absent. The onset is sudden and frequently severe. In most cases the earliest symptoms are headache, vomiting and fever. The latter may be quite high at first. Convulsions are not uncommon in young children at the onset, but they rarely occur later in the disease. Vomiting may be repeated several times, but usually ceases after the first day. The headache persists and is often very severe. The initial symptoms are rapidly followed by pain and tenderness in the neck and spine. Oftentimes these latter symptoms begin within twenty-four hours of the onset. At times they are not marked for two or three days. There is always more or less mental disturbance which may begin with the initial symptoms. It varies in intensity from apathy to unconsciousness. It is practically always present to some extent within twenty-four hours from the beginning of the disease.

Some patients become actively delirious, but as a rule they remain quiet and stupid unless disturbed. The pain and tenderness in the spine increase rapidly. The head is usually retracted and held rigidly. General hyperesthesia is a quite constant symptom and appears early. Variations in the degree of retraction, hyperesthesia and mental disturbance from day to day are characteristic of the disease. The temperature deserves especial attention. It is rarely more than *moderately* elevated and pursues a very irregular course. It is often below 103° F., and if it rises to 104° F. it rarely remains so longer than a few hours. Variations of several degrees are apt to occur from day to day. It may be classified as a remittent type of continued fever. The contrast between the severity of the nervous symptoms and the moderateness of the temperature is striking and characteristic. The pulse is usually higher than is commensurate with so moderate a fever. The respiration, as a rule, is somewhat increased in rate.

Dilatation of the pupils is very apt to occur within a day or two of the beginning of the disease. The reaction to light is usually slow and incomplete. Paralysis of one or more of the ocular muscles is common, but is often temporary, and the paralysis may affect different ocular muscles at different times. Paralysis of other portions of the body is uncommon during the course of the disease.

More or less conjunctivitis almost always occurs, and not infrequently severe lesions of the eyes, such as optic neuritis, iritis, and more rarely, choroiditis.

Deafness is not infrequent. The occurrence of herpes, usually about the mouth or on the cheeks, is observed in a number of cases after the disease has lasted for several days. Constipation is a constant symptom. After several days the abdomen becomes more or less retracted. The *tâche cerébralé* can be obtained in most cases. The urine not infrequently contains albumin, usually not more than a trace. Emaciation is a marked symptom in the cases in which the disease lasts longer than a few days. In most of the cases which end fatally, the patients die quietly notwithstanding the severity of the symptoms which precede the fatal termination.

Complications. — The commonest complications are lesions of the eyes and ears. The lesions in the eyes result from extension of the inflammation along the optic nerves often causing optic neuritis and atrophy. The resulting blindness may be partial or complete. Some of these cases recover their sight, to some extent, even after the occurrence of symptoms of optic atrophy. The lesions in the ears are due to extension of the inflammation along the auditory nerves, and may result in total and permanent deafness. Quite a number of cases have acute inflammation of the middle ear. The inflammation is said to be caused by the diplococcus intracellularis in some cases. If this is true, it is probable that the organisms reach the middle ear through the Eustachian tube because the diplococcus intracellularis has been found in the nasal cavities in some cases. Lesions of the lungs are not common but focal pneumonias have been found in some cases. In some of these cases the diplococcus intracellularis has been found, but other pathogenic organisms are generally present. Lesions of the heart and kidneys are very uncommon. General infection by the intracellular diplococcus is practically unknown. Now and then joint lesions are observed, consisting of swelling, redness of the skin and pain. The nature of the lesions is not known. The symptoms usually subside after a day or two.

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[1] From the Sears Pathological Laboratory of the Harvard Medical School.

Several well-marked types of the disease occur. They have been classified as foudroyant, acute, intermittent, chronic and mild cases.

Foudroyant cases begin with the same sudden and usually violent onset of fever, headache and vomiting and perhaps convulsions. These symptoms are rapidly followed by stupor, and even unconsciousness in some cases. There is usually high temperature; a very rapid pulse; a grayish septic-looking color of the skin; oftentimes multiple small hemorrhages into the skin; and death in a comparatively few hours. Retraction of the head and rigidity and pain in the spine may or may not be present in these cases. The clinical picture may resemble septicemia or toxemia more than meningitis, and death may occur before macroscopic evidences of exudation appear in the meninges, so that at autopsy, one finds simply excessive injection of the vessels and edema of the meninges. Microscopically, however, one detects the evidences of inflammation by the presence of leucocytes infiltrating the meshes of the pia; more or less coagulated serum and fibrin; and a varying number of red corpuscles.

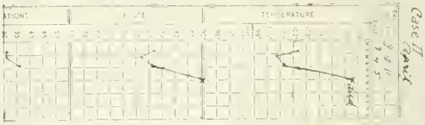
Case I. Female, five years old. Entered the hospital at 3.15 a. m., April 18th, in a moribund condition. The history stated that she was taken ill at 7 o'clock in the morning of the day previous with convulsions and fever. At 10.30 a. m. of the same day numerous small spots were observed in the skin of the body and to some extent on the extremities. At 11 a. m. of the same day there was a second convulsion. The child was brought to the hospital in a dying condition. Rigor mortis was present in the ankles. No heart-sounds could be heard. The child gasped a few times and died.

Two minutes after death rigor mortis was present to a marked degree in both arms and in the muscles of the neck and thighs. Subcutaneous hemorrhages, varying in size from one-half a centimetre or less, to several centimetres in diameter, were thickly distributed over the body and to some extent on the extremities. Lumbar puncture showed a somewhat cloudy fluid. No autopsy was obtained. The duration of the illness was about nineteen hours.

Acute cases run their course in from two to ten days. Quite a large proportion of them end fatally. One observes individual variations, some cases present symptoms which are absent in others. In general, however, the sudden onset with vomiting, headache, fever, pain and tenderness in the neck and spine, retraction of the head, hyperesthesia and varying degrees of mental disturbance from apathy to unconsciousness are present in all. The temperature is usually moderately elevated and irregular in type. The pulse-rate is more or less increased. In some cases which end fatally, the temperature rises before death several degrees higher than at any preceding time. In cases which recover, the temperature falls gradually and the symptoms subside after several days, and the patient appears to make a complete recovery. If severe lesions of the eye and auditory nerve have occurred the blindness and deafness may be permanent, although marked improvement has occurred in a number of cases of severe optic neuritis. The lesions of the auditory nerve are not so likely to show improvement.

Case II. Female, eight years of age. Entered the hospital April 9th, with a history of two days' illness. A history of the onset of the disease could not be obtained. This case was selected as a type of the acute form of epidemic meningitis because notwithstanding the absence of any history the course of the disease was perfectly characteristic, and it was one of the few cases in which an autopsy was obtained.

A physical examination made at the time of entrance is as follows: "The patient is somewhat under-developed and emaciated. The mucous membranes and skin are pale. There is no efflorescence on the body or extremities. There is considerable stupor. The child lies on her side with the head very much retracted and held rigidly. There is extreme hyperesthesia over the spine. The legs are drawn up. The pupils are widely dilated and react imperfectly to light. There is no strabismus. The tongue is coated. The throat is negative. The heart and lungs show nothing abnormal. The abdomen is retracted. The *tâche cérebralé* is present. The liver and spleen are not enlarged."



Some hours after entrance into the hospital and during the following two days the patient was very restless and often delirious. The head remained constantly retracted. There was considerable general hyperesthesia in addition to that of the spine. Considerable muco-purulent secretion gathered in the eyes. No efflorescence appeared on the skin. During the last twenty-four hours the patient was practically unconscious. At midnight of the 11th of April the rectal temperature registered 106.8° F., and the pulse was 170. From that time until the morning the patient grew quieter and weaker, and died quietly at 6 o'clock, after an illness of five days.

Lumbar puncture showed a very turbid fluid, in which a puriform sediment quickly settled to the bottom of the the test tube. Microscopic examination showed the exudation to consist of polymorphonuclear leucocytes and fibrin. Many of the cells contained diplococci, which decolorized by Gram's stain. Cultures on blood serum showed a very profuse growth of the diplococcus intracellularis. The growth was so excessive that the whole surface of the serum was covered in twenty-four hours and separate colonies were not distinguishable. Transplants from the original culture showed typical colonies of the diplococcus. The organisms decolorized by Gram's stain.

Autopsy by Dr. F. B. Mallory. Slender emaciated girl. The head shaved. The abdomen is below the level of the thorax.

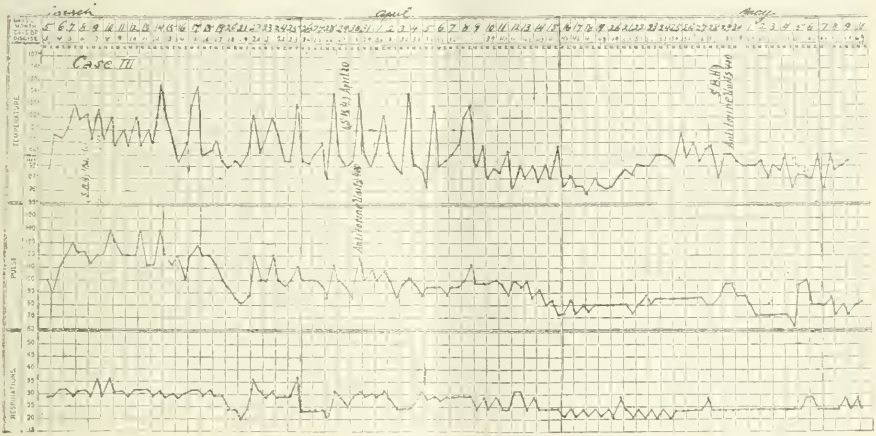
Brain. On removing the dura the surface of the brain on the left side shows a marked infiltration of the meshes of the pia with a yellow opaque exudation, thick enough to hide the convolutions beneath. The exudation is most marked along the course of the larger blood-vessels. On the right side, over the upper half of the brain, the exudation is much less in amount, and is largely serous in character and translucent, so that the brain tissue can be easily seen. The exudation is thickest along the longitudinal fissure on both sides about half-way down to the corpus callosum. At the base of the brain the exudation is most marked on the right side, particularly in the fissure of Sylvius. Quite a collection of exudation lies just back of the optic commissure. There is very little around the cerebellum, which shows marked injection of the blood-vessels. It is difficult to remove the exudation even with forceps. The serous portion flows away readily, but the cells are held in a firm mesh-work of fibrin. Both lateral ventricles contain a cloudy fluid, and in the posterior cornua there is a considerable collection of soft purulent material. The meshes of the pia over the cord are infiltrated in a like manner, particularly over the posterior surface. The exudation is yellow and opaque and completely hides the cord. The inner surface of the dura, both of the brain and cord, is pink in color, due to injection of the vessels. Considerable cloudy fluid escaped from the dura of the cord when it was opened.

Body. The peritoneal, pleural and pericardial cavities are normal. The heart contains clotted blood, but is not abnormal. The lungs are light and crepitant. The right lung is adherent at the apex by a few fibrous adhesions; there are a few small areas of atelectosis in the lower portion. The spleen is of normal size; on section the follicles are not visible. There is apparently no increase in the pulp, although the organ is slightly softer than normal. The kidneys show some opacity of the cortex and contrasts with the injected pyramids. The liver is normal. The stomach and intestines are normal.

Microscopic examination of the exudation in the meninges of the brain and cord show broad diplococci in small numbers, usually within the pus cells; occasionally a cell is found containing them in large numbers.

Cultures from the brain and cord show numerous small, translucent, slightly-elevated colonies. Cover-slip preparations show the presence of diplococci, often in the form of tetrads and occasionally in chains. The organism decolorizes by Gram's stain, diplococcus intracellularis meningitides.

Microscopic Examination by Dr. Wentworth. Portions of the brain and cord were hardened in Zenker, mounted in parafin and stained with Unna's polychrome methyleneblue. The pia-arachnoid is infiltrated with pus corpuscles. There is very little fibrin present. The meshes of the pia, where visible, are distended. In many places the structure is hidden or destroyed by the purulent inflammation. There is not much coagulated serum to be found. There are numerous very large cells, mostly in the vicinity of the blood-vessels. These cells are several times larger than a leucocyte and many of them contain leucocytes, blood-corpuscles and granular detritus in their protoplasm. Many of them are vacuolated. In some a large oval vesicular nucleus is visible, usually at one side; in many no nucleus is apparent. These cells, roughly speaking, are from five to fifteen times larger than a leucocyte. There is little if any change in the intima of the arteries. In addition to the purulent inflammation of the pia there is some proliferation of the fixed cells, the nuclei of which are vesicular and large and either oval or spindle-shaped. There is very little hemorrhage. The nuclei of the pus-corpuscles stain well, and in the protoplasm of many of them one finds one or more diplococci. There are no evidences of extension of the exudation from the pia into the brain substance. The neuroglia cells are not increased and no changes are apparent in their nuclei. A similar purulent inflammation is present in the pia of the cord, but the quantity of exudation is less and is confined largely to the portion of the pia covering the posterior part of the cord. The changes in the cord, if any, are insignificant.



Intermittent cases differ from acute cases in having one or several acute exacerbations with intervals of several days between. During these intervals the severe symptoms disappear and the patient appears to be much better. The temperature may be normal, or remain more or less elevated, but the pain and tenderness subside; the intelligence becomes normal and the patient appears to be convalescing. This is followed by a return of the acute symptoms: retraction, stupor, tenderness, fever, etc., which last for several days as before. Sometimes two or more of these acute exacerbations occur. The intervals between the exacerbations rarely exceed a few days, oftentimes not longer than two or three; but a guarded prognosis should be given in all acute cases of epidemic meningitis for at least two weeks after the cessation of active symptoms.

Some cases die during an acute exacerbation; others recover after one or more attacks and in some cases a chronic form of the disease develops which may terminate fatally or be recovered from. Emaciation is a marked symptom in the intermittent cases.

Case III. Male, eight years old. Entered the hospital March 5th. The patient was taken ill suddenly three days before with vomiting, headache, fever, and pain in the stomach. There was no history of retraction of the head. The physical examination at the time of entrance is as follows: "The patient is well developed and nourished, there is considerable apathy. The head is held rigidly, but is only slightly retracted. There is considerable hyperesthesia along the spine and to some extent of the extremities. The pupils are not dilated and react to light. There is no efflorescence on the body or extremities. The throat is negative. The heart-sounds are not abnormal. Nothing abnormal is detected in the lungs. The liver and spleen are not enlarged. The abdomen is not retracted. There is no albumin in the urine."

On the following day the head was retracted and the boy cried from pain in the neck. During the night he was delirious and restless. The head remained retracted for three days. The hyperesthesia continued to some extent for three or four days longer. After the first three or four days the patient was not so stupid, but was inclined to lie with the eyes closed most of the time.

On the sixth day of the disease lumbar puncture was performed and a very turbid fluid was withdrawn, which contained numerous pus corpuscles and fibrin. Diplococci were present in many of the cells. (The writer is unable to find his records of the bacteriological examination of this case, but is under the impression that this was one of the earlier cases in which he failed to obtain a growth of the organism from cultures of the spinal fluid because too little of the fluid was used.)

After the ninth day of the disease the patient did not complain of pain and seemed comfortable unless considerable pressure was applied to the spine. He lay most of the time quietly in bed and slept a great deal of the time. On the fourteenth day he complained of pain in the left elbow. On the following day the left elbow was swollen and tender and the skin was reddened. These symptoms subsided after a few days. From the fourteenth to the eighteenth day of his illness the cerebral symptoms were marked, although the temperature was considerably elevated for but one day. He was quite stupid, and cried out when touched, especially in the neck and spine. From the eighteenth to the twentieth day he was still quite sensitive to touch, but was not so stupid and had less pain in the head and neck. On the twenty-fourth day of illness there was no rigidity or pain or tenderness in the neck. The intelligence was normal. He took food well and seemed quite comfortable. By this time the emaciation was quite marked.

From the twenty-sixth to the thirty-sixth day of illness, sudden and high rises occurred in the temperature on alternate days. During the days of fever the patient was drowsy and complained of fever and of not feeling well. During the intervening days there were no marked symptoms of any kind. An examination of the blood for malarial organisms was negative. Lumbar puncture showed the spinal fluid to be much less turbid than on two previous punctures, although it still contained numerous pus corpuscles and considerable fibrin and occasional lymphoid cells. From the thirty-eighth day of illness until his discharge from the hospital the temperature remained normal or subnormal.

Constipation was a constant symptom throughout the disease until the last two weeks. During the sixth week of illness the patient sat up in bed. The pallor and emaciation were extreme. There was considerable weakness of the extremities, but no paralysis. No complication occurred in the eyes except slight conjunctivitis during the early part of the disease. The ears and heart were normal. He was discharged well after 68 days. There were no active symptoms after six weeks. In addition to the usual variation in the intensity of the cerebral and spinal symptoms the patient had one typical relapse.

(*To be continued.*)

An Anachronism. — Professor Peck, of Columbia University, in a review of "Quo Vadis" says: "There is an anachronism involved in the introduction at the end of the ninth chapter of a freedman 'with his face marked with small-pox'; for no mention of small-pox in Europe is found till four hundred years after the period described in 'Quo Vadis,' and no Roman author speaks of such a disease." — *Medical News.*

REPORTS OF CASES OF OPERATIONS ON THE UTERUS AND ADNEXA THROUGH THE VAGINA: DUHRSSEN'S METHOD.

BY WILLIAM N. SWIFT, M.D., NEW BEDFORD, MASS.

The method of opening the peritoneal cavity that I have employed in the following cases is practically the one described and practised by Professor Dührssen, of Berlin. The parts are shaved and the vagina washed with soap and scrubbed with a brush, then scrubbed with a solution of creolin liq. potass. and green soap, douched with sterile water, and finally with a solution of corrosive sublimate (1 to 4,000). The cervix is then dilated, curetted with a sharp curette, afterwards with a douche-curette, and washed out with corrosive-sublimate solution (1 to 10,000). The anterior lip of the cervix is then seized with the fixature. This instrument, as used by Prof. A. Martin, consists of a stout sound behind and a pair of stout double right-angle hooks in front, set on a broad surface. The sound is inserted into the uterine canal, the double hooks into the anterior lip of the cervix, which is compressed between the two. The uterus is then brought down as far as possible and held forward.

An incision about half an inch long is then made through the vaginal mucous membrane at the upper border of the anterior lip of the cervix. One must be careful not to make this incision too high up, for in pulling down the uterus the bladder is displaced and may be wounded. This incision is prolonged with scissors about half an inch on each side. A double tenaculum is put on the vaginal mucous membrane at the centre of the incision, and traction made upwards. The bladder is then separated from the uterus by the finger, aided at times by the closed points of the scissors.

It is important to carry the dissection well out on each side so as to have the ureters as well as the bladder out of the way. By keeping close to the uterus there is no danger of wounding the bladder. This dissection is carried as far as the internal os. It is a mistake to strip off the peritoneum from the uterus further up than this point. The fold in the peritoneum may be felt by the finger against the anterior surface of the uterus, and in most cases may be seized between the thumb and finger. An artery clamp is then put on the peritoneum and the peritoneal cavity opened by a small snip with the scissors as near the uterus as possible. Artery clamps are then put on each side of the opening in the peritoneum and the bladder dissected away from the peritoneum still further. As the bladder is pushed away, the peritoneum is slit up and clamps put on each side as guides. A pair of double hooks are put on the vaginal mucous membrane about half an inch below the urethra. The middle point of the vaginal mucous membrane in the transverse incision is seized with forceps. Traction is made with both instruments, and the ridge made in the mucous membrane is slit up with scissors. The triangular flaps of vaginal mucous membrane formed by the transverse and longitudinal incisions are then dissected away from the bladder. This usually peels off easily with the shut points of the scissors. If vaginal fixation is to be done the sutures are then inserted on each side through vaginal mucous membrane and peritoneum. I began by using silkworm-gut, but since my first two cases have used catgut, the silkworm-gut being rather troublesome to remove. This incision gives a wound extending from the cervix nearly to the urethra, and laterally about an inch on each side of the cervix.

The examination of the uterus and adnexa is next made. The uterus is then seized with stout double hooks; I much prefer right-angle hooks as they do not pull out so readily. The fixature is removed and the cervix pushed back with the speculum. The uterus is then delivered through the wound, any adhesions being separated at the same time with the finger. When the uterine tissue is soft, the double hooks may tear out several times before the uterus is finally delivered. The first hooks inserted are usually too low and the uterus has to be seized several times before it is pulled out. In this manipulation the uterine tissue may be a good deal torn. The tears should at once be sewed up with a fine needle and catgut. No ill effects come from these so far as I have seen. This gives ready access to the uterus, tubes and ovaries, either for their removal or for the excision of diseased portions. The tubes may be probed and small cysts of the ovaries opened and curetted. After whatever is indicated has been done the fixation suture on each side is passed around the round ligament at its base close to the uterus. The uterus is then replaced and the end of the fixation suture on each side is passed through the peritoneum and the vaginal mucous membrane. The rent in the peritoneum should then be united with a continuous suture of fine catgut. If this be done, no raw surface is left, and the adhesions holding the uterus forward will only be between the two layers of peritoneum. The wound in the vagina is then sewed up with a continuous catgut suture. Amputation of the cervix may be done if indicated. Finally, the fixation sutures are pulled tight and tied.

The chief advantage of the vaginal route is that it is a much less serious operation than abdominal section. The intestines are hardly seen. When the peritoneal cavity is opened a gauze sponge is pushed in on a holder and the intestines are not seen again. There is no abdominal scar, with risk of hernia. The patient has much less discomfort immediately after the operation. She can turn on her side at once and is usually up in two weeks. Another great advantage in this operation is the ease with which any operation can be done on the tubes and ovaries after they are delivered.

Where the operation can be done easily there can be no question but what it is much to be preferred to the abdominal route. A small vagina makes the operation difficult even with lateral incisions. The uterus may be so large that it fills the whole vaginal wound when it has been delivered. This makes it impossible to get at the adnexa without removing the uterus. A fixed uterus that cannot be drawn down at all makes this operation impossible. By bisecting the uterus it is possible to remove very large inflammatory masses.

The Landaus, in Berlin, hold that all cases of inflammatory pelvic disease should be attacked through the vagina and hysterectomy done if necessary. Martin and Dührssen are more conservative, and operate on large masses through the abdominal wall. Martin passes his fixation sutures through the uterine tissue, but in women who are likely to become pregnant not above the internal os. Instead of opening the peritoneum with scissors he simply pushes his finger through it and does not attempt to sew it up separately.

I saw a number of cases last winter in Berlin, of women who had become pregnant after the operation of vaginal fixation. In every one of these cases the uterus was freely movable and the patients did not complain of pain. I have never seen after the vaginal operation any bladder disturbance or any tenderness of the vaginal scar tissue that has been mentioned by some writers.

Case I. Mrs. S. B., twenty-seven years, married, two children, the youngest one year. Menstruation irregular and very painful. Examination showed patient very anemic. Large retroflexed uterus, very tender. Mass in region of left ovary.

Operation, August 2d. Usual incision made in front of the cervix and bladder separated from uterus. Plica opened with scissors. The uterus was retroflexed and bound down by adhesions easily broken up. It was delivered without difficulty through the vaginal incision. The left broad ligament was somewhat thickened, the left ovary and tube prolapsed and adherent. The right ovary contained a cyst the size of a walnut. The left ovary and tube were freed from adhesions; the right tube and ovary were removed. The uterus was fixed by ligatures passed on the right side through the stump of the tube and on the left around the round ligament near its insertion into the uterus. The peritoneum was sewed up with catgut. All the tissues were soft, owing to an infiltrated condition, and the hemorrhage was more than usual. Patient did perfectly well.

On the second day after the operation passed urine, the first three or four times with some pain. Bowels were moved on the second day, and the patient walked out in two weeks after the operation. At present the uterus is in normal position. No tenderness in pelvis. Vaginal wound not tender. No difficulty or pain in micturition. Patient's general condition much improved, but complains of pains in various parts of the body. She has menstruated regularly without pain.

Case II. Mrs. L. R., twenty-one years, married two months. Probably gonorrhea two years before; since that time more or less pelvic pain and very marked pain at menstrual periods. Since being married has had great pain across lower part of abdomen.

Flowing most of the time but not profuse. Coitus so painful that it became impossible. Examination showed uterus much enlarged and very sensitive, retroflexed and somewhat towards the left side. Enlarged tubes felt on both sides.

Operation, August 9th. Bladder separated from uterus without difficulty. Plica opened with scissors. Extensive adhesions over fundus of uterus and tubes. The uterus was seized with double hooks and delivered through the wound with some difficulty. The left tube and ovary were firmly adherent. The tube was freed from adhesions, and on being opened was found to be entirely disorganized and occluded. It was removed but the ovary was left, as it was normal. The right ovary and tube were bound down by strong adhesions. The ovary contained one large and many small cysts. On section it showed no normal tissue. The tube was also much thickened, and both ovary and tube were removed. The uterus was fixed by three silkworm-gut sutures through the vaginal peritoneum, uterus itself, then peritoneum and vagina on the other side. After these sutures had been put in place the peritoneum was sewed up with a continuous catgut suture and later the wound in the vagina.

After coming out of ether the patient showed no symptom of shock. She passed urine on the morning of the second day.

Examination at present shows no tenderness over scar in vagina. Uterus small, in normal position, not tender. Some tenderness over left ovary, which can be plainly felt. Patient feels well and has gone to work. Coitus not painful. Has menstruated regularly and with only slight pain over region of left ovary.

The retention of the left ovary when the tube was removed is an interesting point in this case. I think the mental effect of the continuance of menstruation in such a case is important.

CASE III. Miss E. B., thirty-six, single. Much pain in lower part of abdomen. Pressure in pelvis. In March curetted and hemorrhoids removed. Uterus retroverted and somewhat fixed.

Operation, August. Fundus large. Slight adhesions, easily separated. Uterus delivered with difficulty. Tubes and ovaries normal. The fixation sutures were passed through the uterus below the internal os. A small vagina made the operation difficult. The tissues were soft and hemorrhage was quite free. Patient passed urine the morning of second day; she did well, and was up in two weeks. At present patient is much improved. Uterus in normal position; fundus freely movable. Scar in vagina not tender. No difficulty with micturition.

CASE IV. Mrs. A. S., forty-eight years, married. Prolapse for twenty-five years, since the birth of first child. Has been getting worse, and for two years has suffered a great deal. Has had considerable hemorrhage and not been able to work. Examination showed complete prolapse of enlarged uterus. Complete rupture of perineum and tear in rectum for about two inches. The cervix was enormously hypertrophied and ulcerated about the cervical canal.

Operation, September 18th. Cervix dilated and canal curetted. The usual transverse incision was made, and the bladder was dissected from the uterus. The reflection of the peritoneum from the uterus was very high up, caused no doubt by the prolapse. The peritoneum was opened with the finger. The uterus was easily delivered. The fundus as compared with the cervix was small. The tubes were normal. The ovaries both contained small cysts that were punctured and curetted. Fixation sutures were passed around the bases of the round ligaments. The anterior and posterior lips of the cervix were amputated high up. A large flap of vaginal mucous membrane was cut away on each side to narrow the vagina in front, and the perineum repaired by Simon's operation as modified by Dührssen.

The patient did well in every respect. The result is exceedingly good. The uterus is small, in normal position, and does not descend with hard straining. The vagina is small, with good perineal body and control of sphincter.

CASE V. Mrs. M. N., thirty-seven years. Six years before, at birth of child, had perineum lacerated to sphincter; since two years complete prolapse. Not able to work.

Operation, September. The peritoneum was opened in the usual way without difficulty, and the uterus delivered. Fixation sutures were passed around the bases of the round ligaments on both sides. A large piece of vaginal mucous membrane was cut away on each side of the vaginal incision in front to narrow the vagina. The cervix was amputated high up and a Simon-Dührssen operation done to repair the perineum.

At present the uterus is small, in normal position and high up. The result is very good on the perineum.

CASE VI. Mrs. L. M., twenty-six years. Entered hospital flowing after an abortion at two months. Uterus very large and flabby. Curetted. Flowing stopped, but uterus very tender and impossible to keep it in normal position.

Operation, two weeks later. Usual incision made. Bladder separated from uterus. Perineum opened with scissors. Uterus delivered with some difficulty owing to its size. Small cysts in both ovaries were punctured and curetted. Tubes normal. Fixation sutures were passed at base of round ligaments. Cervix amputated high up. Patient much improved in general condition. Uterus in good position, much smaller, and pelvic tenderness relieved.[1]

CASE VII. Miss M. E. B., forty-two years. Patient in last six months has had four attacks of pelvic peritonitis. Almost constant pelvic pain and much pain at menstrual periods. Much gastric disturbance. Patient well nourished, but rather flabby. Examination showed prolapse, cervix protruding from the vulva; which patient states dates from a fall when she was about fifteen. Cervix much hypertrophied. Fundus fixed, with large mass in right iliac fossa.

Operation, November 18th. The incision in the vagina was made as large as possible. The reflection of the peritoneum was high up. The fundus was delivered with some difficulty, owing to the large size of the uterus and the extensive adhesions. Examination showed very extensive adhesions all about the pelvis. A cyst about the size of a good-sized orange on the right side. It was impossible to deliver the tubes and ovaries through the vaginal incision, owing to the large size of the uterus. The uterus was bisected and clamps put on the left broad ligament. The left side of the uterus, ovary and tube were then cut away. The cyst on the right side was next opened and the broad ligament clamped outside of it. The cyst and the right tube were then excised. A small piece of sterilized gauze was put between the clamps.

The patient did well. The clamps were removed in forty-eight hours and the gauze on the fifth day. Patient passed urine on the third day. On the seventh day, when the nurse was out of the room, the patient got up and walked across the room. When the nurse came back the patient was sitting in a chair. On the eleventh day after the operation the patient drove to her home, about four miles, without any ill effects. At the end of three weeks the vagina had healed perfectly, and there was no tendency to prolapse. The patient has relief from pelvic pain and tenderness.

HORSESHOE KIDNEY SIMULATING MALIGNANT DISEASE OF THE ABDOMEN. — A case in which a tumor in the epigastrium in a man of fifty-seven, who was suffering from local pain, dyspepsia and emaciation, proved in operation to be a horseshoe kidney, is reported by Oliver, of Newcastle-upon-Tyne, in the *British Medical Journal* for February 26th. Before exploratory laparotomy a probable diagnosis of malignant disease was made. The therapeutic result of the exploratory laparotomy was excellent.

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[1] The patient is at present three months pregnant. The uterus is in normal position and the fundus freely movable. Patient complains of some backache. Two weeks ago, after a hard day's washing, had a slight hemorrhage. None since that time.

THE RELATION OF THE URETERAL CATHETERS TO THE SURGERY OF THE KIDNEYS IN WOMEN.

BY EDWARD REYNOLDS, M.D., BOSTON.

On looking over my clinical records I find that during the last three years I have catheterized the ureters for supposed surgical disease of the kidneys seventeen times, all the patients being women. I do not intend to inflict upon you the history of the seventeen cases, nor even of all the operative cases. I propose, instead, to limit myself to a statement of the conclusions which my experience has led me to adopt, and to explain those conclusions by brief outline reports of the salient features of a few of the cases which best illustrate my positions.

Of the various methods of ureteral exploration of the kidneys in women, the study of the separated urines of the two kidneys takes the chief place, and furnishes us with a method of physical examination of the kidneys which is so far accurate and safe that the ureteral catheters occupy to the surgery of the kidneys in women much the same relation which the stethoscope has so long held to the medical diseases of the chest.

The importance of this examination rests upon the fact that it enables us to isolate the disease and to determine with certainty not only which kidney is affected, but exactly what the condition of each kidney is. The points which I think especially worth illustrating are:

(1) The symptoms may be transposed, that is, the pain and tenderness may be referred by the patient to the comparatively sound kidney.

(2) There may be a transitory inflammatory affection of the sound kidney which should lead us to defer operation until it has passed away.

(3) The choice between nephrotomy and nephrectomy, and sometimes the decision as to whether any operation is or is not permissible, should be decided by a comparison of the relative condition of the two kidneys.

(4) In cases of renal calculus, the question between nephrolithotomy and nephrectomy must depend largely upon whether the condition of the affected kidney affords a prospect of good healing and a useful kidney after nephrotomy.

Case 1. Mrs. H., seen October 13, 1896, with Dr. Hayes, of Williamsburg, Mass. Much emaciated and very weak. Has had frequent micturition and foul urine ever since an acute febrile attack twenty years ago. Passed two small stones, a few weeks apart, six years ago. Had a sharp hemorrhage from the bladder nine months ago. Is conscious at intervals of sharp pains underneath the right false ribs. There is tenderness on palpation over the right renal region; and on vaginal examination the vesical end of the right ureter is decidedly thickened and very sensitive. A provisional diagnosis of stone in the right kidney seemed clear. But catheterization of the ureters on the following day showed that the right kidney was secreting a nearly clear urine, while the left yielded only the foulest pus that I have ever seen. The specimens were submitted to Dr. J. B. Ogden, who reported that the fluid obtained from the left side was a degenerated pus almost unmixed with urine, and containing but .57 per cent. of urea. He further found that although the urine of the right side contained a fair amount of urea (1.64 per cent.) it also contained considerable pus, many small round cells, and hyaline and granular casts with fat and degenerated epithelium adherent, the evidences of a sub-acute pyelo-nephritis.

Right Kidney.— May 12, 1897. Color, slightly pale and turbid. Reaction, faintly acid. Albumin, one-eighth per cent. Sediment. Considerable. A few pus corpuscles free and in occasional clumps. Few squamous cells and blood globules. Few small round cells, an occasional one of which is fatty. Occasional hyaline and granular cast of small diameter with little blood and a fat globule adherent. An occasional cell as from ureter and renal pelvis. Urea, 1.33 per cent. Amount of urine received, 8 c. c.

Left Kidney. — May 12, 1897. Color, pale, turbid. Reaction, faintly acid. Albumin, one-fourth per cent. Sediment. Much. Large amount of pus, much of which is degenerated. Many small round cells, some fatty. Some blood. Few squamous cells (probably bladder). Urea, 0.38 per cent. Amount of urine received, 6 c. c.

If the one kidney which the woman possessed was in this condition, it was evidently no time for an operation. I washed out the pus sac which represented the left kidney through the ureter, and sent her home for medicinal treatment. Six months later she returned, and a fresh examination of the separated urines showed that while the relative importance of the two kidneys remained about as before (.38 per cent. and 1.33 per cent. of urea), the right was now in substantially normal condition. Its sediment showed only an occasional hyaline cast of small diameter.

Right Kidney. — October 15, 1896. Color, pale. Specific gravity, 1.014. Reaction, faintly acid. Albumin, large trace. Sediment. Considerable. Chiefly squamous epithelium. Considerable pus and normal blood. Numerous small round cells, few fatty. An occasional hyaline and granular cast with little fat and degenerated renal epithelium adherent. Urea, 1.64 per cent. Amount of urine in forty minutes, 26 c. c.

Left Kidney. — October 15, 1896. Color, turbid. Specific gravity, 1.008. Odor, fetid. Reaction, alkaline. Albumin, one-fourth per cent. Globulin present in considerable amount. Sediment. Much. Chiefly degenerated pus. Numerous small and medium round cells, few fatty. An occasional abnormal blood globule. Two doubtful granular casts seen. Urea, 0.57 per cent. Amount of urine in forty minutes, 13 c. c.

Boston, October 17, 1896.

My dear Doctor: — The enclosed reports of urines from right and left ureters, show on the left, evidence of a chronic pyelitis and probably more or less destruction of the kidney, for the percentage of urea is very low. I found no crystalline elements to indicate the possibility of a stone. The foul urine found in the bladder was probably made fetid by the urine from the left side. On the right the squamous epithelium and I presume the pus, comes from the bladder. There is evidence of some renal disturbance on this side and I think it is probably secondary to the trouble on the left. This kidney is doing a good amount of work as shown by the urea.

Yours very truly,
J. Bergen Ogden.

P. S. Will send report of examination for tubercle bacilli in a few days.

I again washed out the affected kidney, cut down upon it, and removed a large stone; the nephrectomy which was plainly indicated by the local state being contraindicated by the patient's extremely bad general condition. The mere nephrotomy was followed by some days of quite alarming weakness, but the patient eventually made a good recovery.

This case was chosen because it illustrates three of the four points which I wish to make, better than any other single case that I have had and I wish to avoid taking up too much time with reports of cases:

(1) The symptoms may be transposed and referred to the sound side.

This case had the typical symptoms of renal stone. Abdominal palpation was negative; but the symptoms were referred to the right side, which would ordinarily be considered a quite sufficient justification for an operation upon the right side, and yet she had no functional kidney upon the left side, and the efficient kidney which she had upon the right was in a state of acute inflammation. There can be no question of the result which would have followed an operation upon that right side, nor of the importance of the ureteral examination to this patient; and, although I believe such cases of transposition of symptoms to be rather uncommon, it is still worth while to save the lives of even a few patients. That the case is not unique is shown by the existence of another similar instance in this small list of seventeen cases.

(2) There may be a transitory inflammatory affection of the sound kidney which should lead us to put off the operation.

We know that the existence of suppurative disease in one kidney is always a menace to the health of the other side, and as I have several times found a mild and transitory pyelitis on the sound side which easily cleared up under medicinal treatment, I am inclined to emphasize the importance of always determining the condition of the comparatively sound kidney a few days before operating. The value of such a procedure is, I think, well shown in the case quoted.

(3) The choice between nephrotomy and nephrectomy, and sometimes the question whether any operation is desirable or not, should be decided by the comparative condition of the two kidneys; in this the condition of the sound kidney is not the only question worthy of an answer. It is also of some importance to know the functional value of the affected kidney, since if it is so far degenerated that all the patient's needs are provided for by the other side, its complete removal is a far less serious matter than if it is still performing a large share of its duty. It will be seen that this point is of considerable importance in determining the choice between nephrotomy and nephrectomy, and may even determine the question of whether a feeble patient is or is not in condition to withstand any operation, as in this instance.

(4) In cases of renal calculus, the question between nephro-lithotomy and nephrectomy must depend largely upon whether the condition of the affected kidney affords a prospect of good healing and a useful kidney after nephrotomy.

I am not able to illustrate this point by the report of a completed case, since all the renal stones which I have had have been contained in extensively damaged kidneys; but I think Dr. Ogden's reports upon the following case may be of interest in this connection:

Mrs. H., seen with Dr. Round, of Norton, Mass. Patient is a stout woman in good general health, but much troubled by uncontrollable frequency of urination, especially at night.

Right Kidney.— December 10, 1897. Color, pale, turbid. Reaction, acid. Albumin, trace. Urine slightly viscid.

Sediment. Much. Considerable pus free and in clumps. Numerous small round cells and some normal and abnormal blood. Occasional medium and small caudate cell. One large clump of cells seen — round cells surrounded by small caudate cells — probably pelvic, although suggestive of new growth. Two doubtful casts seen. Urea, 1.39 per cent. Amount received, 19.5 c. c.

Left Kidney. — December 10, 1897. Color, high, turbid. Reaction, strongly acid. Albumin, trace.

Sediment. Much. Considerable normal and abnormal blood. Few small caudate, medium and small round cells free and in clumps. Occasional hyaline and granular cast, rarely one with a blood and fat globule adherent. Few uric-acid crystals, apparently primary. Occasional secondary calcium oxalate crystal. Occasional leucocyte. Amorphous urates. Urea, 2.72 per cent. Amount received, 10 c. c.

The turbidity of this urine due chiefly to amorphous urates and the blood. The urine from the *right* will be another surprise, undoubtedly. Will do the sediment from the *right* for tubercle bacilli and let you hear the result to-morrow. J. B. O.

[This patient also had transposed symptoms. E. R.]

Right Kidney. — December 12, 1897. Color, high, slight bloody tint. Specific gravity, 1.023. Reaction, strongly acid. Albumin, slight trace. Sugar, absent.

Sediment. Much. Chiefly pus, free and in clumps. Many small round cells, some fatty. Few large primary crystals of uric acid. Considerable normal and abnormal blood. Occasional brown granular cast with renal cells and little blood adherent. Few squamous epithelium cells. Occasional small caudate cell. Urea, 2 72 per cent.

Thus far I have been unable to find any tubercle bacilli. Will look again to-morrow (Monday). J. B. O.

Left Kidney.— December 13, 1897. Color, high. Reaction, strongly acid. Albumin, very slight trace.

Sediment. Considerable. Numerous normal blood globules. Considerable secondary uric acid and calcium oxalate. Occasional primary crystal of calcium oxalate. Few medium and small caudate and round cells, probably from ureter. Occasional hyaline, granular and brown granular casts, rarely one with a blood and fat globule adherent. Urea, 3.92 per cent. Amount received, 9 c. c.

Twenty-four-Hour Specimen.—December 13, 1897. Color, slightly high. Specific gravity, 1.023. Reaction, strongly acid. Albumin, very slight trace.

Sediment. Much. Chiefly pus, free and in clumps. Numerous small round cells and some squamous epithelium. Some normal and abnormal blood. Occasional hyaline, granular and brown granular casts, some of large diameter, rarely one with blood and leucocytes adherent. Two very large uric-acid crystals, probably primary. Urea, 3.03 per cent.

Right Kidney. — December 13, 1897. Color, pale, turbid. Reaction, normally acid. Albumin, slight trace. Urine, viscid.

Sediment. Much. Chiefly pus, free and in clumps, some degenerated. Numerous small round cells. Little normal and few abnormal blood globules. Occasional hyaline and granular casts, one seen with leucocytes adherent. Occasional small caudate and medium round cell (probably ureter). Occasional secondary crystal of calcium oxalate. Urea, 2.27 per cent. Amount received, 15 c. c.

The urines all look much the same as before. The uric-acid crystals look primary, yet in a urine so strongly acid it is possible that they are secondary, thus far, tubercle bacilli not found.
J. B. O.

The presence of pus in the specimen from the right kidney is strongly suggestive of disease (possibly calculus); but the amount of the pus being comparatively small and the other characteristics of the specimen being substantially normal, I shall expect, if this patient proves to have a stone and comes to operation, that she will need nothing more than a nephro-lithotomy. The left kidney being in a condition of active irritation, this patient has been put upon forced diuresis, to be examined again at the end of some months, with a view of determining again the condition of each kidney. Should repeated examinations determine the constant presence of pus or other pathological elements, and her urinary frequency continue as distressing as at present, I shall expect to cut down upon her kidney.

Treatment — The ureteral instruments are of far less value in treatment than in diagnosis; but there are two conditions in which they are of the first importance.

(1) Some of the most common symptoms of renal stone, that is, renal colic, frequency of micturition, pain on driving over rough roads and distressing vesical tenesmus — a group of symptoms certainly strongly suggestive of renal stone — may be due to stricture of the ureter, and these symptoms may be relieved by the rapid dilatation of the strictures by bougies at a single sitting, usually without ether.

Case III. Mrs. C., seen with Dr. G. G. Sears, January 27, 1897, has been subject to occasional and slight attacks of vesical tenesmus for from five to six years. For more than two years has always been obliged to urinate from two to three times at night, and every two or three hours during the daytime. On December 30, 1896, was attacked by dull pain in the right side, followed by sudden and extremely violent vesical tenesmus, which kept her constantly occupied in painful and ineffectual attempts at micturition for two hours, at the end of which time there was a somewhat sudden relief, coincidently with the passage of a small amount of water. In the next five or six days she had repeated similar attacks. She was then put to bed, and since then has not had any severe attack, though never wholly free from tenesmus after micturition.

After wasting some time in ineffectual attempts to relieve this patient by treatment of the bladder, the right ureter was explored with a bulbous ureteral sound. Three distinct strictures were recognized, and the right ureter was dilated by bougies, at one sitting, from No. 7 to No. 13 French. The operation was followed by considerable pain, but the tenesmus disappeared within twenty-four hours, and has not recurred. Dr. Sears informs me that the patient is now in excellent health and free from any urinary symptomatology.

I have since seen several such cases; and one recent case is the more striking in that the patient had previously been under the care of one of our most distinguished surgeons, and for many weeks under that of one of our leading gynecologists, for the relief of renal colic, without effect. This case is too recent to be quoted, but I am informed by her physician that her troubles have been so far completely relieved by a single dilatation of the ureter.

(2) The evacuation and washing out of the pus through the ureteral catheter is sometimes an expedient of considerable value as a temporary and palliative procedure.

Case IV. Mrs. H. was seen with Dr. Tuttle, of Cambridge. Patient excessively emaciated and waxy looking. A considerable tumor was easily to be felt in the renal region on the right side. The patient was evidently too feeble to make even a rapid incision into the pus sac safe. A renal catheter was passed into the right ureter, and a large quantity of foul pus sucked out with an ordinary aspirator. The kidney was then washed out with salt solution until this came away clear. The renal catheter was left in the ureter, and the washings repeated daily for sixteen days. Under this treatment the amount of pus decreased greatly. The temperature subsided, the patient's appetite returned, and she gained flesh and condition with great rapidity. At the end of the sixteen days the catheter was removed, and it proving difficult to reintroduce it, Dr. Tuttle let the patient go several days without it; but as she immediately fell off in condition, he cut down upon the abscess and introduced a tube. Ten months later, as pus was still issuing from the tube, and as the patient was now in thoroughly good condition, he did a nephrectomy, and informs me that the patient is now well. In my judgment an operative procedure would have been necessarily fatal on the day when I first saw the patient, and the safety of the nephrotomy three weeks later was, in my belief, undoubtedly due to the improvement which was permitted by the daily flushings of the kidney.

Typhoid Fever is epidemic at Buda-Pest, in consequence, it is generally supposed, of impure water. Dr. Frank has been appointed to make an investigation.

A REVIEW OF THREE YEARS' WORK AS A BOARD-OF-HEALTH PHYSICIAN.

BY ALLEN GREENWOOD, M.D., WALTHAM, MASS.

Having on the 1st of January, 1898, resigned my position as physician to the Waltham Board of Health in order to devote more time to my ophthalmological work, I thought that I could in no better way bring to a close my health work than by giving this brief review, hoping that some points might be brought forward helpful to others in their efforts to control contagious diseases.

For some time prior to the beginning of the year 1895, it had been apparent to the local board of health that the quarantining and questions of recovery of cases of contagious diseases, being left to a non-medical agent and the family physician in charge, were not productive of the best results in preventing the spread of these diseases. At one time it was customary for physicians to send in a card notifying the board where cases of scarlet fever had recovered and were in no need of further isolation.

This card was often sent in on the strength of the parents' statements that the patient had ceased desquamating, the physician not taking the trouble to ascertain the true state of affairs, which were not usually in accordance with the statements of householders anxious to have a red card removed. To obviate this a limit of six weeks was at one time established for scarlet fever cases; but this was unjust to some and not time enough for others.

Owing to these obvious defects in the methods of the board and the board's desire to bring to the aid of physicians the newly perfected bacteriological test in the diagnosis of diphtheria, it was decided to employ a physician to have entire charge of the contagious-disease department with one of his principal duties to consist in the taking and examining of cultures for the physicians of the city. I was appointed to fill this position in January, 1895; and in writing this review I shall attempt to indicate what are the duties devolving upon the incumbent of such a position in a small city, say 15,000 to 30,000 inhabitants, also what may be accomplished in the way of lessening the spread of contagious diseases.

First, I will give in full a regulation which the board of health has adopted at my suggestion:

Regulation (10).

No parent, guardian, or other person having the custody of any child, shall permit such child to attend any school in this city so long as any member of the family with which such child may be living is sick with small-pox, diphtheria, scarlet fever or measles; nor until *two negative* bacteriological results have been obtained *three* days apart in all cases of diphtheria occurring in such family; nor until complete recovery shall have been determined by the Physician of the Board of Health in the last case of scarlet fever, measles or small-pox.

This regulation, of course, applies particularly to school-children, but health-officers can have given them by boards of health authority sufficient to insist on the proper quarantine for any case, and they should make every effort to this end.

The stringency of this regulation has, of course, added to it the provision of the State statutes, which require that no child shall be allowed to return to school until two weeks have elapsed after the dismissal from quarantine by the board of health.

Whenever a case was reported at the office of the board I was immediately notified, and as soon as possible made a visit to the house. In cases where I felt that a proper isolation could not be maintained at the time, the patient was removed to the contagious ward of the Waltham Hospital. Boards of health have the power through the courts to remove any case from home to a place of isolation. During the three years I was never obliged to resort to this measure, though I have often had to spend a great deal of time in patiently explaining to parents the necessity for the removal of their child, often coupling the explanation with the statement that no member of the family could go to work in factory, shop or store as long as the house was under quarantine. This statement I always found of great help in overcoming opposition.

Out of the 295 cases of diphtheria occurring during the last three years, 99 were sent to the hospital, and 43 out of the 95 cases of scarlet fever.

When the case was to be kept at home, careful instructions were given to the one to be in charge, usually the mother, in regard to the disinfection of everything, such as dishes, bedding, etc., before sending from the room. The attendant was also expected to be gowned from head to foot, and only allowed to leave the room after removal of the cap and gown and bathing the hands in an antiseptic solution (usually corrosive 1–3,000). In poor families the board often furnished corrosive tablets. Occasional visits have to be made to see that these instructions are properly carried out, and no case allowed to be dismissed from this careful quarantine until the physician of the board is satisfied as to the completeness of the recovery.

I have often had cards sent in by physicians announcing the recovery of cases of scarlet fever, and have gone to inspect the case only to find extensive desquamation which often persisted for several weeks after. When a case has fully recovered the health physician should see that the premises are properly disinfected.

During the greater part of the three years the Waltham Board made use of a modification of the German method introduced by Dr. Alfred Worcester, then chairman of the board. This consisted in wiping wall-paper with bread and thoroughly washing all wood-work, floors and furniture with strong soap and water, even cleaning out the cracks with specially shaped knives, followed by a thorough washing with carbolic acid (three or five per cent. solution). All bedding and clothing that could be was boiled, and that which could not be was sponged carefully over with the carbolic solution. Valueless material was, of course, destroyed by fire. Before leaving the sick room the patient and attendant had to take a corrosive bath, leaving their infected clothing in the room and putting on clean clothing in another room. The board has long felt the need of a steam disinfecting-plant for clothing and bedding, and one will probably be provided by the Waltham Hospital before another year. During the past few months the board has been using the method of disinfecting by freeing formaldehyde gas in the room.

That part of the work of the physician which requires the most time and care is with bacteriological investigation. Cultures are taken at any time of the day or evening at the request of any physician, and the result of the microscopical examination communicated by telephone as early the next morning as possible. The laboratory is provided for the board of health by the Waltham Hospital; and I owe a debt of gratitude to the nurses of that institution for their painstaking care of the tubes, incubators and laboratory in general.

Early in my first year the physicians of the city were notified that the physician of the board would also make free examinations of sputum for tubercle bacilli.

During the three years there were taken and examined 1,888 cultures, with 767 showing the presence of the Klebs-Löffler bacillus. There were also examined 722 specimens of sputum, with 552 showing the presence of the tubercle bacillus. The large number of sputum examinations is accounted for by the fact that during the first two years a phthisis ward was maintained at the Waltham Hospital, and a specimen was examined from each patient every week.

Another important duty consists in some supervision of schools and school-children. Dr. Durgin, of the Boston Board of Health, has shown in a practical way the great necessity and advantage of a careful system of school inspection for Boston. In small cities like Waltham with somewhat scattered schools and a small appropriation for health work such a system as Dr. Durgin's is too expensive. Here in Waltham, therefore, I have adopted the following expedient: By the co-operation of the School Committee teachers are instructed not to allow any child suffering with throat trouble to remain in school. The child must be sent home with a note to the parents to the effect that the child cannot return until seen by a physician and given a proper certificate. The parents are informed at the same time that a free examination of the child's throat will be made by the board of health physician. In this way I have been able to detect and isolate a number of cases of diphtheria. When a child returns to school after an absence and tells the teacher that sore throat was the cause, the child should also be sent home for a certificate. If several cases of diphtheria are reported at about the same time and all in children attending school in the same room, that room should be disinfected, and the remaining children examined and carefully watched.

During the three years it was necessary only once to close a school on account of an epidemic among the attending scholars. In this case an outlying "district" school was closed for a month and thoroughly disinfected. Thirteen cases came from this school, starting from a child with "sore throat" who was visiting a family having children attending at the school. The child returned to its home in Boston before I saw it, and eventually went into the City Hospital, South Department.

By thus carefully watching school-children, taking cultures from all suspicious throats, carefully quarantining suitable cases, and removing others to a hospital until *entirely recovered*, health officers may naturally hope to materially lessen the spread and mortality of the contagious diseases. That this has been accomplished to some extent in Waltham I think the following will show.

The population of Waltham is about 21,500. In 1894 there were 110 cases of diphtheria, with 20 deaths; in 1895, 171 cases with 2 deaths; in 1896, 74 cases with 5 deaths; and in 1897, 54 cases with 2 deaths. The lessened mortality, of course, is largely due to the introduction of antitoxin, which fact is well shown by the occurrence of nine consecutive cases of intubation at the Waltham Hospital without a death. In considering the number of cases during the past three years, it must be remembered that many of the cases found to be diphtheria would be called tonsillitis in the anti-culture days. In 1894 there were 93 cases of scarlet fever with 1 death; in 1895, 27 cases with 2 deaths; in 1896, 30 cases with 2 deaths; and in 1897, 38 cases with 2 deaths.

To show more fully the advantages of a careful isolation at the home, or removal to a hospital, I have prepared the following tables to cover the cases of diphtheria and scarlet fever in 1897:

Diphtheria Cases.

Isolated at home.

In families with 3 or more other children, 8 primary cases with infection of 2 others.

In families with 1 or 2 other children, 12 primary cases with infection of 2 others.

In families with no other children, 8 primary cases with no other infections.

Sent to the hospital.

From families with 3 or more other children, 15 primary cases with infection of 8 others.[1]

From families with 1 or 2 other children, 5 primary cases with no others infected.

Scarlet Fever Cases.

Isolated at home.

In families with 3 or more other children, 2 primary cases with infection of 1 other.

In families with 1 or 2 other children, 14 primary cases with infection of 2 others.

In families with no other children, 3 primary cases with no other infections.

Sent to the hospital.

From families with 3 or more other children, 5 primary cases with infection of 3 others.

From families with 1 or 2 other children, 8 primary cases with infection of 1 other.

It will be noticed that there were no cases sent to the hospital from families where there were no other children.

In looking over the tables it should be remembered that cases sent to the hospital are usually from poor families where a doctor is often called in late and the conditions present are most favorable for an early spread of the infection.

In all there were 42 families having a case of diphtheria, and with a total of 102 other children of which only 12 became infected; and there were 32 families having a case of scarlet fever, and with a total of 60 other children of which only 7 became infected.

With the cases enumerated above I have not included those occurring at the Massachusetts School for Feeble-minded, which institution is situated on the outskirts of the city. That the slight epidemics there have not reached greater proportions, when one considers the nature of the inmates, is undoubtedly due to the intelligent zeal and watchfulness of Dr. W. E. Fernald, the superintendent, and Dr. E. R. Cutler, the visiting physician. The disinfecting plant and isolation wards at this institution are well worth a visit from any one interested in health matters.

In cases of typhoid fever, besides endeavoring to trace their cause, the health-officer should make every effort to prevent the cases under observation from becoming sources of infection of milk or water supplies.

I have in this review indicated along what lines work may be best conducted, and have not gone very deeply into the finer details, which will readily suggest themselves to any one. The work here in Waltham which I have begun will be most carefully and skilfully elaborated by my successor, Dr. H. D. Chadwick.

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[1] In 6 of these 8 cases, 3 in each of 2 families, the infection had shown itself before the primary case was removed.

Clinical Department.

A UNIQUE CASE OF EDEMA OF THE SUPERIOR SURFACE OF THE SOFT PALATE.

BY TIMOTHY J. REARDON, M.D., BOSTON.

This case, presenting, as it does, many interesting features, induced me to study the literature pertaining to it. I was unsuccessful, however, in finding its analogue.

Dr. A., age twenty-eight, has had for the past two years considerable pharyngeal catarrh; he complains especially of dropping in his throat, and of occasional efforts at hawking with expectoration of muco-purulent crusts.

June 20, 1897, just before retiring for the night, he tasted a sample milk powder; this caused but little discomfort. About 2 o'clock A. M. he was awakened by the sensation of a foreign body in his throat; his throat had a parched feeling also. He went to the mirror, and was surprised at seeing a white tumor dependent from his soft palate, and almost completely filling the isthmus faucium.

He consulted me at my office about 9 A. M., and an examination of the fauces showed a mass the size of a pigeon's egg dependent from the soft palate; its longest diameter, which was the horizontal, measured one inch; its vertical diameter, three quarters of an inch; and it measured the same antero-posteriorly. It was pale, glistening and inseparable from the soft palate. Crepitus was absent. The uvula was edematous and the inferior surface of the soft palate was pale. The junction of this surface with the mass was sharply defined and was horizontal instead of convex. No evidence of inflammation was present. Posterior rhinoscopy was rendered impossible by the mass. The patient complained of almost constant deglutatory efforts.

I advised incision of the presenting surface; this was done. A clear serum oozed forth and the mass rapidly diminished in size. Examination of nose and larynx was negative. Urinary analysis was also negative.

At 2 P. M. of the same day the patient returned to my office; the edematous mass had disappeared and it was then possible to explore the vault and posterior nares. The vault was covered with a muco-purulent secretion. On removing this, the recessus medius was seen to be the discharging point and this was treated with a ten-per-cent solution of argentic nitrate; rapid improvement followed.

Etiology. — The presence of suppuration in the recessus medius suggests the possibility of a crust becoming adherent to the superior surface of the soft palate, and of the edema having been caused by attempts to dislodge the crust. The milk-powder episode I regard as a coincidence.

Differential Diagnosis. — The case is interesting, especially in regard to the possibility of the mass having been due to nasal polypi, which sometimes protrude into the naso-pharynx, but are rarely visible much below the arch of palate. They are also more rounded. Edema of other parts of the palate is, as a rule, inflammatory in origin. A notable exception is the angio-neurotic form, which may appear at any point in the body. Cuntz states that in reference to the palate, it is more frequent at the junction of the hard and soft palate. Polypi dependent from the soft palate are rare, and most frequently have their origin at the junction of the soft palate and uvula. A similar condition in appearance might be induced by an emphysema; such, for example, as follows catherization of the Eustachian tube. A case is reported by Sidlo which was apparently spontaneous in origin, no cause being ascribed; it occupied one-half the palate, and upon being ruptured by the patient immediately refilled with air.

BIBLIOGRAPHY.

Sidlo. Wiener med. Presse, 1877, xviii.
Wagner. Krankheitendes weichen Gaumens, v. Ziemssen, Encyc.
Parmentier. Bull. Med. du Nord, Lille, 1868, pp. 350-355.
Cuntz. Archiv. d. Heil., 1874, xii, p. 63.
Paget. St. Bartholomew's Hospital Reports, 1886-87.
Schmitt. Krankheiten des Oberen Luftweges, 1895.

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Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

SARCOMATOSIS CUTIS.

Tandler[1] describes in detail an interesting case of multiple pigmented sarcoma of the skin that was shown by Pick at the meeting of the Association of German Physicians in Prague in March, 1897. The subject was a girl of twelve who entered the clinic in October, 1896, on account of an affection of the fingers that had begun about a year previously. There appeared on the dorsal surfaces of both hands small white, exceedingly pruritic wheals, which disappeared after a day or two leaving brown spots, which were in their turn intensely pruritic, and which gradually increased in size and became confluent. Six months later these brown spots became infiltrated, until their site was occupied by nodules of the present size. Some of these nodules disappeared from time to time. Nodules also appeared on the elbows. When examined most of the fingers were found to be greatly thickened, especially about the joints, and this thickening to be due to the presence of numerous deep-seated nodules, partly discrete, partly confluent, so as to form large masses of infiltration. Several nodules were present on the elbows, one of which was ulcerated, and the knees also were somewhat affected. There was no enlargement of the lymph glands, and examination of the blood revealed no important changes. There was a diminution in the sense of touch on some of the tumors of the fingers, which was regarded, however, as probably due to the tension of the skin. Nodules excised from the left elbow for histological examination showed the picture of a connective-tissue tumor very rich in cells, with spindle cells predominating — in other words, a spindle-celled sarcoma, of constant structure in all the sections examined, with no degenerative changes in the centre nor pigment formation, as was to be expected from the macroscopic appearances of the tumor. In nodules excised from the right elbow, which were in a state of superficial ulceration, the same appearances were found as in those from the left elbow, with the exception that numerous vessels with proliferating intima were found in the centre, about which there was a profuse collection of cells. There was a very great profusion of *mastzellen* not only in the connective tissue about the tumor but in the tumor itself. A tumor excised from the finger of the right hand revealed in the sections the presence of two nodules situated close to one another, lying in the reticulated portion of the corium extending downward to the subcutaneous connective tissue, but not reaching so far upward as the papillary layer. This tumor varied from those taken from the elbows in that it was divided into several small portions by connective-tissue bands, poor in cells, with remains of elastic fibres and an occasional blood-vessel. The spaces between these partitions were filled with closely aggregated spindle cells, together with some round cells.

The result of the histological examination proved that the tumors belonged to the sarcomata. With regard to the division of the sarcomata in which this case is to be placed, Tandler points out that it differs in some important respects from the multiple idiopathic pigmented sarcoma of Kaposi. In this case the nodules were not colored, were not painful on pressure, and on their disappearance left no pigmentation or scarring. It was like the multiple pigmented sarcoma, however, in the appearance of the tumors first on the hands, in their progression over the forearms, forming larger infiltrations, and in the absence of glandular enlargements.

Under intramuscular injections of Fowler's solution, one part to three of water, which were given every second or third day in gradually increasing doses, the tumors grew perceptibly smaller in the course of two and a half months. The injections were then omitted and Fowler's solution given internally. When the patient left the hospital the tumors on the fingers had almost entirely disappeared, leaving only a reddish-blue color of the skin over their sites and some looseness of the integument. The tumors on the forearms and elbows had disappeared entirely. The patient's general condition was good.

ALEPPO BOIL.

Nicolle and Noury-Bey[2] of Constantinople have studied nine cases of this peculiar affection. The disease is of great frequency and the statement has been made that none of the natives escape it, while Europeans are less often affected. It is communicable from man to man, and natives of Aleppo have often carried the disease into parts of Asia Minor where it was previously unknown. It occurs at all seasons of the year and does not affect animals. Its ordinary seat is the face and the uncovered parts of the body. It has an incubation, when inoculated, of from one week to two months, and begins in the form of a papule of the size of a large acne nodule which gradually increases up to that of a twenty-centime piece. It is not reddened nor painful, and becomes covered with a crust, beneath which is an ulcerated surface, at about the third or fifth month. It begins to cicatrize at the end of three or four months, leaving a permanent, depressed, characteristic scar. There are never any complications, but it is annoying from its long duration and disfiguring scars. It is generally single, although sometimes there are from ten to twelve. Treatment has proved of no avail, except that of respecting the crusts and making soothing applications.

All the writers who have studied this affection have constantly found micrococci in the lesions, in some cases staphylococci, in others streptococci. Nicolle and Noury-Bey have found a streptococcus in two cases observed at Constantinople and afterward in seven cases studied in Aleppo. Of these nine cases seven had reached the suppurating stage, two had not progressed so far. In the fluid (pus or blood) the microscope always revealed the presence of streptococci, sometimes in chains, sometimes as diplococci, often in both of these forms. Sometimes other micrococci and bacilli were also present. In these cases the cultures made from the pus or blood contained the streptococcus in pure culture. This streptococcus presents nothing singular in its morphological character. When inoculated on animals it shows little virulence. Monkeys of different kinds were inoculated with the pus and blood and with the cultures, but without any result. Veillon not long since described a streptococcus which he had isolated in a case of Aleppo boil, and which he was inclined to regard as the pathogenic agent of the affection. Nicolle and Noury-Bey consider that their streptococcus is quite different from that described by Veillon. Their streptococcus gives a yellow color to the cultures, and is without virulence for animals, including monkeys. It is developed in less than twenty-four hours upon different media, of whatever kind, and was present in all the cases examined. Experiments made upon animals with a view to rendering them immune by means of Marmorek's serum proved negative.

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[1] Archiv. f. derm. u. Syph., Bd. xli, Heft ii.

[2] Annales de l'Institut Pasteur, October, 1897.

A CASE OF DEATH FROM HERPES ZOSTER.[3]

A child of four was brought into the Liverpool Stanley Hospital, who was suffering from a well-marked case of herpes zoster limited to the skin supplied by the twelfth dorsal nerve on the left side. The eruption had been out for about a week and had begun near the middle of the back and gradually spread around to the front. The three stages of papules, vesicles and pustules, could all be well seen, and there was a considerable inflammation at the base of the lesions, spreading somewhat into the neighboring areas. There was complaint of pain at the site of the lesions, which had antedated the eruption. A week later the herpetic appearances had entirely disappeared, whereas their site was occupied by larger and smaller patches of gangrene, the skin between the patches being in a high state of inflammation. The odor was very foul. When next seen two days later, the gangrenous patches had almost all coalesced, and the child was in a desperate condition, evidently due to septic absorption. Four days later, death occurred, the temperature having varied between 99° and 101°, diarrhea also making its appearance. Every attempt was made to remove the sloughs mechanically and by hot boracic-acid applications. It was regarded as probable that a fatal termination would not have occurred had the child been left in the hospital. Death is very rare in herpes zoster, although sloughing, more or less extensive, is not uncommon.

EDEMA IN INFANCY AND CHILDHOOD.[4]

After enumerating the various infectious diseases, as scarlatina, measles, erysipelas, diphtheria, etc., that may be accountable for the renal irritation that produces edema in infants and young children, as well as touching upon the fact that eczema and other cutaneous diseases are often the cause, Griffith and Newcomet, assert that it is not yet definitely conceded that congenital syphilis may produce nephritis and a consequent edema. It seems, however, that this must occur in rare instances. The writers then enumerate two cases that they have observed personally. In the first case, that of an infant of two months, it was not possible to decide whether the nephritis and the edema that succeeded it were due to syphilis or to scarlatina. In the second case there was greater probability that the nephritis was caused by the syphilitic poison. There may often be edema in children, of a more or less general character where there is no distinct evidence of nephritis as after erysipelas and scarlet fever. As other causes of edema may be mentioned pressure upon venous trunks by enlarged bronchial glands, and any state of extreme exhaustion, debility and anemia.

Edema neonatorum is regarded rather as a symptom of several conditions than a pathological entity, and it is a disputed question whether or not it is identical with sclerema neonatorum. It begins usually before the third day of life in weak or premature infants, and is characterized by low temperature, coldness of the surface, and an extensive edema that pits with difficulty on pressure. Pulse and respiration are weak and slow, and the affection usually ends in death. In sclerema neonatorum the skin is hard and will not pit, is often discolored, and when cut into does not exude serum. After relating a case of edema neonatorum that had come under their own observation, the writers state that they have been able to find but five well-authenticated cases of the disease in America, of which they give abstracts.

With regard to so-called angioneurotic edema, its occurrence in early life is rare. The writers regard it as closely allied to urticaria, and identical with giant urticaria. They also rightly consider that it is related to some of the forms of peliosis rheumatica and to Henoch's purpura. It is, as is well known, often accompanied by gastro-intestinal disturbances, by urticaria and purpura.

Finally, there are cases of edema in infancy of entirely obscure origin. In this class is to be placed the remarkable instance reported by Milroy where out of 97 individuals in six generations, 22 had been affected with a permanent edema involving one or both legs. It was congenital in all but one case. The writers relate the case of a boy of four years, whose left leg and face began to swell at the age of three months, and this condition had continued since with some variations in degree. The intelligence was normal and the child well developed. The edema of the leg did not pit on pressure, but was very firm. Compression of the leg by means of medicated plasters caused a considerable diminution in the edema.

INTERNATIONAL LEPROSY CONGRESS.

At the first meeting of this congress, held in Berlin in October, 1897, Neisser, while admitting that absolute proof that the leprosy bacillus is the cause of the disease, has not yet been attained — since all attempts at obtaining pure cultures of these bacilli, and producing the disease in animals by inoculation of these cultures, have failed — considers that the following facts justify us in assuming a causal relationship, with great certainty.

(1) The absolute constancy of the presence of the bacillus in all cases of leprosy that are clinically indis-

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[3] Lancet, October 30, 1897.

[4] Griffith and Newcomet, Medical News, October, 1897.

putable. This is independent of the manner of living, nourishment, climate, race, age or sex of the individual, or of the form of disease in the special case.

(2) Every clinical symptom of the disease is to be explained by the assumption of a bacterial pathological anatomical process.

(3) The minute histological appearances in the cells are dependent on the presence and peculiarities of the bacilli.

(4) The bacilli differ from all other bacilli found in all other diseases, not only in their reaction to staining agents, but also in their failure to grow on artificial culture media, and in the innocuousness for animals.

(6) These constant and characteristic bacilli are present in a disease which can only be explained on the supposition of an infectious material existing in lepers. The contagiousness, which is now fully proved, finds a further support in the numbers of bacilli which leave the body and afford opportunity for spreading the disease to other persons.

Neisser believes that the difference between the two clinical types, tubercular and anesthetic leprosy, is best explained by the quantitative difference in the bacilli. There is no proof of a varying virulence in the bacilli nor of a varying degree of immunity or predisposition in the individual. It is conceivable, however, that external and chance conditions may effect the capacity of the bacilli for multiplying after their entrance into the individual and also may influence the localization. The difference in quantity of the bacilli in the different cutaneous forms of the disease is remarkable, and it is possible that the different situations of the bacilli may be a factor. In the macular forms, which mostly arise from erythematous eruptions, we have to do with bacilli that lie within the capillaries, which appear to be short lived, but capable of exercising an energetic chemotactic action by virtue of their toxins causing hyperemia and perivascular infiltrations, the cells of which do not undergo a typical leprous degeneration, but exhibit a tendency to the new formation of tissue. The tubercular forms, on the other hand, are caused by the bacilli situated and multiplying in the lymph channels in the first instance. Very soon, however, they are found in greatest numbers in the infiltration cells. Here are found the typical "leprazellen" with vacuoles and fatty degeneration, and the so-called "globi." The macular forms were regarded as tropho-vasomotor disturbances until the presence of bacilli, in very small numbers, was detected in the infiltrations. Neisser considers Gram's method with a counter-stain of saffranin or Bismarck brown the best for detecting these sparse bacilli. Further it has been shown that anesthetic but otherwise apparently sound skin may contain bacilli. Examination of a bit of excised skin may therefore establish the diagnosis, or it may be necessary to examine a bit of the nerve, in case of a negative result. The bacilli may often be found in tubercular cases in the fluid from artificial suppuration and vesiculation, but in the anesthetic forms the number of bacilli appears to be too small to render this test of much value.

It has also been shown latterly that completely normal-looking skin with no anesthesia may contain bacilli. Neisser's observations were made chiefly in tubercular leprosy. The same is true of the nerves, as bacilli in considerable numbers have been found in the nerves with pronounced changes in cases where there were no external appearances, and comparatively trivial clinical symptoms. It is regarded as probable that the symptoms in anesthetic leprosy are determined by the local degeneration of the nerves of the affected part, and that the possibility that there is in many cases a descending degeneration cannot be excluded. The mutilations he regards as most probably due to traumatic causes acting on the anesthetic extremities, and not to trophic disturbances, although the latter cannot be excluded. Despite the discovery of bacilli in the blood, Neisser does not believe that they usually circulate there, but that the lymphatic system is their usual locality and place of multiplication.

Glück, in an essay on leprosy of the upper respiratory and digestive organs, states that the work of previous writers, as well as his own, has shown that it is an error to assume that the mucous membranes of the upper respiratory and digestive tracts are not affected in anesthetic as well as in tubercular leprosy. He has tabulated together his own cases and those of three other careful observers, Eichmüller, Leloir and Paulson, with a total of 264 belonging to the tubercular, anesthetic and mixed varieties. It was found that the nose was most frequently affected (in 68 per cent. of the cases of tubercular leprosy, 44 per cent. of mixed leprosy, and 18 per cent. of anesthetic leprosy), next in order the larynx, palate and pharynx, lips and tongue. It has become an interesting question at what period of the disease the mucous membranes of these regions become affected. Many writers, including Kaposi and Impey, consider that they are not invaded until after an average duration of the affection of several years on the cutaneous surface. Neisser believes that cutaneous and mucous membrane lesions appear at about the same time. Leloir, on the other hand, places the dryness and bleeding of the nose among the prodromal manifestations, and says that the mucous membranes in question may be invaded at the beginning of the tubercular outbreak; and in any case, when the tubercular eruption of the skin has lasted some time they end by being affected. Glück is of the opinion, that the time of appearance of the mucous membrane changes is very variable, sometimes appearing simultaneously with the cutaneous lesions, and sometimes not until later. He regards it as certain that these mucous membranes are not, as a rule, affected before the appearance of characteristic symptoms on the skin, but that one or another part of them is usually affected at the same time as the outbreak of the first permanent changes of the skin, a period that is attended by more or less marked febrile signs.

The 33 cases that were carefully analyzed by Glück showed that the nose was affected in 89 per cent., and proved that it was affected not only in tubercular but in anesthetic leprosy, contrary to some previous views. It was also found that the changes were so far advanced in the first years of the disease, that it must be regarded as certain that they appeared at the beginning of the disease. His investigations further showed that all the bones of the nose may be affected. He found that in his cases of tubercular and mixed leprosy the mouth and pharynx were affected in 73 per cent. In eight cases of pure anesthetic type no changes were recorded. It appears that the mouth, especially the lips, is usually affected very early in the disease, as he found the lips thickened, with nodules, erosions and scars on their mucous membrane in very recent cases. The gums were, on the whole, seldom affected, and then usually at a later stage, when they appeared reddened, swollen and covered with erosions. The mucous membrane of the cheeks was still less often affected. Most commonly affected were the hard and soft palate and the uvula. In the later stages of the disease here the appearances resemble very closely those of syphilis.

The most common and characteristic feature of leprosy of the tongue is the appearance of nodules, isolated or in groups, situated usually in the centre of the upper surface. They show little tendency to ulceration and remain for years unchanged. Twenty-one out of twenty-two cases that were examined with the laryngoscope showed changes in the epiglottis, which was usually thickened, stiff and immovable. On the vocal chords at the beginning of the process, a slight roughness is noticed which is followed by swelling and thickening, and later by ulceration. There is a great tendency to cicatrization so that the true and false vocal cords are often entirely destroyed.

Sticker examined 400 cases of leprosy in India and in Egypt, and has come to the conclusion that the primary lesion is on the mucous membrane of the nose, usually in the form of an ulcer on the cartilaginous portion of the septum. This is present in the latent period of the disease, often for years before the appearances on the skin or in the nervous system. In 153 cases the secretion from the nose was found to contain bacilli 128 times. The primary lesion of leprosy lasts during the entire course of the disease, and it is from this source that the bacilli are regularly and in large quantities given off. The other secretions, with the exception of purulent sputum, do not contain nearly so many bacilli. The writer believes that leprosy is carried from the sick to the well by the direct transference of the poison from nose to nose, less often indirectly by means of handkerchiefs, soiled hands, etc., and that the disease is transmitted to the system generally from the primary lesion by means of the lymphatics, in some instances by the blood-vessels, after the manner of miliary tuberculosis.

Hansen, the discoverer of the bacillus of leprosy, discussing the question of the transmission of the disease from person to person, refers to the repeated attempts made by Danielssen to inoculate himself. At various times, the blood and pleural exudation, as well as bits of tissues from nodules of tubercular leprosy, were inoculated upon himself and several other persons, but always with a negative result. As these inoculations were performed before the days of antisepsis it is rather remarkable that no severe septic symptoms followed. It is possible that the leprosy bacilli proved hostile to the other micro-organisms introduced, or that the suppuration was sufficient to kill the leprosy bacilli. It is also possible that in some instances the inoculations were not carried beneath the epidermis, in which tissue the bacilli do not thrive. Hansen himself had attempted to produce the tubercular form in two cases of anesthetic leprosy by inoculating nodules from the former upon the skin of the arm, and upon the conjunctiva, but with a negative result. These experiments having failed, it is necessary to seek for other arguments in favor of the infectiousness of the disease: and in Norway the mode of life of the people affords a favorable opportunity for contagion, it being the custom quite universally for two people to share the same bed, and for workmen to live together in close contact. Hansen is strongly inclined to the belief that direct inoculation is the usual mode of transmission. The bacillus is so slow in reproducing itself at the outset, that the site of invasion has never been detected with certainty as yet. He relates the case of a man, the servant of a leper, who, while wearing a pair of trousers given him by his master, received a cut in the thigh. He developed symptoms of leprosy a year later, but it was impossible to detect any peculiarities about the wound. Hansen regards the indirect mode of transmission by soiled clothing and other articles as also operative.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting, Wednesday, December 1, 1897, Dr. H. L. Burrell in the chair.

UTERINE CUTTING FORCEPS.[1]

Dr. Burrage: I have here a uterine cutting forceps, made for me by Codman & Shurtleff that is designed to remove pedunculated fibroids situated at the fundus and, in the morcellation of fibroids, to smooth off the rough surface left behind. You have all doubtless had the same experience in using the vulcella that the teeth tear through very often leaving pieces of tissue behind. There seems to be a place for some instrument that would seize hold of the tissue and bite it off. This cutting forceps will cut pretty well most any sort of tissue. It goes through fibroid tissue very readily and it will even cut tissue as hard as bone. It has a cutting surface at the end of half an inch. The blades are quite strong, some ten inches long, and there is a French lock two inches from the end. The blades are protected so as not to catch the guiding finger, because this work has to be done largely by touch. With the vulcella there is some danger, as you know, of tearing the finger. The forceps is intended for cutting off tissues at the fundus which cannot be reached very well by scissors and by the ordinary forceps. I have found it to work very well and it has considerable power.

FLUID FROM AN ABDOMINAL TUMOR.

Dr. M. H. Richardson: This fluid, which should be milky white, but is slightly tinged with blood, was taken from an abdominal tumor in a woman of forty-five, who had had this tumor four years. No loss in weight. No symptoms except a feeling of distress across the epigastrium and a feeling like that of a bone impacted in the rectum. This case was seen by Dr. Homans some years ago; she was admitted to the hospital, and Dr. Homans advised against operation. My diagnosis was multiple fibroid. It was a patient of Dr. Odlin, of Melrose, who operated day before yesterday. I was present in consultation and assisted at the operation. It is one of a very considerable series of cases in which I have made a wrong diagnosis. The last fibroid before that I operated on was an extra-uterine pregnancy. That was a cyst of the mesentery containing chyle and in something like 1,000 abdominal sections it is the first case of the kind I have seen. The operation was the day before yesterday, and the patient is in good condition to-day. The emergency, if it may be called an emergency, had never arisen before. What to do we did not know, but we chose the resource that we have in all doubtful cases, of draining with a gauze strand and leaving the patient to recover with a sinus. The reason we did not close immediately was that being chyle, as microscopical examination shows, it would seem that if we should close the abdomen there would be a constant secretion of chyle in the small intestinal coil in which this cyst was situated; therefore it did not seem wise to close the abdomen although this fluid was sterile. A small drain was put into the mesentery and the rest of the incision closed. The patient to-day has a normal temperature, the abdomen is soft and she is in very good condition.

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[1] See page 207, No. 9, of the Journal.

Dr. M. H. Richardson read a paper entitled

THE INDICATIONS FOR NEPHRECTOMY.

Dr. Scudder: I have had a little experience with nephrectomy. I have done three nephrectomies. The first two were for tuberculosis; one in the case of a woman who was very much emaciated and evidently suffering from some constitutional disturbance with a very high temperature. A nephrectomy immediately reduced her temperature to normal and she made a good recovery. During the few months following the operation she increased in weight and improved in general health. She has returned to the hospital within the last two months with a sinus in the loin which has been explored and curetted.

The other tubercular case was that of a man who had an extensive disease of the deep abdominal wall secondary to the tuberculosis of the kidney and in that case two-thirds of the kidney was removed. He improved after the operation. The third case was a cystic adenoma of the kidney which was interesting because of its anatomical position. The tumor was situated at the lower end of the kidney and its position suggested a procedure which perhaps Dr. Richardson has mentioned in his paper, but did not speak of in what he read, namely, the removal of the tumor from the kidney instead of complete nephrectomy. In this case excision would have been possible had it been known that the tumor was not very malignant and did not involve the whole kidney. The case was that of a woman, about twenty-five years old, who was pregnant three months, and the tumor was growing rapidly. The woman recovered from the nephrectomy and was delivered at term normally and has since had a second child with no difficulty. This latter case is reported in full in the *American Journal of the Medical Sciences*, December, 1895. It is detrimental to the patient I believe if any part of a tubercular kidney is left, — all should be removed. Removal of kidney tumors without removal of the whole kidney is possibly good surgery in selected cases.

Dr. Ogden: Dr. Richardson's results are especially interesting in connection with the cases which developed an acute glomerulo-nephritis. It is a very common occurrence to find more or less renal disturbance on the well side in these cases, the urine having the characteristics of what we ordinarily term an active hyperemia, which may be either mild or severe. It is probable that the renal disturbance seen in this class of cases is the result of the elimination of the toxic material which has been absorbed from the diseased kidney, and that the irritant affects chiefly the glomerulus; but, from the urine alone we are, as yet, unable to determine the presence of a disease of the glomerulus.

I should not be in favor of operating on a diseased kidney if the other one was severely irritated, unless the operation was necessary because of the patient's condition, but should advise waiting a reasonable length of time for the irritation to subside. I have seen instances in which the irritation did not subside and the operation was performed without untoward effects.

Dr. E. W. Cushing: I have had a few cases of nephrectomy which perhaps illustrate a little the different class of cases which arise in different services, namely, that cases often occur where cysts of the kidney become so large that they are supposed to be ovarian tumors, until a more accurate diagnosis is made. I have had seven cases of removal of the kidney. Of those two were tubercular, the kidney being in one case as large as the two fists and in the other nearly twice as large, filled with a cheesy, gummy mass. One of those women died, and the lungs were found to be riddled with very small tubercular abscesses. The other recovered and did very well. A very large congenital cyst of the kidney I showed in this Society some time ago, where the woman died about a fortnight afterwards with urinary symptoms, the second kidney being cystic. The others recovered. There were cysts varying from the size of an infant's head, in a young woman in New Hampshire, where the ureter had apparently become obliterated about three or four inches from the kidney. In the others it was not so easy to say before operation what they were. They were cysts as large as nine inches in diameter, where it was difficult to say in the beginning from where the tumor arose. They were apparently not malignant. There was no especial difficulty in operation. They recovered. I am a good deal enlightened by the paper which we have heard, in regard to the question of the necessity of removal of the entire kidney for stone. I had supposed that where the diagnosis of stone could be made and the kidney be opened from the loin or flank and the stone extracted, that it was considered preferable to do so. I think myself I should much prefer to remove the kidney through the abdomen than to do an operation that is described as comparatively easy — the removal through the loin. I should like to ask Dr. Richardson to explain more fully how he would proceed in case of stone in the kidney.

Dr. Burrell: I am very glad to find that I am entirely in accord with Dr. Richardson in the view which he has taken in these cases, and I have arrived at these views from a comparatively limited experience. It seems to me where I have operated for pyonephrosis and hydronephrosis that the leaving of a permanent sinus leading from a hopelessly damaged kidney was an unsurgical measure. I am glad that Dr. Richardson has taken the ground that he has, for I believe it is not at present generally accepted surgical judgment in these cases. As I understand it, Dr. Richardson believes that a nephrotomy is indicated where there is pus in the kidney, and if this does not heal up a nephrectomy is called for. It seems to me that he has taken logical ground in saying that a hopelessly damaged kidney should be removed.

Dr. Richardson: In the time limit one has he does not read his paper, and many things which seem to him important are omitted — the time limit of course is proper; and it requires a lengthening of the discussion to explain certain things that arise. I don't think Dr. Burrell has understood fully my views in reference to pyonephrosis. I believe with Fenger that every effort should be made to save the kidney, save the secreting substance which remains even in extensive nontubercular inflammatory disease, in the pyonephrosis of calculus origin, for instance; but the operation of Fenger requires a long time, a year or more, and several operations. The first requisite is to drain that cavity in the kidney. In one of the cases reported, that of Kate Graham, I opened one of those dilated cysts of the kidney, but it did no good whatever. It would do no good unless the kidney was one large sac, then it would do this good: it would drain the kidney so as to permit the renewal of the ureteral stream and allow inflammation to subside. Fenger makes an incision through the whole posterior surface of the kidney, cuts through every partition between the different cysts, makes one large sac of a number of small sacs and lets the kidney drain through the loin one, two, three, five or six months and after that he does a second operation which is to restore the ureter. Finally, after a year or more the sinus heals, and the patient has saved the secreting surface of that kidney. It seems to me a most desirable and conservative procedure. Now, when we get in the very beginning a sacculated kidney like this I have shown, in women mostly, with a chronic and extensive and sapping septicemia, the question is whether they can stand this, whether it is wise to subject the patient to the long-continued drain of chronic septicemia. In the tubercular, cancerous or sarcomatous kidney it seems to me there is no difference of opinion. What I wanted to hear was the views of surgeons upon the desirability of immediate nephrectomy, as compared with Fenger's operation. If I have a patient strong, in good condition, and I find by section of the kidney cysts which could easily be removed and could unite all the saccules of the kidney into one, and there was a good chance of restoration of the ureter, I should try that; but the fact is, in several of the cases palliation has been dallying and shillyshallying, and the patients in the end have died after nephrectomy, which if performed in the beginning would probably have been successful. I think it is a subject of very great importance, and I am extremely interested in it. I wish we could have more light thrown upon it.

Dr. Ogden: I have been very much interested in the work which Dr. Reynolds has undertaken. He has emphasized none too strongly the importance of catheterizing the ureters and the examination of the urine, in order to ascertain whether a pathological condition exists and to learn, especially from the urea, the comparative work of the two kidneys. The urine of the well kidney is often rather misleading if it is not borne in mind that the percentage of urea may be low even though the kidney is doing a normal amount of work. As Dr. Reynolds has said, this is probably due to a reflex activity of the kidney resulting from the manipulation in the bladder and ureter; in other words, the kidney acts faster than under normal circumstances, secreting more water, and, therefore, a lower percentage of urea.

The case of Mrs. G., to which both Dr. Richardson and Dr. Reynolds referred, is instructive, since it proved to be a calculous pyelitis, and yet crystalline elements could not be found in the sediment. This is a very common occurrence, and should be borne in mind when a renal stone is suspected. Dr. Reynolds is to be congratulated on what he has done, and I hope that he will continue, for certainly it is a field for knowledge.

Dr. Richardson: I think it is already demonstrated, certainly to my complete satisfaction, that this method of investigation is essential and that there is no way of telling the condition of the kidneys, the comparative value of their excretory work, except by this method. I shall not feel satisfied hereafter unless in every instance where it is possible this method of investigation is adopted.

Dr. W. L. Burrage: I find myself very much in accord with the views of Dr. Reynolds as enunciated here. There is one important point that I think he laid stress on in deciding as to nephrectomy, and that was the matter of determining whether the diseased kidney still has some secreting power. If one kidney has become entirely useless through disease, the shock attending its removal is very much less than in the cases where the secreting is shared by both kidneys. As regards irrigating diseased kidneys in cases of pyelitis, I remember a case I had some three years ago, where I felt at the time that irrigation was not of very much benefit to the patient. It was done by the method of putting the patient in the knee-chest position and pouring in the water through a funnel held above the patient's back and attached to the long kidney catheter. Raising her chest up and lowering the funnel the water ran out. I irrigated on several occasions. She had a large dilated pelvis on the side I irrigated, and the other kidney did not seem to be in good enough condition at that time, judging from the amount of urea secreted, to warrant operation. She has been in very fair condition since, and has only occasional attacks of paroxysmal pains in the side in contrast with almost constant pain before. One point in regard to the technique I think is of considerable importance, and that is the danger of introducing infection from the diseased side into the sound side. Of course it is necessary to use two ureteral catheters and to be especially cautious in washing out the bladder so as not to carry infection up into the well side. I think that is a real danger, and we should remember that it is possible to introduce infection into the pelvis of a sound kidney. Of course there must always be more or less traumatism in introducing an instrument into such a small tube so inaccessibly situated.

I think Dr. Reynolds is to be congratulated on his successful series of cases.

Dr. Garceau: There was a case reported by Albarran in which the ureteral catheter was left in twenty-three days. I thought Dr. Reynolds would be interested to know that. It does not appear plain to me in the case Dr. Reynolds reported with crossed symptoms, that the diagnosis of stone on the right side could be absolutely eliminated.

Dr. Reynolds: With regard to what Dr. Burrage said about infecting the sound kidney, I think that is a very important point. I do not believe we can do much by washing out the bladder, for I do not believe we can disinfect the bladder thoroughly enough to make that an important matter. I believe it is important to introduce the catheter only an inch or two into the ureter. I believe the little silver catheters are much safer for that purpose than the long webbing ones. Of course any catheter should be boiled and touch nothing until it gets into the bladder.

With regard to the benefit of washing out the renal pelvis I said in the paper that there were cases in which I thought it was useful as a palliative method. I have reported the one really considerable success I have had with it. I do not believe that, as a rule, it amounts to much.

With regard to Dr. Garceau's suggestion that there might very well be a stone in the pelvis of the other kidney in the first case I reported, I do not think that we can positively exclude it. There was no pus macroscopically; there was microscopically a certain amount of pus. There may have been a stone there, but the fact that the symptoms were relieved by diuretics makes me less inclined to believe it.

In closing, I want to emphasize especially a point which it seems to me has not received as much attention as it ought to in the past — the fact that the ureter is not, as I was taught in the school, an organ that is free from disease, but that a stricture of the ureter may cause excessively severe symptoms. With regard to the rapid cures by dilatation it certainly is very surprising. It is a wholly different matter from dilating strictures of the male urethra. I don't think it is a similar case. The anatomy is different. The ureter is a tube which nature intends to be very distensible, which we know distends very rapidly the moment there is an obstruction which may be overdistended. I don't know whether that has anything to do with the fact that distending it to two or three times its normal size seems to relieve symptoms suddenly. I shall never forget a case Dr. Prescott was kind enough to do the autopsy of, two or three years ago, a woman I saw in the suburbs, a victim of the old-fashioned belief that any man who does anything for a prolonged first stage of labor does meddlesome midwifery. When I saw her she was just dying; she died one-half hour later of exhaustion from pain. We had an autopsy and Dr. Prescott found no organ abnormal except the ureters. The walls were perfectly translucent and uninflamed, but they were distended to a simply enormous size from the brim of the pelvis up, the head having been in the pelvis and having evidently occluded the lower portions. They were normal ureters, and had not been pressed upon until within at most two days. They were dilated to the size of the base of one's thumb. As to the source of strictures of the ureter I am unable to offer any explanation.

Dr. Edgar Garceau read a paper entitled

CYSTITIS IN YOUNG GIRLS, WITH A REPORT OF THREE NEPHRECTOMIES.

Dr. Reynolds: There is only one thing that comes into my mind to say, and that is a little on one side of Dr. Garceau's paper, but is in support of the point that he makes that vesical symptoms may often be dependent on renal causes without any symptomatology to call attention to the kidney. The further I get into the urinary diseases of women the more prone I am to look above the bladder for the source of the trouble, and the more convinced I am, first, of the frequency of transitory inflammatory affections of the mucous membrane of the ureter and kidney, and secondly, of the fact that in all such processes the kidney and ureter are apt to be one and act together. Dr. Garceau brought up that point with regard to tuberculosis and I am strongly inclined to believe that tuberculosis at one point of the urinary tract usually means tuberculosis at other points of the urinary tract.

THE BOSTON

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REPORT UPON THE AFTER-CARE OF THE INSANE.

We are glad to notice the final report of the Committee of the Neurological Association upon the care of the convalescent insane. At the meeting in Washington, 1894, Drs. H. R. Stedman, C. L. Dana and F. X. Dercum were appointed a committee to investigate this important question. The appointment of such a committee was the outcome of a paper which was read and discussed at that meeting of the Neurological Association. The work was begun by issuing a circular letter to interested persons in Massachusetts, New York and Pennsylvania, and later enlarged to include the opinion of authorities in other parts of the country.

The definite purpose of the investigation, as stated in the circular letter, was to frame some feasible plan for the aid and supervision of discharged pauper insane patients immediately after their return from asylums to public life. This letter goes on to speak of the hesitation which asylum physicians often have of setting at liberty certain patients who are so far recovered as to be no longer suitable for hospital treatment, but who may, when thrown suddenly on their own resources, lapse into those conditions which originally gave rise to their insanity. The stigma, also, which unfortunately attaches to those who have at one time been inmates of an asylum, often prevents such persons, though fully recovered, from obtaining employment.

In consideration of these facts, Dr. Fabret, in France, in 1841 founded an association for the protection and assistance of this class. The movement since his time has grown materially, so that at present, such systems are in operation throughout France and also in England and Switzerland. The function of these after-care societies is to find for discharged patients suitable homes and places of employment, to provide such financial aid as they may require, and in general to have them under supervision for the first month or two after discharge.

The American committee, feeling that the same need exists in this country, is strongly of the opinion that similar means of relief after discharge should be provided, supplementary to the work carried on within our institutions. The committee concluded its letter by asking the following definite questions, to which replies were requested:

"1. What are your views as to the practical utility of such an undertaking, generally speaking?

"2. In your opinion, should such an association be entirely a private charity, or would the co-operation of the State in its work be practicable?

"3. Do you think it probable that benefit to a sufficient number of patients would result from the establishment of convalescent homes as departments of, but at a distance from, our State Hospitals for the insane? This inquiry is suggested by the proved usefulness of convalescent homes as adjuncts to general hospitals, and of summer cottages in connection with private institutions for the insane.

"4. (For superintendents of hospitals for the insane.) Will you kindly give a rough estimate of the probable number of patients who have been discharged during the past year from the hospital under your charge, whom you would consider deserving of, and likely to be benefited by, such a charity, mentioning any especial instances that may occur to you."

The reply to these questions was most satisfactory and threw much light on the general question. Most of the answers were from superintendents of hospitals for the insane, whose practical experience proved of great value. Of the entire number of correspondents but six were either doubtful of the proposed scheme or decidedly opposed to it. Their reasons were that the number of cases likely to be benefited by such aid is too small to make it advisable; that the project is inexpedient, and that while theoretically excellent it would be impossible in practice. The overwhelming majority, however, were in favor of some such plan and expressed their decided belief in the advantages to result from adequate aid societies for discharged insane patients, who are recovered, convalescent, or improved.

Regarding the number likely to be benefited the replies were not of much assistance, probably owing to the fact that attention of the superintendents had never been specifically directed to this point up to this time. It was the general opinion that such aid associations, if established, should be begun as private organizations and so continued until their utility be demonstrated; then no doubt State aid could be obtained.

In the question asked of the advisability of establishing State homes for convalescent patients there was considerable diversity of opinion. Here as in the other questions the most decided opposition came from members of Lunacy and Charity Boards.

From what has gone before, it will appear that there is an almost unanimous sentiment among those best capable of judging that certain systematic means of assistance for the discharged insane is altogether desirable. That such organizations have succeeded so admirably in Europe would seem to be a sufficient argument in their favor. Certainly no class in the community is more worthy of the care and temporary protection of the State than persons who may yet lead useful lives provided, only, means are given for the possibility of a fair start. There are already in operation in this country numerous societies whose function it is to provide employment for persons discharged from penal institutions. Why a like privilege should be denied those, who, often through no fault of their own, have been temporarily banished from society, it is hard to conceive. It is a distinct sign of progress that in many States we have institutions for the treatment, and more particularly for the employment of persons suffering from epilepsy. This movement, too, has been slow in coming, but that it will be permanent no reasonable person can doubt. With so favorable a report as the one before us, it must also be that that most worthy class, the partially or completely recovered insane, should have every possible means through private or State aid, of resuming a normal and useful life. We most sincerely hope that the recommendations of the committee may bring speedy and fruitful results.

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CHANGES IN THE SKIN AND VISCERA CAUSED BY THE X-RAYS.

In a paper[1] presented at the International Medical Congress in Moscow, Oudin, Barthélemy and Darier report 44 cases, collected from various sources, where changes in the skin and viscera have been noted after exposure to the Röntgen rays. In 400 observations of their own an abnormal reaction followed in only four, and in these it was very slight. The changes in the skin may be of an acute type, as redness, pain, swelling, vesiculation and even necrosis, followed by cicatrization, or they may be of a chronic type showing dermatitis, thickening, loss of elasticity and sensation and scaling. In the third place are falling of the hair and nails. The inflammatory changes are slight or serious, superficial or deep, according to their position and the constitution of the patient, and are very similar to other burns of electrical origin. They are late in making their appearance, appearing often several weeks after the last sitting. These changes are painful; in some cases there is lessened sensation, and hyperesthesia has been observed. They are very slow in healing, and this is perhaps their most prominent attribute. They are often characterized by deep pigmentation. The deeper and more serious lesions are apt to occur when the rays have been applied to portions of the skin that were not yet healed or that were otherwise affected, as in lupus, and different forms of dermatitis. Individual susceptibility appears to be an important factor, however. The Röntgen rays, on account of their destructive action on the hairs in many instances, were for a time regarded as of probable future value as a depilatory. Experience has shown unfortunately that the effect of the x-rays, in sufficient strength to produce falling of hair, often oversteps this mark and produces intense inflammation and necrosis, so that at present their use for this purpose must be very limited.

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[1] Monatshefte f. prakt. Derm., November 1, 1897.

In comparing the effects of burns from electrical lights and dynamos with those from the x-rays, the writers state that in electrical burns all the tissues, from the epidermis down to the bones, may be affected; they take the form of small, round, polygonal patches of grayish color, with irregular edges and a small white seam, and a darkish centre. These patches are sometimes very hard, sometimes soft, and are not painful. The crusts are not quickly cast off and require a long time for healing.

Experiments made upon guinea-pigs by exposing their skin to the Röntgen rays, and thus producing an alopecia gave the following results:

(1) The x-rays, or the electrical current sometimes, under conditions that are not well understood, produce an alopecia on the skin of guinea-pigs which may not show itself from one to two months.

(2) This alopecia makes its appearance suddenly and then increases in extent, without any necrosis or impairment of sensation.

(3) Histologically the hairs that fall out show no very marked atrophy of their bulbar part. The epidermis, however, is thickened in all its layers, there is a great increase in the kérato-hyalin, and an excessive atrophy of the follicles. The corium and the blood-vessels appeared to be little affected. These changes in the epidermis and the atrophy of the hair follicles are regarded as a reaction to an irritant of remarkable strength.

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MEDICAL NOTES.

Bequest to Jefferson Medical College. — The Jefferson Medical College, Philadelphia, has received, by the will of the late C. D. Shain, $7,000 for scholarships and prizes.

Popularity of Glass Eyes. — According to a German authority 2,000,000 glass eyes are made every year in Germany and Switzerland, while one French house manufactures 300,000 of them annually.

Biography of Ernest Hart. — The widow of the late Ernest Hart is collecting the correspondence of her husband, together with information bearing upon his public work, to be used in preparing a biography of this active and well-known man.

Dissecting in Paris. — According to the *Gazette des Hôpitaux* (Paris) there is a great scarcity of dissecting material in the medical schools of the French capital — less than half a body for each of the 1,573 students who have been dissecting there this winter.

The Congress of French Alienists and Neurologists. —The ninth Congress of French Alienists and Neurologists will be held this year at Angers on August 1st and following days. The questions proposed for discussion are: (1) Post-Operative Psychical Disturbances; (2) The Part played by Arteritis in the Pathology of the Nervous System; (3) Transient Delirium from the Medico-Legal Point of View.

Practice of Medicine in Hawaii. — A license is now required in order to practise medicine or surgery in the Hawaiian Islands, such license to be granted only upon the written recommendation of the board of health.

Mr. Gladstone's Health is reported to have improved greatly since his return from Cannes. As this improvement has come since the invalid went to Bournemouth, on the south coast of England, it is regarded by many as a strong argument in favor of home resorts.

Stock Growers on Vivisection. — A recent convention of the National Stock Growers Association held in Denver, Col., unanimously adopted resolutions calling upon the Congressmen of the States there represented to cast their vote against any measure that will prevent scientific research to be continued in the interests of the animal kingdom.

The Louisiana State Board of Health. — It is stated in the March number of the *New Orleans Medical and Surgical Journal* that Dr. Edmond Souchon has been elected president; Dr. H. F. Reynaud, vice-president; Mr. Frank Zocharie, attorney; Dr. John Callan, chief sanitary inspector; and Dr. S. J. Théard, assistant sanitary inspector.

A Commission on Tuberculosis. — On the motion of M. Brouardel, the Paris Academy of Sciences has appointed a commission to study the question of the propagation of tuberculosis. The commission is to consist of the six members of the section of medicine and surgery, the two permanent secretaries and MM. Brouardel, de Freycinet, de Jonquières, Chauveau, Duclaux, Arm, Gautier.

The German Congress of Internal Medicine. — The sixteenth German Congress of Internal Medicine will be held in Wiesbaden from the 13th to the 16th of April. Dr. Moritz Schmidt, of Frankfort, will preside. The subjects discussed will be "The Teaching of Clinical Medicine" (von Ziemssen and von Jacksh), "Intestinal Auto-intoxication and Antisepsis" (Müller and Brieger). Professor Leo, of Bonn, will read a paper on "The Present Status of the Treatment of Diabetes Mellitus."

Meat Frozen Four Years Ago. — Whether there are any epicureans who will relish viands four years old is a matter for gastronomes to decide. The health commissioner of Denver, Col., without waiting for a decision from the connoisseurs, has seized and destroyed 40,000 pounds of such meat. It is said that the killing was done in Omaha, Neb., in 1894, and that the meat was frozen and hung in a refrigerator, until the dealers found a favorable opportunity to feed with it some community which did not know of its antecedents. — *Journal of the American Medical Association.*

The Siphon Drainage of Large Cavities. — Heaton (*British Medical Journal*, January 22, 1897) describes a familiar apparatus for the continuous siphonage of the contents of large cavities, with an important modification. As is well known, siphonage is commonly seriously interfered with by the sucking of the soft walls of the cavity against the openings in the rubber or glass tubes employed, and consequent interference with the action of the siphon. Heaton has employed with success an outer perforated tube, and an inner tube which is connected with the siphon. Fluid trickles into the outer tube through the perforations and is then sucked up through the open end of the inner tube. This apparatus has answered its purpose well in six cases in which it has been employed.

The Widal Reaction in the New-born. — Dr. Alfred Stengel recently presented an interesting case in the clinical amphitheatre of the University of Pennsylvania. The patient was in the ninth month of pregnancy and the second week of an attack of typhoid fever. Her temperature had been quite high during the attack, which had run a typical course and given the Widal reaction. The child was born with a temperature of 102°, which gradually subsided within a period of three days. The Widal reaction was sought for, but not secured. Two days after the birth of the child the mother's temperature had a sudden exacerbation, but gradually subsided, and both mother and child are now doing well.

Castration for Rape in Kansas. — A bill has been introduced into the Kansas Legislature, referred to the Committee on Public Health and Hygiene, and by them reported back with the recommendation that it pass. It provides that every person who shall be convicted of rape, and every person who shall be convicted of incest, and every minister, clergyman, priest or teacher, having charge of any church or other religious body or school, who shall have illicit connection with any unmarried virgin female under twenty-one years of age of his charge or school, and every guardian of any female ward under the age of eighteen years who shall defile her, shall be punished by imprisonment at hard labor for a period not less than five nor more than twenty years, and in addition to such punishment shall be castrated.

"The Passing of the Reflex." — Dr. Patrick (*Intercollegiate Medical Journal*, February, 1898) writes as follows: "And this leads me to mention what has already begun and what, God grant, may soon be consummated — the passing of the reflex. When to the nerve-specialist comes a case of epilepsy, with a note from the family physician saying that the ovaries have been removed without effect, and so perhaps the trouble is in the brain, or a case of convulsive tic, with the message that the spasm has continued in spite of cauterization of the turbinates, or, as occurred to me a few days ago, he sees a born neuropath with typical traumatic neurosis who has undergone five pelvic operations for relief of her nervous symptoms, he groans in spirit and looks longingly forward to the millennium, when the man who operates shall have or procure an adequate understanding of that for which he cuts. In the meantime, under the keen scrutiny and rigid requirements of neurology, the so-called reflex as a cause of great nervous disorder is gradually being pushed into its rightful place, that is, among the relatively unimportant curiosities of etiology."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, March 16, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 73, scarlet fever 41, measles 43, typhoid fever 16.

Deaths from Cerebro-Spinal Meningitis. — There were reported in Massachusetts, between January 1, and March 12, 1898, the following deaths from cerebro-spinal meningitis:

Week ending Jan. 8	8
" " " 15	5
" " " 22	5
" " " 29	6
Week ending Feb. 5	6
" " " 12	5
" " " 19	7
" " " 26	5
Week ending Mar. 5	9
" " " 12	7
	63

Of these, there were in

Boston	20
Worcester	9
Malden	6
Holyoke	10
Lynn	3
Chelsea	4
Clinton and Quincy, each	2
Newton, Cambridge, Fitchburg, Melrose, New Bedford, Somerville, Woburn, each	1
	63

The above figures were furnished the Journal by the State Board of Health, and exhibit in a striking way the continued prevalence and wide distribution of the disease in this State.

The Boston Lying-in Hospital. — The sixty-fifth annual report of the Boston Lying-in Hospital, which has just been received, shows that during 1897, 633 women were cared for in the wards and 1,679 in the Out-patient Department. Of the 633 patients treated in the wards, 537 were residents of Boston, and 411, or 64 per cent., were married women. The total expense of carrying on the hospital for the year was $20,235.89, and the cost per week of each patient treated was $14.07. During the year legacies amounting to $45,000 were received. Although a generous response has been made to the appeal for contributions for the support of the hospital, it is to be regretted that the annual donations, together with the current receipts from invested funds and from the hospital, have been insufficient to meet the necessary current expenditures. This report completes the record of the twenty-fifth year of the hospital since its reopening, January 1, 1873, and also the twenty-fifth year of service of the present visiting physician, Dr. Wm. L. Richardson, and of the matron, Mrs. E. J. A. Higgins.

NEW YORK.

Rabies and the New York Board of Health. — Dr. H. M. Biggs, pathologist and director of the bacteriological laboratories of the Board of Health, has just sent in, through Dr. Charles F. Roberts, sanitary superintendent, a report in which he recommends that the Department announce to the medical profession and the public its readiness to administer the Pasteur treatment for the prevention of rabies in human beings, free of charge, to any residents of New York who may be bitten by dogs proved to be rabid. He directs attention to the fact that within a week the body of a dog which had bitten five persons has been sent to the laboratory to determine whether it was rabid or not. He also encloses the clinical history of a recent case of rabies in the human being, in which the brain of the patient was forwarded to the laboratory to be tested, and inoculations made with it were followed by the production of typical rabies in the animals inoculated. Three other cases are now under investigation in the laboratories of the Department.

He then goes on to say "Rabies, or hydrophobia, is so terrible and so fatal a disease that, although comparatively few cases occur in New York and its vicinity, the prevention of these few is of great importance from a humanitarian standpoint. During the past five years fourteen deaths have been reported from rabies in the cities of New York and Brooklyn, while some additional deaths should undoubtedly be included to allow for those who have gone abroad for treatment, and, receiving it too late, have died there. During 1896 there were treated at the New York Pasteur Institute 109 persons from New York State who had been bitten by dogs or animals supposed to be rabid. The bodies of four dogs brought to the laboratories of the Department of Health within the last year were proven by the results of inoculating rabbits to have had undoubted rabies. Three of these animals had bitten one or more human beings. . . . The treatment for rabies, as originated by Pasteur, is still used with but slight modifications."

After describing the method and giving statistics from the Pasteur Institute of Paris, Dr. Biggs adds: "The experimental work on rabies carried on in the laboratories of the Department of Health covers a period of almost twelve months, and has consisted in studies on the production of the disease by various methods of inoculation, and the creation of immunity to the disease in animals by the preventive method of treatment. The preventive treatment has been for the most part applied to guinea-pigs, and nearly 50 per cent. of the test animals have been made resistant to the disease where subdural inoculation follows the treatment. A more severe test could not be devised. The facilities for drying and preparing the cords, which, up to a recent period, have not been as perfect as could be wished for, are now excellent. The new laboratory in the vaccine building contains every means for carrying on the treatment in the most satisfactory manner. . . . The treatment reduces the mortality of those bitten by rabid dogs from 10 per cent. or more, to less than one per cent.

Professor Chittenden Receives an Appointment at Columbia. — The trustees of Columbia University have chosen Prof. Russell H. Chittenden, Ph.D., of Yale University, to be the director of the department of physiological chemistry in the College of Physicians and Surgeons, the medical school of the University. The directorship in question was established a year ago, this department being made a distinct one from that of chemistry at that time. Professor Chittenden was graduated from the academic department of Yale in 1874, and studied for two years afterwards at the University of Heidelberg. He became an instructor in the Sheffield Scientific School in 1876, and six years later was elected professor of physiological chemistry of Yale University. He has given expert testimony in many important criminal cases.

The Nurses' Exhibit at the Health Exposition. — On March 10th about three hundred trained nurses from the various hospitals of the city met at the Grand Central Palace at the call of Miss Mary E. Wadley, of the Bellevue training-school, to discuss the arrangements for the Trained Nurses' Educational Exhibit to be held in connection with the International Health Exposition in New York from April 25th to May 31st. Dr. Stephen Smith made an address on the growth of the trained nurse as a hospital factor, and a number of practical suggestions were made for the proposed exhibit. The New York Hospital Training School will show an ideal sick-room. Bellevue will contribute a room prepared for a surgical operation, the Post-Graduate will reproduce a section of its babies' ward, Mount Sinai will have a booth arranged for eye and ear service, and the Presbyterian will present model miniature hospital wards. It is also proposed to illustrate the former and present methods of treating the insane. Medals will be awarded the trained nurses for the best typhoid-fever charts, the most inviting invalid's luncheon tray, and for the best designs for any article used in the sick-room by physician, nurse or patient.

Bequests to Charities. — The will of the late Amos R. Eno, the owner of the Fifth Avenue Hotel property, leaves a large amount to charities. Among the institutions benefited are the Demilt Dispensary, New York Cancer Hospital, Society for the Relief of the Ruptured and Crippled, Training School for Nurses and the New York Institution for the Blind, each of which receives $5,000.

Death of Dr. John H. Mease. — Dr. John H. Mease, a prominent physician of Oswego, New York, died at his home in that city on March 11th, at the age of seventy-one. He received the degree of M.D. fifty years ago, and had practised in Oswego for the last twenty-seven years.

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Miscellany.

A TRAMP WITH PROGRESSIVE MUSCULAR ATROPHY.

DR. TARGOWLA gives an account, in a recent number of the *Nouvelle Iconographie de la Salpêtrière*, of a tramp, aged sixty-five, who has suffered for thirty years from progressive muscular atrophy of the Aran-Duchenne type.

The curious point about the case is the extraordinary ingenuity of the tramp in devising means for enabling him to lead his nomad life although his limbs are disabled. In order to sit down he first falls on his knees, then throws himself back upon his ischial tuberosities. He cannot crouch, so he is obliged to lean on his hands and knees in order to defecate. When naked and without support he cannot stand upright, but when dressed and strapped up he can do so, leaning on two sticks. In order to rise from the sitting position he has to bear on his hands and knees, and climb up along some fixed object. To keep himself upright he has invented a complicated system of straps; these fix his knees and thus give him a fulcrum for his hips, the muscles of which are unimpaired. His knees are protected by leather caps. The man is always on the move, walking from two to three kilometres a day. This he is able to do by means of shoes of his own invention; these are very large, 35 centimetres long, 14 wide, and he stuffs the inside of them so as to protect his toes, which have a tendency to claw-like curvature.

He has no home, and says of himself that he is the only citizen of the French Republic who pays no taxes, though it can hardly be said that he has "no visible means of support." He is, however, a philosopher, and, unlike Job, does not curse the day that he was born; his philosophy may be partly due to the fact that he has no wife to reproach him with his afflictions. He is gentle and amiable in character, and to a certain degree educated, so that he is always well received by the country people, who let him sleep in the stables and cow-houses. He much prefers his wandering, homeless life to being admitted to a hospital, where he fears he might be deprived of his supporting apparatus. — *British Medical Journal.*

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Correspondence.

THE MEDICAL REGISTRATION BILL.

MR. EDITOR: — In view of your vigorous criticism of Professor James's speech, it seems but fair to remind your readers that there are a good many physicians who, although they admit that the evils which the amended Registration Bill sought to cure are real and serious, yet think that the proposed measure was not a wise one and should not pass. This is also the opinion of the undersigned.

Yours truly,
JAMES J. PUTNAM, M.D.

[We distinguish between the amendment to the Registration Bill, and Professor James's method of attacking it. The former is debatable if you choose; the latter can only be condemned by an educated practitioner of medicine who respects his profession and himself. — ED.]

METEOROLOGICAL RECORD

For the week ending March 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..27	29.94	34	43	26	75	76	76	N.W.	N.W.	8	8	C.	C.	
M..28	29.88	34	40	27	68	81	74	W.	N.W.	12	7	C.	C.	
T ...1	29.92	32	40	25	76	54	65	N.	N.W.	10	10	O.	C.	
W...2	30.10	36	45	26	73	55	54	N.W.	S.	11	5	C.	O.	
T ...3	30.20	37	42	32	98	77	86	N.E.	N.E.	8	7	N.	C.	.10
F....4	30.18	34	37	31	88	96	92	N.	W.	3	12	O.	N.	.13
S....5	30.10	36	43	29	84	59	72	N.W.	W.	12	10	C.	C.	.24
☞														.47

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 5, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1218	425	9.84	13.36	1.36	.48	3.44
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	183	44	3.30	19.80	—	1.85	—
Baltimore . .	550,000	242	86	6.97	19.27	1.23	1.23	1.23
Boston . . .	517,732	194	51	9.36	19.24	1.04	—	3.64
Cincinnati . .	405,000	107	—	6.51	11.16	.93	.93	—
Cleveland . .	350,000	106	33	4.70	10.34	.94	—	2.82
Pittsburg . .	285,000	97	29	19.57	17.51	7.21	3.09	1.03
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	47	21	11.65	14.91	2.31	—	6.39
Nashville . .	87,754	30	6	6.66	21.11	3.33	3.33	—
Fall River . .	95,919	33	17	10.00	33.23	10.00	—	—
Lowell . . .	87,193	24	8	4.16	33.28	4.16	—	—
Cambridge . .	86,812	33	12	3.03	12.12	3.03	—	—
Lynn	65,220	23	3	—	15.05	—	—	—
Charleston . .	65,165	26	10	3.85	19 25	—	—	3.85
New Bedford .	62,416	18	6	11.11	11.11	5.55	—	—
Lawrence . .	55,510	23	15	—	15.05	—	—	—
Springfield . .	54,790	21	9	—	38.08	—	—	—
Holyoke . . .	42,364	21	1	14.28	15.52	4.76	—	4.76
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	13	4	—	15.38	—	—	—
Brockton . .	35,853	7	3	14.28	—	—	14.28	—
Malden . . .	32,894	11	2	—	33.33	—	—	—
Chelsea . . .	32,716	13	2	—	—	—	—	—
Haverhill . .	31,406	9	1	—	22.22	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	6	1	—	—	—	—	—
Fitchburg . .	28,392	7	2	14.28	14.28	—	—	—
Taunton . . .	27,812	6	0	—	16.66	—	—	—
Quincy . . .	22,562	7	2	—	28.56	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	—	—	—	—	—	—	—
Everett . . .	21,575	8	2	—	12.50	—	—	—
Northampton .	17,448	5	1	—	—	—	—	—
Newburyport .	14,794	—	—	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,657; under five years of age 886; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 230, acute lung diseases 493, diphtheria and croup 67, diarrheal diseases 42, scarlet fever 31, measles 30, whooping-cough 24, typhoid fever 18, cerebro-spinal meningitis 9, malarial fever 5, erysipelas 4.

From scarlet fever New York 26, Boston 2, Cincinnati and Melrose 1 each. From measles New York 18, Pittsburg 5, Baltimore and Cincinnati 2 each, St. Louis, Boston and Cleveland 1 each. From whooping-cough New York 10, Baltimore 5, Cincinnati and Pittsburg 3 each, Boston, New Bedford and Somerville 1 each. From cerebro-spinal meningitis Boston 3, Providence, Worcester, Somerville, Holyoke, Chelsea and Fitchburg 1 each. From malarial fever New York 3, St. Louis 3. From erysipelas Boston 2, Baltimore and Somerville 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending February 26th, the death-rate was 20.9. Deaths reported 4,500; acute diseases of the respiratory organs (London) 416, measles 217, whooping-cough 112, diphtheria 69, fever 38, diarrhea 34, scarlet fever 34.

The death-rates ranged from 12.6 in Croydon to 30.2 in Wolverhampton; Birmingham 21.6, Bradford 14.5, Bristol 21.2, Cardiff 21.3, Derby 12.9, Gateshead 25.1, Hull 18.4, Leeds 22.3, Liverpool 24.7, London 21.9, Manchester 21.8, Newcastle-on-Tyne 18.9, Nottingham 22.5, Salford 21.3, Sheffield 20.9, Sunderland 18.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 5, 1898, TO MARCH 11, 1898.

Leave of absence for six months on surgeon's certificate of disability is granted Captain Norton Strong, assistant surgeon, to take effect upon the expiration of the ordinary leave of absence granted him.

The following named medical officers are relieved from duty at the Army Medical School in this city, to take effect upon completion of the course at the school, ending April 1, 1898, and ordered to take station as follows:

First-Lieut. Henry Page, assistant surgeon, Presidio of San Francisco, Cal.

First-Lieut. Bailey K. Ashford, assistant surgeon, Fort Sam Houston, Tex.

First-Lieut. Henry A. Webber, assistant surgeon, Fort Reno, O. T.

First-Lieut. Jere B. Clayton, assistant surgeon, Fort Clark, Tex.

First-Lieut. Brainard S. Higley, Jr., assistant surgeon, Fort Niobrara, Neb.

First-Lieut. George Rauchfuss, assistant surgeon, Fort Apache, Ariz.

First-Lieut. Thomas S. Bratton, assistant surgeon, upon the arrival at Fort Niobrara, Neb., of First-Lieut. Brainard S. Higley, Jr., assistant surgeon, will be relieved from duty at that post and ordered to Fort Leavenworth, Kan., for duty.

A board of medical officers to consist of Col. Dallas Bache, assistant surgeon-general, Major Walter Reed, surgeon, Major James C. Merrill, surgeon, Captain William H. Arthur, assistant surgeon, First-Lieut. Alexander N. Stark, assistant surgeon, is constituted to meet at the Army Medical Museum Building in this city on Monday, May 2, 1898, at 10 o'clock A. M. for the examination of candidates for admission to the medical corps of the Army.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING MARCH 10, 1898.

Bailhache, Preston H., surgeon. To proceed to Cape Fear Quarantine, Southport, N. C., as inspector. March 8, 1898.

Peckham, C. T., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon W. J. S. Stewart, to proceed to Pittsburg, Pa., and assume command of Service. March 8, 1898.

Pettus, W. J., passed assistant surgeon. Relieved of command of Service at Norfolk, Va., and to remain in command of Cape Charles Quarantine. March 10, 1898.

Magruder, G. M., passed assistant surgeon. To rejoin station, Memphis, Tenn. March 8, 1898.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Middleboro, Ky., for special temporary duty. March 10, 1898.

Brown, B. W., passed assistant surgeon. To proceed to Norfolk, Va., and assume command of Service. March 7, 1898.

Stewart, W. J. S., passed assistant surgeon. Upon being relieved by Passed Assistant Surgeon G. M. Magruder, to rejoin station, Vineyard Haven, Mass. March 8, 1898.

Oakley, J. H., passed assistant surgeon. Granted leave of absence for one month. March 4, 1898.

Hastings, Hill, assistant surgeon. To rejoin station, New Orleans, La. March 8, 1898.

Von Ezdorf, R. H., assistant surgeon. To proceed to New Orleans, La., for duty and assignment to quarters. March 4, 1898.

Foster, M. H., assistant surgeon. To proceed to Chicago, Ill., for duty and assignment to quarters. March 10, 1898.

APPOINTMENTS.

Rudolph von Ezdorf, of the District of Columbia, and Milton H. Foster, of Pennsylvania, commissioned as assistant surgeons.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, March 21st, at 8 o'clock.

Dr. W. M. Conant will read a paper on "Three Cases of Intestinal Resection."

Dr. E. G. Brackett: "Epidemic Infantile Paralysis."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, March 23, 1898, at 8 P. M.

Dr. Geo. H. Washburn: "Cæsarean Section *vs.* Symphyseotomy."

Dr. J. M. Crowley: "Omental Hernia in Left Labium Majus."

F. W. Johnson, M.D., *Chairman.*
C. H. Hare, M.D., *Secretary.*

AMERICAN MEDICAL ASSOCIATION.

Notice to all Interested in Neurological Progress.

St. Louis, Mo., March 5, 1898.

All who classify themselves under the above caption will confer a favor upon the undersigned by sending a brief memorandum with accurate reference data attached, of actual progress in Neurology and Neuriatry for the past year, or any facts which they may consider so classified, to be epitomized or referred to in his forthcoming Presidential Address to the Section on Neurology and Medical Jurisprudence of the American Medical Association at its meeting at Denver in June proximo.

Communications are also solicited to be presented to the Section either in person or by letter.

Respectfully submitted, C. H. Hughes, M.D.,
Chairman of Section on Neurology and Medical Jurisprudence.

BOOKS AND PAMPHLETS RECEIVED.

Note on Diastatic Preparations. By Willis G. Tucker, M.D., Ph.D., Albany. Reprint. 1898.

The Virile or Bulbo-Cavernous Reflex. By Prof. C. H. Hughes, M.D., St. Louis. Reprint. 1898.

The Operative Treatment of Hæmorrhoids. By Parker Syms, M.D., New York. Reprint. 1898.

Proceedings of the Pathological Society of Philadelphia February 15, 1898. New Series, Vol. I, No. 4.

Examination of the Urine as a Means of Diagnosis. By Theodore W. Schaefer, M D., Kansas City, Mo. Reprint. 1897.

Can the Dispensary Abuse be Corrected? A Case of Hysterical Dysphagia. By Llewellyn Eliot, A.M., M.D., Washington, D. C. Reprints. 1897–98.

Refrigeration as a Means of Preservation of Bodies for Use in the Dissecting-Room. By Edmund W. Holmes, A.B., M.D., Pennsylvania. Reprint. 1897.

Chancre of the Lip Probably Acquired through the Use of a "Rouge Stick." By Douglass W. Montgomery, M.D., of San Francisco, Cal. Reprint. 1897.

The Diagnosis of Primary Sarcoma of the Pleura from the Cells found in the Pleuritic Exudate. By Aldred Scott Warthin, M.D., of Ann Arbor, Mich. Reprint. 1897.

Proceedings of the American Medico-Psychological Association at the Fifty-third Annual Meeting held in Baltimore, May 11–14, 1897. Published by the Association. 1897.

Irrigation in Purulent Conjunctivitis, with a Combined Retractor and Sulcus-Syringe. King Arthur's Medicine. By George M. Gould, A.M., M.D., and Walter L. Pyle, A.M., M.D., Philadelphia. Reprints. 1897.

The Essentials of Experimental Physiology for the Use of Students. By T. G. Brodie, M.D., Lecturer on Physiology, St. Thomas's Hospital Medical School, London. New York and Bombay: Longmans, Green & Co. 1898.

The Psychology of Suggestion, a Research into the Subconscious Nature of Man and Society. By Boris Sidis, M.A., Ph.D., Associate in Psychology at the Pathological Institute of the New York State Hospitals. With an introduction by Prof. William James, of Harvard University. New York: D. Appleton & Co. 1898.

Law of Refraction, Change following Increase or Decrease of Body-Weight. Retinitis Pigmentosa without the Characteristic Pigmentation, a Report of Two Cases. Dr. Traill Green and the American Academy of Medicine. Some Relations of Author, Publisher, Editor and Profession. Child Fetiches. By George M. Gould, A.M., M.D., Philadelphia. Reprints. 1897–98.

Diet in the Chronic Catarrhs of the Gastro-Intestinal Tract. A Plea for the More Frequent Resort to Analysis of the Stomach-Contents for Diagnostic Purposes. Massage of the Abdomen, Important Indications and Contra-indications for Massage of the Abdomen, with Report of Cases showing its Effect upon the Secretion of the Gastric Juice. By Boardman Reed, M.D., Philadelphia, Pa. Reprints. 1898.

Original Articles.

HOSPITALS AND SANATORIA FOR CONSUMPTION ABROAD.[1]

BY EDWARD O. OTIS, M.D.,
President of the American Climatological Association.

In the year 1889, 44,738 deaths from consumption occurred in England and Wales, which probably represents about the yearly average; and it is estimated that from 78,000 to 80,000 persons are constantly suffering from this disease in England. Recognizing the necessity of making some provision for the poor among this number, who form the larger proportion of sufferers from the unfavorable conditions of their environment, especial consumptive hospitals and sanatoria were founded, which now offer accommodations for 4,900 persons. Vast numbers of ambulatory cases are also treated in the out-patient departments of these hospitals in the cities. In 1896, 118,258 patients of this kind attended the four London consumptive hospitals. Besides the Brompton, Victoria Park, North London, and Royal Hospitals for diseases of the chest in London, there is the Royal National Hospital at Ventnor, Isle of Wight; the National Sanatorium at Bournemouth; and others at Manchester, Liverpool, Torquay, St. Leonards, Newcastle, and elsewhere. All are supported by voluntary contributions with more or less of a fixed income from invested funds, the Brompton having the largest. All are practically free, a nominal charge of a few shillings a week being made in a few, with an entrance fee. I am not aware of any paying sanatoria in England corresponding to Göbersdorf or Falkenstein for instance.

LONDON HOSPITALS FOR CHEST DISEASES.

The four hospitals in London are situated in more or less thickly settled portions of the city, although all, except the Royal, on City Road, are in an open space or in close proximity to one, like the North London Hospital near Hampstead Heath. I made especial inquiry as to the attitude of the neighbors regarding the fear of contagion, but in no case did I obtain any evidence that such fear existed, or that the mortality from consumption was greater there than elsewhere.

The Brompton Hospital is the largest, containing 321 beds, and is situated in the southwestern part of the city, near the Kensington Museum. It consists of two large brick buildings on opposite sides of the street, connected by an underground passageway, and a chapel. The original building stands in an open space of three acres, but the new one opposite has but little ground about it. The internal arrangements for ventilation, heating, light, air-spaces, and administration are excellent. The wards contain from two to ten beds each, with bare floors, hard-finished walls, and plain furnishings. Many of them have fireplaces. In the new building 4,000 cubic feet of fresh air per hour are supplied to each patient, and the vitiated air is extracted by means of shafts opening into towers heated by steam coils. The wards open into large galleries or corridors, which serve for recreation and sitting rooms, and with their pictures, flowers and plants present a very attractive appearance. The medical service consists of consulting physicians, physicians, assistant physicians, resident medical officer and assistants. The visiting staff serve continuously and make one or two visits a week. Clinical instruction is given, and there is a nurses' training-school with a three years' course.

Dr. Habershon, one of the assistant physicians, is the pathologist, and through his courtesy I was enabled to visit the pathological museum of the hospital, containing illustrations of almost every form of tubercular disease of every organ of the body. There is also a laboratory, throat, and inhalation room. The large out-patient department is conducted by the assistant physicians; and here, as at the Victoria Park Hospital, soup, coffee, tea, ginger ale, etc., are served at a nominal price of a penny or two, which seems to me a plan worthy of adoption in some of our large out-patient departments where the poor patients spend hours of weary waiting. Both in- and out-patients must have a letter or recommendation from a so-câlled governor or subscriber, the number a governor can recommend depending upon the amount of his subscription.

The object and need of such an institution is admirably set forth in an extract from the standing rules:

"This institution," it says, "has been established with a view to supply the deficiency so severely felt by necessitous persons in the want of a hospital for the relief of persons suffering from pulmonary diseases; patients afflicted with consumption not being generally admissible into the wards of other hospitals. Its principal objects are:

"(1) The establishment of a temporary asylum for in-patients afflicted with pulmonary consumption, and a hospital for persons laboring under other severe diseases of the chest.

"(2) To supply other persons, similarly afflicted, with advice and medicine gratis, as out-patients, either at the hospital, or, under certain circumstances, at their habitations, within a limited distance.

"(3) To afford a more extended field of observation and research of medical science than has hitherto existed in this country for this class of diseases."

Brompton, as well as the City of London and Royal Hospitals is under the patronage of Her Most Gracious Majesty the Queen, His Royal Highness the Prince of Wales, and other lesser royal highnesses.

The Royal Hospital for Diseases of the Chest, on City Road, E. C., is situated in one of the most thickly settled portions of London, with no grounds about it and closely hemmed in by buildings. It was the first consumptive hospital established in Europe, having been founded in 1814, by the queen's father. It affords accommodations for 80 patients, and has a large out-patient department. The interior is very attractive with its pictures, flowers and plants, which, with the arrangement of the wards, does away with the disagreeable hospital look. There are three wards, named the Beatrice, Albert Edward, and Shaftesbury, a recreation room and chapel. As there are no grounds, the street affords the only opportunity for out-of-door life. Emergency beds are kept for the immediate reception of out-patients "who are found to be suffering from acute and dangerous diseases of the chest of recent origin." The in-medical service is by the three senior visiting physicians, a resident medical officer, and one or more house physicians. All of these hospitals have a chaplain. Among the voluminous list of contributors it is curious to note those of "the worshipful the livery companies," such as the Brewers,

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[1] Read before the Boston Society for Medical Improvement, December 13, 1897.

Drapers, Fishmongers, Goldsmiths, and Skinners Companies.

Next in size to Brompton is the City of London Hospital for Diseases of the Chest, Victoria Park, E. It consists of one large brick building with grounds, and is near the great Victoria Park. The wards, severely plain but scrupulously clean, contain from six to twelve beds each, and offer accommodations for 164 patients. There are also halls and sitting-rooms much like those at Brompton. The average attendence of out-patients each week in 1896 was 1,312 or 218 a day. Here as elsewhere the out-patient hours begin between one and two o'clock.

Brompton Hospital for Consumption, London.

The fourth and last consumptive hospital in London is the North London at Mt. Vernon, Hampstead Heath, which is one of the highest points in the vicinity of London, 430 feet above sea-level. Both the situation and the hospital itself are extremely attractive. As one enters the hall he sees an impressive painting of a mounted knight in armor, leaning over his horse and rendering assistance to a woman in peril, with an inscription to the effect that it is the part of chivalry to aid the weak in obtaining their rights. The wards are of moderate size with a profusion of light and open fireplaces, and on the southern side of the building there are open corridors or piazzas looking upon a pretty garden. There is one large general dining-room, a recreation- and smoking-room, and most comfortable quarters for the resident physician. There is no chapel, but prayers are said in the wards. The proximity to Hampstead Heath offers a fine outdoor promenade for those patients who are able to walk about. The capacity is 80 beds. Patients are received "for a period not exceeding six weeks (except on special medical grounds)." There are a limited number of paying patients at the rate of 10*s.* 6*d.* a week. Besides the out-patient department at the hospital there is also another in the city at Fitzroy Square.

In all these hospitals the early cases of phthisis are the ones desired, although advanced cases, of necessity, frequently gain admittance through the out-patient department and otherwise. The care of the sputum is measurably well attended to, and there does not seem to be that dread of contagion which exists in some localities in this vicinity (Boston). Each patient has a spit-cup of white earthen ware or galvanized iron, with a five-per-cent. solution of carbolic acid, as a rule. Out of doors he either carries this cup, or uses a special handkerchief or piece of cloth. In the grounds at Brompton, however, there are posts at frequent intervals, upon which are spit-cups which the patients are required to use. The sputum is either burned or thrown into the waste water. At Brompton it is collected in glazed iron buckets, mixed with cinders and burned in a special retort, as are also the handkerchiefs used by the patients out of doors. In the out-patient departments, printed instructions are given the patients as to the dangers from the sputum and their prevention; and I subjoin those of Brompton, which seem to me admirable on account of their simplicity and clearness:

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, BROMPTON.

Directions to Out-Patients.

1. Never spit about the streets or on the floor or in the fireplace, or into any vessel unless it contains a disinfectant.
2. When indoors always use a cup or jar or hand spittoon containing a tablespoonful of strong solution of washing-soda or other disinfectant. Empty it daily down the water-closet; never empty it upon the dust-heap.
3. When empty wash it thoroughly with boiling water and add a tablespoonful of the disinfectant.
4. Handkerchiefs used by consumptive patients should be fre-

quently changed, at least once daily, and should be scalded before being washed.

5. Do not swallow the expectoration, as by so doing other organs of the body may become affected.

6. Keep your room well aired and cleaned.

7. A consumptive patient should, if possible, occupy a separate bed.

8. Any room which has been occupied by a consumptive patient should be thoroughly cleansed before again being used.

9. Milk may be a source of danger and should be boiled before use.

By Order of the Committee.

The treatment was mainly hygienic-dietetic: good care, excellent food, well-ventilated wards and rooms, and more or less outdoor air and exercise. There was but comparatively little medication. Creosote seemed to be generally used, but usually in small quantities and with but little faith in it as possessing any specific virtue. At one of the hospitals, however, I was told that it was used in forty-minim doses, two drachms a day. Inhalations of creosote vapor were made use of for gangrenous conditions of the lungs. Oxide of zinc and belladonna were quite universally used as an anti hydrotic. Pyrexia was not treated except as it became an annoying symptom. In none of the hospitals was ergot used for hemoptysis, or indeed any drug save morphia. Of the results, the majority are discharged more or less improved, which is about all one could expect under the unfavorable conditions of consumptive hospitals situated in a great city; the time a patient can be retained is necessarily short from the pressure to gain admittance, and the open-air treatment so insisted upon in the Continental sanatoria is either impossible or possible only to a limited degree, owing to the lack of open space. Moreover, the city air is impure, laden with dust and germs. Nevertheless, these hospitals are of infinite worth to the working people, to whom they offer treatment and care in their misfortune, and who would otherwise be left to suffer and die in crowded tenements, with the constant risk of infecting those about them. There are, however, various places on the south coast at Bournemouth, Sandgate, Eastbourne, Folkestone, etc., called "Convalescent Homes," where patients leaving these hospitals "improved" can make still further progress towards recovery in the pure air of these places.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, VENTNOR.

At Ventnor, on the southeastern coast of the Isle of Wight, is situated the Royal National Hospital for Consumption and Diseases of the Chest. The salubrity of the climate of the south coast of England, especially in the winter, and its beneficial effects in pulmonary diseases is well known, and Ventnor is one of the many health stations on this coast. The hospital stands in a sheltered spot of the "Undercliff," looking towards the south and the ocean, in the midst of extensive grounds attractively laid out, and exhibiting the beautiful and varied vegetation for which the island is noted. The situation, with the combination of land and sea, is indeed enchanting. The buildings consist of ten blocks or cottages, with a chapel, affording accommodation for 134 patients. Each block has from ten to eighteen sleeping-rooms, and a sitting-room for every four or six patients; 5,000 cubic feet of fresh air are supplied every hour and an equal amount of foul air extracted. The blocks are connected by a subway, and there is one general kitchen, and a large hall for entertainments and amusements. On the southern exposure extends a veranda surrounded by a balcony which can be reached from the bedrooms.

Only incipient cases or those arrested in the later stages are received, and a nominal charge of ten shillings a week is made, "in order," as the report says, "to give the patients a feeling of independence." The length of residence depends upon the necessity of the case and the discretion of the physician, but if a patient remains longer than ten weeks a fresh letter of recommendation must be procured.

As to the results obtained, the report for 1890 gives, of those discharged during the year, 12 per cent. very much improved, 18.8 per cent. much improved, and 44 per cent. improved. When one is reminded that 631 were admitted during the year and 639 discharged, he will see that the short term of residence militates against more favorable and permanent results. Moreover, the excellent opportunities for the *Freiluft Kur*, such an essential factor in the management of the disease with the Germans, did not seem to me to be taken advantage of as they might, and I do not remember seeing any very large number of patients lying out in reclining chairs, such a general and common feature in the Continental sanatoria.

The Royal National Hospital for Consumption, Ventnor.

NATIONAL SANATORIUM, BOURNEMOUTH.

Of the three south-shore winter resorts I visited, Torquay, Ventnor and Bournemouth, the latter, besides possessing equally favorable conditions in other respects, has the advantage of being situated in the pines which are thickly scattered about, both in and around the town. In this respect as well as for its warm climate it strongly resembles the French resort, Arcachon, on the coast opposite. The pines resemble in appearance those seen at the south, and they are, next to the cliffs, the striking feature of the place. The favorite and most frequented resort for those suffering from pulmonary troubles is the "Invalid's Walk," which winds among the pines in the attractive park near the ocean. The sanitary and hygienic conditions appeared to be most excellent.

About half a mile back from the ocean, overlooking one of the pleasant gardens, is situated the National Sanatorium, a long two-story building of stone. It has been in existence over forty years, and, as at

Ventnor, is for the "necessitous poor"; from most of the patients, however, a weekly payment of seven shillings and sixpence is required. It can accommodate 62 persons. The wards are small, containing about five beds. Almost adjoining is the large and elegant Mont Dore Hotel and bath-house, but I could not learn that the inmates entertained any fear of contagion from their consumptive neighbors.

Some of the "rules to be observed by the patients" might strike one as somewhat peculiar, for instance: "Patients shall attend daily morning and evening prayers; also divine service on Sunday, morning and evening." "Male and female patients may not take exercise together, or communicate with each other." And another, which seems assuredly questionable, when one considers that consumption is a disease which requires so much individualization, and in certain states, as fever, rest rather than exercise: "Patients are required to be able to walk out daily, are to make their own beds, to keep their wards in order, to make themselves generally useful, and are not to remain in their bedrooms during the day-time."

The treatment is mainly fresh air and good food, with symptomatic medication. I give a specimen of a day's dietary:

Breakfast.—Fried bacon, boiled eggs, cold meat, tea, coffee.
Dinner.— Top side of beef, loin of mutton, suet pudding, baked rice pudding.
Tea.— Bread and butter, tea, jam.
Supper.— Hot and cold milk, soup, porridge.

In 1895, 218 patients were treated, of which 103 or 47 per cent. were "very much improved and able to return to their work."

The Firs Home, for cases of advanced consumption, is also situated in Bournemouth, and is a most attractive and comfortable "home" for 20 patients. A picturesque stone building near the centre of the city, with vines and flowers, it gives no suggestion of the pathetic scenes happening within.

PARIS.

In Paris there are no hospitals exclusively for consumption, but those suffering from this disease are received into the general hospitals and segregated as much as possible in separate wards; this I found to be the case in the great Hospital de la Pitié and Lariboisière.

ORMESSON.

At Ormesson, eight or ten miles out of Paris, is a new sanatorium for tuberculous children, situated upon a plateau overlooking the valley of the Marne, and on one of the highest points in the environs of Paris. It is composed of single-story pavilions which were used in the Exposition of 1889. The whole arrangement is most simple: two large wards containing 100 beds in all, with a kind of cemented floor, glistening white walls, large windows letting in a flood of light; long rows of little beds along the sides, exquisite neatness; the whole presenting a most striking and attractive appearance. I saw but one child in bed, the rest looking brown and ruddy, were out of doors in the yard, evidently receiving some sort of instruction from a teacher. The treatment is purely hygienic. The support is by voluntary contributions from the members of a society known as "D'Œuvre des Enfants Tuberculeux," who also have established another hospital of the same nature at Villiers-sur-Marne, about three-quarters of an hour distant from Ormesson, and which contains 80 beds. The Sisters of Charity have the care of both these hospitals.

(To be continued.)

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OBSERVATIONS ON MENINGITIS IN INFANTS AND CHILDREN.[1]

BY A. H. WENTWORTH, M.D.,
Assistant in Diseases of Children and in Pathology in the Harvard Medical School.

(Continued from No. 11, p. 244.)

Chronic cases last from eight to ten weeks, or even longer. This form has the usual acute onset followed by severe symptoms lasting for several days. Then the temperature falls gradually and remains either normal, subnormal, or slightly elevated for weeks. The symptoms of retraction, tenderness in the neck and spine, hyperesthesia and more or less mental disturbance persist most of the time although these symptoms vary very much in intensity from day to day. The emaciation becomes extreme and the patient grows weaker and weaker. The pulse is often considerably increased in rate. Complications in the heart, lungs and other organs are exceedingly rare with the exception of the eyes and ears. Optic neuritis is not uncommon, and deafness not infrequently occurs. Paralyses, aside from the ocular muscles, are uncommon. When death occurs it is, as a rule, unexpected and takes place quietly. In some cases paralysis of respiration occurs without any terminal rise in temperature, or symptoms of infection. The clinical picture of these cases suggests nerve degeneration as a cause of death. The cases which recover are often permanently blind and deaf and mentally impaired.

Case IV. Female, seven years old. Entered the hospital February 11th with a history of three weeks' illness. The disease began suddenly with violent headache, vomiting and fever. The vomiting continued for three days, during which time she vomited several times each day. The head became retracted very soon, and there was episthotonos and general hyperesthesia. The patient complained of pain in the ears. There was no loss of consciousness; but it is presumable that stupor occurred. Deafness was said to have occurred four days after the onset of the disease.

A physical examination made on February 11th is as follows: "The patient is emaciated. There is considerable stupor from which the patient rouses when disturbed. The head is held retracted and drawn to the right side. There is considerable hyperesthesia over the spine. Pressure over the right mastoid causes pain. There is almost complete deafness. A few râles are heard in the lungs. The heart is negative. The liver and spleen are not enlarged. The abdomen is somewhat retracted. There is no albumin in the urine. An examination of the ears shows an acute inflammation of the right middle ear and a more chronic process in the left ear." The condition remained about the same for several days. The retraction of the head and hyperesthesia gradually subsided and by the 19th of February these symptoms had disappeared. The patient at this time was practically unconscious. She lay motionless in bed, at times crying out. It was difficult to make her take food.

Lumbar puncture, performed on February 23d, showed a turbid fluid, which contained pus corpuscles and fibrin. Diplococci were present in some of the cells. No culture of the organism was obtained.

Until March 5th the condition remained about the same except that the mental disturbance was not so marked. The patient remained motionless for hours, the face wearing a stupid and vacant expression. The pupils were widely dilated and reacted imperfectly to light. There was some convergent strabismus. The temperature was practically normal.

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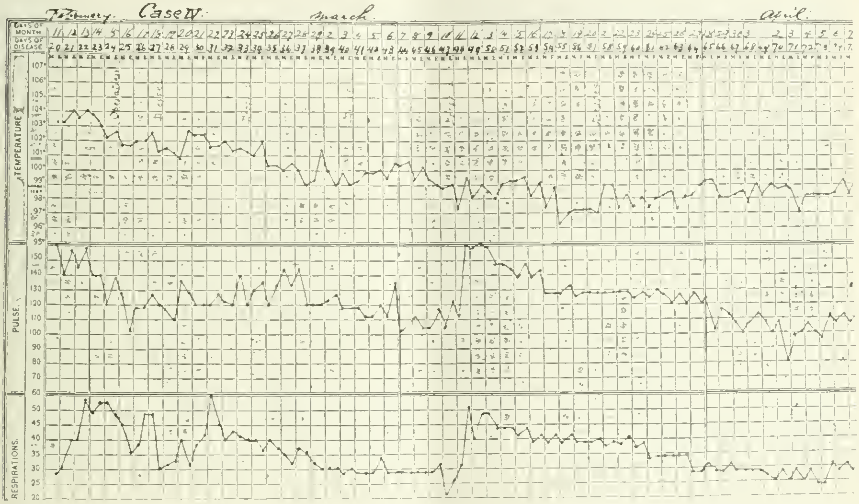
[1] From the Sears Pathological Laboratory of the Harvard Medical School.

From March 5th to March 19th the child grew gradually weaker. There was always more or less stupor. The pulse was rapid and feeble. Food was administered with difficulty.

From March 19th to April 5th there was slight improvement. Food was taken better and she seemed a little stronger. There was practically total deafness. From this time until her discharge from the hospital the temperature remained between 98° and 99° F. The pulse varied between 100 and 120. The respirations were normal.

A recorded examination on April 5th shows thus:



"The patient is excessively emaciated. There is no retraction of the head. There is some hyperesthesia. The abdomen is retracted. The heart-sounds are clear. The liver and spleen are not enlarged. The lungs are negative. There is considerable stupor but the patient can be easily roused. The examination of the eyes shows double optic atrophy. There is no paralysis. The strabismus has disappeared. The patient is apparently able to detect light."

In the middle of April the patient's general condition was worse than at any time. On several occasions it seemed impossible that she could live longer than a few hours. During these days the pulse was very feeble. The respiration was superficial and slow at times. The extremities were cold and dusky in color. Food and stimulants were administered with great difficulty. On some days she appeared a little stronger. This condition lasted with varying intensity for about a week. Then she began to take food better and became cognizant of her surroundings to some extent.

From May 2d she gained progressively but slowly. Her appetite became ravenous, so that she cried for food. By the middle of May she sat up in bed with a support. She became quite irritable. By the end of May the pupils reacted slightly to light and she could distinguish the contours of people near her. By this time she sat up in a chair. There was no paralysis.

She was able to stand alone by the first week in June. Examination of the eyes showed improvement in the fundi. The loss of hearing was complete. By June 20th she was able to walk unaided, and was discharged well.

It was several weeks after she began to gain and to have so good an appetite before there was a noticeable diminution in the emaciation. Dr. Jack reports that an examination of the eyes made some time after leaving the hospital showed constant improvement. She was able to recognize people's faces.

A second and third lumbar puncture, made at intervals of about two weeks after the first one, showed a diminution in the turbidity of the fluid and in the number of cells and quantity of fibrin.

Case V. Male, three and one-half years. Entered the hospital on April 5th. The child was said to have had a mild attack of measles four weeks previous to the present illness from which he recovered within a week. The present illness began suddenly with fever and vomiting. On the following day the head became retracted, and there was considerable hyperesthesia.

A physical examination made at the time of entrance, on the fifth day of the disease, is as follows: "The patient is under-developed and somewhat emaciated. He lies on his side with the head very much retracted and held rigidly. There is considerable apathy. The eyes are widely open, and the pupils are dilated and react imperfectly to light. A slight degree of convergent strabismus is present. There is marked general hyperesthesia. The throat is negative. There is no efflorescence on the skin. There is a purulent discharge from both ears, presumably of long standing. The heart-sounds are not abnormal. The lungs are negative with the exception of a few moist râles here and there. The abdomen is retracted and the muscles are tense. The spleen and liver are not enlarged." The urine was not obtained.

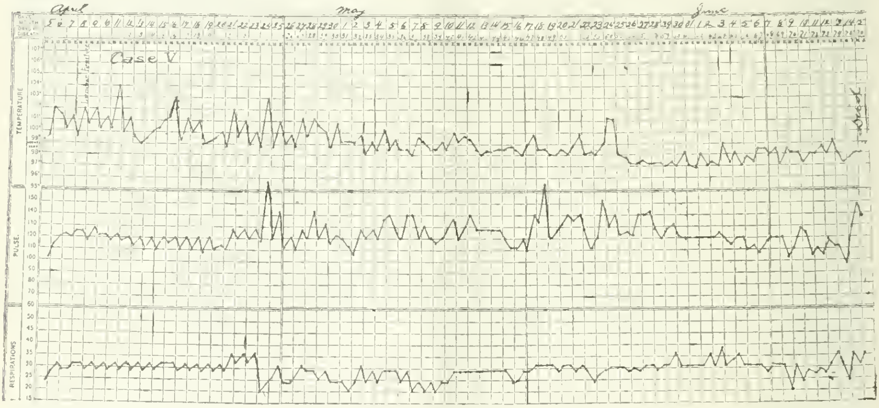
Three days later the patient became unconscious. He still lay upon his side with the head retracted. He was not sensitive to touch. The pupils were dilated.

Lumbar puncture was performed on the eighth day of the disease. A very turbid fluid was obtained, which contained numerous pus corpuscles and much fibrin, many of the cells contained diplococci. Cultures from the fluid in serum showed a profuse growth of the diplococcus intracellularis. The patient was unconscious only for a day or two but he remained very stupid and only roused when disturbed.

From the twelfth to the thirtieth day of the disease the patient's condition varied from time to time. Often for two or three days there was marked retraction of the head and hyperesthesia. These periods were followed by short intervals, during which the symptoms were less severe. During the entire illness the child was never entirely free from these symptoms. The mental condition varied in the same way from apathy to stupor. He was fed with great difficulty, part of the time by means of a nasal tube. The emaciation became very marked.

In the fifth week of his illness there was a little improvement. He took food better and appeared to be a little stronger. This period of slight improvement lasted about three weeks and then he grew weaker. At times his heart was quite feeble but responded to stimulants. Toward the last he refused food. The respiration was slow. The pulse was rapid and weak. The retraction subsided, and he died quietly after ten weeks' illness.

Throughout the course of the disease the patient continued to have exacerbations and remissions in the intensity of the cerebral and spinal symptoms, without any rise in temperature after the first four weeks.



Autopsy (Dr. Wentworth). Body of a very much emaciated male child.

Head.— Opening of the dura is followed by the escape of a considerable quantity of fluid. The convolutions are much flattened. In the fissure of Sylvius, along the middle and lower part of its course, is a small quantity of yellow, opaque exudation. The exudation is firmly fixed in the meshes of the pia. The quantity is approximately the same on both sides of the brain. At the base of the brain the quantity is much more excessive, covering in the optic commissure to some extent and extending over the crura, pons, cerebellum and medulla. The exudation is partly organized and binds the neighboring parts firmly together by means of bridges of exudation which extend between the pons, cerebellum and medulla. There is considerable exudation of the same character on the superior surface of the cerebellum. The lateral and third ventricles are considerably distended with fluid.

Cord.— The dura and pia are quite firmly united by partly organized adhesions over the cervical portion of the cord. The pia is somewhat opaque over the whole cord, especially posteriorly.

Thorax. — The left lung is adherent to the chest wall over the lower lobe. The adhesions are not very dense and can be readily broken up. In both lungs, in the dependent portions, there are areas of atelectasis. The greater portion of both lungs is well aërated. The heart, pericardium, liver and spleen are not abnormal macroscopically. The bronchial glands are slightly enlarged and grayish-red in color. The mesenteric glands are moderately enlarged and rather opaque and gray in color. On section a few small areas of caseation are found in some of them. The intestines and peritoneum are not abnormal macroscopically. The bladder is thin walled and distended up to the umbilicus with cloudy urine. The autopsy was performed twenty-two hours after death and cultures were not made from the organs.

Microscopic Examination. Portions from various parts of the brain, cord, lungs, liver, spleen and kidney were hardened in Zenker's fluid; mounted in parafin and stained with Unna's polychrome methylene-blue. The changes are chiefly confined to the pia-arachnoid. In the brain and cord there are no noteworthy changes in the sections examined. (No examination of the peripheral nerves was made by the writer.) Sections made from the portions of the brain and cord in which macroscopic evidences of inflammation existed show marked thickening of the meninges due to the formation of young connective tissue. The pus corpuscles and fibrin have disappeared except in some places where there was a somewhat gelatinous exudation macroscopically. In these places the nuclei do not stain and there is more or less granular detritus. In most places the connective-tissue fibres are well formed, the connective-tissue corpuscles are very numerous but are narrow and elongated. In places the mesh-work of connective-tissue fibres is quite dense, in other places it is loose. In the spaces between the fibres are numerous plasma and lymphoid cells. Most of the lymphoid cells are collected in masses in the vicinity of the larger blood-vessels. The large cells which are so numerous in the acute cases have disappeared. Many of the newly-formed blood-vessels have well-marked walls and the endothelial nuclei are becoming much less prominent. In many places it would seem as if some of the newly-formed vessels had disappeared because they are so few in number as compared with other parts of the pia. The changes in the meninges of the cord are mostly on the posterior surface and are of the same character as in the meninges of the brain, but they are not so extensive.

Mild cases begin with the same sudden onset as the other varieties, followed by more or less pain, retraction, stupor, etc. The symptoms subside after two or three days and the patients recover. During the first day or two it may be impossible to determine that the disease is going to pursue a mild course.

Case VI. Male, four years of age. Entered the hospital January 8th. There was no history of a previous illness. The present illness began with headache eleven days before the patient's entrance into the hospital. There was no vomiting. The temperature was not taken. In the afternoon of the same day the child complained of pain in the left arm. At 4 o'clock in the afternoon he was said to have become unconscious and to have remained so until he came to the hospital. This was probably an error in observation because the parents stated that three days later the head was somewhat retracted and he cried when handled, which would not have been the case had he been unconscious. It is probable that there was more or less stupor. The retraction lasted for two or three days, and there was some tremor of the hands at this time. There was no recurrence of acute symptoms after the first four or five days.

A physical examination made January 8th is as follows: "The child is fairly well developed and nourished. The cheeks are flushed. The speech is thick and difficult to understand, but the mental condition is not impaired. There is no retraction of the head, or hyperesthesia. The pupils are equal and react to light. There is no paralysis. The heart and lungs are not abnormal. The abdomen is not retracted. There are evidences of rhachitis in the ribs, epiphyses and shape of the head. There is no albumin in the urine. The temperature is normal."

Lumbar puncture was performed on January 11th and a very slightly cloudy fluid was withdrawn. The fluid contained very few leucocytes and very little fibrin. No organisms were found. Cultures on blood serum remained sterile. The patient was in good condition. The speech was still thick. He sat up in bed much of the time.

On January 16th the speech was much clearer. His appetite was good. On the 20th he walked about the ward and appeared perfectly well. His speech was normal for a child of that age. During his stay in the hospital the temperature remained between 98° and 99° F. The pulse varied from 100 to 120. The respirations for the first four days were slightly increased in frequency and afterwards were normal.

Diagnosis. — The diagnosis of epidemic cerebrospinal meningitis is based upon certain symptoms which are common to all the types of the disease with the exception of certain comparatively rare foudroyant cases. These cases prove fatal in a few hours and the symptoms may resemble those of septicemia or toxemia more than those of meningitis. The diagnostic symptoms are a sudden and often severe onset characterized by headache, vomiting and fever; soon followed by pain and tenderness in the neck and spine; usually more or less retraction and rigidity of the head; general hyperesthesia; mental disturbance varying from apathy to unconsciousness; the occurrence in many cases of an herpetic efflorescence about the mouth or face; a moderate and irregular type of temperature in striking contrast to the severity of the other symptoms. A positive diagnosis can be made by means of lumbar puncture.

Lumbar Puncture. — The fluid obtained is more or less turbid. In severe acute cases, a puriform deposit frequently settles to the bottom of the test-tube in a short time. Microscopic examination of cover-glass preparations made from the sediment shows numerous polymorphonuclear leucocytes, "pus corpuscles," occasional smaller mononuclear lymphoid cells and fibrin. Groups of the diplococcus intracellularis are found in varying numbers in the protoplasm of some of the leucocytes. The cover-glass preparations should be stained with some preparation of methylene-blue, preferably Löffler's, which stains both the nuclei and the organisms. To differentiate the diplococcus intracellularis from other organisms a second cover-glass preparation should be stained by Gram's method. (By this method the intracellular diplococcus becomes decolorized.)

Cultures should be made on blood serum at the time of puncture by allowing one or more cubic centimetres of the spinal fluid to drop into the culture-tube. Care must be taken to prevent the fluid from running down the side of the test-tube at its upper part in order to avoid contamination by wetting the portion of the tube which comes in contact with the cotton. One may fail to obtain a growth of the organism if the puncture is not performed during a period of the disease in which active symptoms are present. After obtaining the fluid in the serum-tube allow it to flow over the surface of the serum and remain in contact with it for a minute or two. In a number of cases in which the organisms were present in the cells and in which active symptoms were also present the writer has failed to obtain cultures by the use of a small platinum loop filled with fluid, because the quantity of fluid was too small.

The macroscopic appearances of the fluid are not to be relied upon in all cases. A very slight admixture of blood will render the fluid turbid; and if sufficient blood is present, a web of fibrin forms in the fluid after standing. Hence it is necessary to make a microscopic examination in all cases. If blood, or bloody fluid appears at the end of the needle it is well to allow the fluid to escape until a clear drop appears. It is rarely necessary to allow more than a cubic centimetre to escape in this way.

Inoculation experiments are, as a rule, unsuccessful. The organism is not pathogenic for guinea-pigs and rabbits. Goats are susceptible to it.

(To be continued.)

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INCREASE OF INTRADURAL PRESSURE IN HEAD INJURIES.[1]

BY W. N. BULLARD, M.D.

Several years ago I drew attention to the fact that an apparent increase of the intracranial pressure occurred in severe injuries of the head, and that the existence of this pressure and of the symptoms to which it gave rise were among the important factors in the determination of the condition in a given case and of the advisability of operation.

Indeed, the determination of the advisability of operation in cases of head injury in which no external signs exist depends very largely on the apparent degree of the intracranial pressure. Further observation and investigation of these cases has only served to confirm the views previously expressed.

I hope to-day to enter more into detail in regard to this condition. The first questions which confront us are, Does this apparent increase in intracranial pressure actually exist? and, if so, where is it situated and what is its cause?

That it does exist is, I believe, fully proved by clinical observation. Certain it is that in most cases of operation (trephining or in any way opening the cranium) that we find a marked tension of the dura, with pulsation of the brain absent or much diminished, and that on cutting or opening the dura this tension is diminished while the pulsation is proportionally increased.

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[1] Read before the Boston Society for Medical Improvement, December 13, 1897.

Such increase of tension existed in many cases which I have personally observed, and may be considered the usual condition found on trephining for head injury.

Formerly increase of intradural pressure after injury to the head was supposed to be due to pressure from a blood-clot. In some cases this is practically the case — the blood-clot, most frequently from the middle meningeal artery, is removed and the cerebral pressure ceases; but there are numerous cases in which the intracranial pressure occurs in connection with head injury in which no blood-clot exists. I wish specially to emphasize this point, as I have seen cases in which the surgeon trephined the cranium on both sides to find the blood-clot, which could not be found and, in my opinion, did not exist. It is not my province to enter into the methods of distinguishing between intracranial pressure due to blood-clot and that form due to other causes. In certain cases they probably cannot be distinguished; but in many cases hemorrhage can be diagnosticated. Intracranial pressure accompanying head injury does not, however, necessarily imply hemorrhage or blood-clot. It often exists without blood-clot.

Can now the intracranial pressure which we see on trephining after a head injury be due to any other cause than the injury?

This question has long seemed to me important. We know but little by direct observation of the intradural pressure in the adult under normal conditions. In infants before the closure of the anterior fontanelle we are often able to form some idea of the condition, but in many cases the thickened dura prevents any accurate knowledge of the degree of pressure beneath. We have, however, definite clinical evidence, or what is generally supposed to be such, of increase of intracranial pressure after head injuries.

Moreover, the amount of intracranial pressure which we directly observe after trephining is greater than we should expect to occur without the production of symptoms.

Is it possible, however, that any temporary or accidental causes may be the active factor in these cases rather than the injury? I have long felt that the influence of ether could not be eliminated; and it was not until I obtained definite, direct observations that I was able to be certain that it did not play an important part.

Last September a male adult was brought into the City Hospital unconscious, with hemorrhage from the right ear and a scalp wound nearly vertical in direction, three and a half inches long above the right mastoid. At the bottom of this wound the bone was exposed, but no fracture was detected. There was an ecchymosis around the right eye.

When seen by me, five hours after admission, he was deeply unconscious. The left pupil was larger than the right. All the limbs were in a condition of total flaccidity, but there was no facial paresis. Knee-jerks slightly increased. There was thought to have been a gradual increase of swelling about the right eye and some protrusion of the eyeball.

Operation was advised, and was performed at once without ether. The incision was lengthened downwards and a fissure was found running antero-posteriorly. On following this forward about an inch, a comminuted fracture with loose pieces of bone appeared. The opening made by the removal of these loose pieces was enlarged by the rongeur. The brain beneath was bright red, not covered by dura, protruded through the opening, and did not pulsate except on pressure. No large clot of blood anywhere.

The patient died later, and the autopsy showed (1) a blood-clot of considerable size over the external surface of the left hemisphere posterior to the frontal lobe and thickest in lower posterior parietal region, (2) destruction of brain substance at site of bone removed (right lower parietal region), (3) that the longitudinal fissure found extended backwards across the right occipital bone passing directly through the torcular Herophili into the left occipital, and anteriorly it ran into the right middle fossa and thence apparently across the sella turcica, and a crack appeared in the left middle fossa. There was an effusion of blood in the right orbit, though no visible crack in the anterior fossa or orbital plate was detected on examination.

In this case, although no ether was given, there was marked tension of the brain, as evidenced by its protrusion through the opening in the cranium. I do not think that this was in any way dependent on the clot over the other hemisphere. On the other hand, such condition is apt to exist in certain cases of contusion. In this case there was some question of alcohol. While it is hardly likely that alcohol played any essential part in the increased brain pressure its influence cannot be wholly excluded.

In the following case the effect of alcohol is excluded. A boy, nine years old, was brought unconscious into the Boston City Hospital with tonic spasm of the left upper extremity. He had an immense antero-posterior extravasation over the whole length of the sagittal suture, and ecchymosis of the right eyelids. There was dilatation of the right pupil; knee-jerks slight. Lower extremities negative.

Operation was performed at once without ether. The sagittal suture was separated throughout its whole length and the longitudinal sinus laid open. There was a transverse fracture of the right frontal bone and a piece of loose bone there was removed. The surgeon trephined over about the middle of the right ascending frontal convolution. The dura was blue and very tense. On opening it the brain protruded perhaps as much as two inches. The protruding portion of the brain was contused and disintegrated. There were no large clots beneath the dura. Bubbles of air came through the trephine hole, suggesting fracture of the ethmoid.

In both these cases in which no ether was used there was contusion and disintegration of the brain substance; and in such cases we are apt to have — as in the last described — a marked brain pressure and protrusion when the opportunity exists.

It seems, however, fair to assume that the ether is not the cause of the increase of intradural pressure in the ordinary case of head injury, as it certainly was not in these two cases. Alcohol as a cause can also be excluded in a considerable number of cases. We are therefore compelled to assume that the increase in intradural pressure is due to the injury directly, as the clinical symptoms imply.

The pathological condition which exists in these cases is apparantly a swelling of the brain itself, due in part perhaps to a filling and dilatation of its blood-vessels, in part to an edema of the cerebral tissue resulting therefrom, and in part also in some cases to an excess of fluid between the pia and the dura. This latter, which has been referred to by Dr. Walton in his interesting paper read before the American Neurological Association at its last meeting, occurs in certain cases but not in all those in which intradural pressure exists.

The following cases illustrate this form of intradural pressure.

Male, thirty years old, was struck a glancing blow on the head one morning with a hammer. This occurred seventy miles from Boston. He came to Boston by train, ate a good dinner and a moderate supper, and after supper came to the hospital as an out-patient. Was seen about 9.30 P. M. There was a depression about three inches across, just to the left of the sagittal suture and immediately posterior to the coronal suture. No symptoms.

Operation immediate. Depression found in region described, with several radiating fissures. Trephined, and depressed fragments raised. Longitudinal sinus not injured. Dura did not pulsate. On puncture of dura considerable clear fluid escaped. Recovered without symptoms.

Male, eleven years old, was injured by an electric car. A large portion of the left scalp was torn back, and two fissures were plainly visible in the cranium, one running vertically through the left parietal bone just posterior to the vertical plane which passes through the anterior edge of the pinna; the other running horizontally forwards about two inches above the base of the cranium. The bone posterior to the vertical fissure was depressed, and ran under the edge of the anterior fragment. The bone above the horizontal fissure was slightly depressed. Blood oozed through both fissures; there was no hemorrhage from the ear. Patient was unconscious. No paralysis. No pressure symptoms. No decided difference in size of pupils.

Operation under ether. Trephined just posterior to vertical fissure. No clot. Dura bluish, tense, does not pulsate. On incision of dura, no clot; considerable cerebro-spinal fluid escaped.

I wish in passing to draw attention to the fact that there were no clinical symptoms of intradural pressure in this case in spite of the increase in the subdural or arachnoid fluid.

I am personally convinced, however, that the excess of subdural fluid is not alone the cause of the pressure symptoms in cases of head injuries.

(1) The increase in the amount of this fluid is, in many cases, not very great or even not apparent.

(2) It is shown by the tension and protrusion of the brain after the dura has been cut that the intradural pressure, as it still exists, was not in large part due to the fluid which has escaped.

(3) I have seen cases in which the pressure of the subdural fluid was very much greater than any shown in the ordinary cases of head injury with pressure symptoms — so great that when the dura was cut the fluid spurted, and, yet, there were clinically no general pressure symptoms. The following cases illustrate these points:

A female, age fifty-two, fell from an electric car. Was admitted to the hospital shortly after. Conscious; pupils equal; no paralysis anywhere. There was a depression of the cranium in the right temporal region. The surgeon trephined in this region, the operation being done under ether. No extradural clot. The dura was tense and scarcely pulsated. On cutting the dura the brain bulged. No excess of cerebro-spinal fluid noted. Recovered well and quickly.

This is the ordinary condition, in my experience, in those cases of intradural pressure due to head injury in which no clot exists and there is no serious brain injury.

A male, eleven years old, fell down the subway and received a fracture of the frontal bone, with depression of a portion thereof. Was operated upon under ether on the fourth day after the accident. He then had an acute pachymeningitis. The dura was incised; no excess of subdural fluid noted, no subdural clot.

If, then, the cause of the increase of intradural pressure in head injuries in which no clot exists is not due wholly, or even in large part, to the excess of subdural fluid, to what may we consider it due? There is no doubt that it is, at least in part, the result of the congestion of the intracranial blood-vessels, either directly or indirectly. This is apparent, not only from direct observation and also from the fact that in no other way can we account for the rapid changes of the intradural pressure which are so often observed, but also from those cases (and they are not rare) in which after head injury intradural pressure does not occur. These are an extremely interesting class of cases, and I hope at some future time to be able to consider them in detail. I will only say here that I feel certain that in these cases the absence of increase of intradural pressure is (with rare exceptions to be noted later) due to hemorrhage, whether with or without clot formation. The relief of the congestion of the intracranial vessels causes the bulging brain to sink and the pulsation to reappear.

The opposite is the case when, as I have seen, on tying an intracranial artery or stopping a hemorrhage, the brain which has been sunken and pulsating feebly, at once or shortly begins to swell and the pulsations to become more strong.

Cases might easily be reported illustrating these points, but at the present moment this seems hardly advisable.

SUMMARY.

(1) An abnormal increase in the intradural pressure often occurs as an accompaniment or result of severe head injuries, where no large clot exists.

(2) This intradural pressure may be in part due to an excess in the amount of subdural fluid. This, however, is, as a rule, not the chief element in the intradural pressure which is principally due to the bulging of the brain itself.

(3) The cause of this intradural pressure is apparently a congestion or filling of the intracranial blood-vessels and the results thereof.

A Warning to Obstetricians. — Don't count your chickens before they are hatched. How Dr. Brickett lost his fee and ten dollars besides. When he was living in China, before the war, he was called to attend a case of confinement in Palermo. After being at the bedside a few moments a child was born. It looked rather small and the doctor remarked, "Mrs. Blank, if you have another one I won't charge any fee." In about twenty minutes another child was born (No. 2). Then the doctor said, "Mrs. Blank, if you have another I will make you a present of ten dollars." In less than half an hour another child was born (No. 3).

A DIFFERENTIAL DIAGNOSIS OF EMPYEMA OF THE ACCESSORY CAVITIES OF THE NOSE BY INTERNAL EXAMINATION.

BY ROCKWELL A. COFFIN, M.D.,
Assistant to the Physicians in the Throat Department of the Boston City Hospital.

It is not the intention of this paper to introduce many new methods of examining any one cavity, but rather to combine certain methods used in some clinics of Europe in a way to enable one familiar with the anatomy of the nose and its surrounding parts to make a positive diagnosis regarding the involvement of one or all cavities in empyema.

In order to simplify this method as much as possible, we will take, as example, a patient presenting himself with a discharge of pus from one side of the nose.

It is important to examine the nose to make sure there is no foreign body present, and this may be done by use of the speculum and probe.

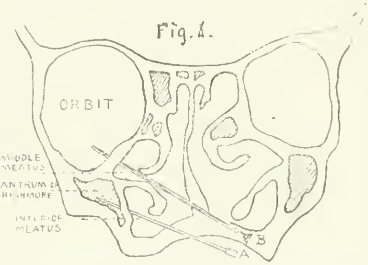
Fig. 1.

Section through the nose, showing needle (B) entering orbital cavity through middle meatus when the lateral wall slopes outward.
A, shows needle entering the antrum through inferior meatus.
Outline: Zuckerkandl, Anatomie der Nasenhöhle.

When we look into the nose we find the nasal cavity more or less covered with pus of a whitish or yellowish appearance. After syringing or wiping away all the pus we wait about ten minutes to see if pus again makes its appearance; and if no pus appears, a five-per-cent. solution of cocaine is now applied to the middle turbinate and middle meatus in order to make the nose more spacious and produce anesthesia.

If the patient, while in the sitting position, allows the head to rest on a table or stool about twenty inches high, with the affected side of the head uppermost, the pus may flow out of the natural opening of the antrum and sometimes from the anterior ethmoidal cells, but not from the frontal cavity.

Now, with pus under the middle turbinate body, we consider first the antrum. The parts must always be kept shrunken with cocaine. Having cleaned the nasal cavity of pus, we now try to introduce a small silver canula through the normal opening of the antrum. It is well to remember, in case we cannot enter through the normal opening, that it is sometimes very easy, as Hajek has demonstrated in his clinic in Vienna, to gain entrance through an abnormal opening which almost always exists lower, when present at all. In case we cannot in this way penetrate the antrum, the "experimental puncture" should be made. Certainly the easiest place to do this is in the middle meatus, the wall here being mostly cartilage, but there is much danger of puncturing the orbital cavity (Fig. 1), especially if the lateral walls of the nose slope outward. I much prefer the inferior meatus on account of safety, even though one must go through a thicker bony wall. Transillumination, as a means of diagnosis, is sometimes of use, but I think it can be relied on only in certain cases.

Now, having introduced either the canula through the normal opening, or the puncture needle into the cavity, we can syringe the cavity. As the nostril has been previously cleaned, the pus coming out with the water can proceed only from the antrum.

Having cleaned the antrum, two cavities remain, which open under the middle turbinated bone, namely, the anterior ethmoidal cells and frontal sinus.

Next we try to introduce the hollow probe into the natural opening of the anterior ethmoidal cells, and, if we can do so, we may proceed as in the case of the antrum and syringe it. The existence or non-existence of pus in the water gives a diagnosis for the anterior cells; and, if pus still appears in the middle meatus, it can come from no other cavity than the frontal.

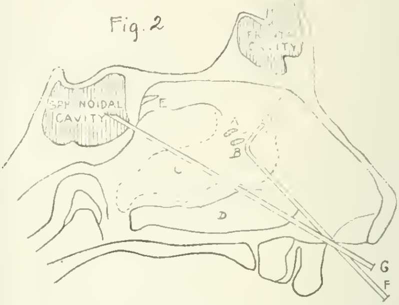
Fig. 2

C, Middle turbinate, removed to show hiatus semilunaris, openings to antrum and anterior ethemoidal cells.
D, Lower turbinate.
F, Position of bent probe entering hiatus semilunaris.
G, Straight puncture needle going over middle of middle turbinate and entering sphenoidal cavity.
H, Hiatus semilunaris leading to frontal cavity.
Outline: Zuckerkandl.

In case we cannot find the opening of the anterior ethmoidal cells, we should try to insert the probe into the opening leading to the frontal cavity, using the hiatus semilunaris as a guide (Fig. 2, H F), the attempt, however, is rarely successful.

In order to facilitate matters, we may remove the anterior end of the middle turbinate by means of the cold wire snare or double curette. In this way it is not difficult, with the proper bend of the probe, to enter the opening. We can now syringe the cavity, which gives a positive result, as before.

Now, with any two cavities free from pus, it is necessary only to wait to see if there is still a discharge of pus under the middle turbinate bone, in which case we know it must come from the cavity which has not been washed out.

All cavities having an opening under the middle turbinate are now diagnosed, and we look to see if pus is coming down over the middle turbinate, or if it is present high up in the olfactory fissure, and we likewise examine with the posterior rhinoscope mirror to see if pus is making its way backwards over the turbinated bones into the naso-pharynx, as often happens. If pus is seen in the olfactory fissure or flowing backwards into the naso-pharnyx, we must consider the possibility of an involvement of a sphenoidal cavity or of the posterior ethmoidal cells. Empyema of these cavities is fortunately uncommon. Very rarely, indeed, can the natural opening of the sphenoidal cavity be seen, and then only in an exceptionally spacious nose in a state of extreme atrophy. When the opening can be seen of course the diagnosis is very easy. One needs only to bend the patient's head forward for a few moments when the pus, if there, will be seen at the opening; if it is too thick to run, we should use the syringe, as in the other cavities. Unfortunately, however, in most cases there is only a very narrow space to work in; therefore we must, by the use of landmarks, try to introduce the small canula into the opening.

I find by directing the puncture needle upwards and backwards, using the floor of the nose anteriorly as a rest and going over the middle turbinate a little posterior to its centre, one is more apt to come into the natural opening or strike the anterior wall of the sphenoidal cavity (Fig. 2, G).

Having now determined whether there is an empyema of the sphenoidal cavity or not by syringing, we have only to wait a few moments to see pus appear in the olfactory fissure if it is present in the post-ethmoidal cells.

A cavity may, of course, be congenitally absent as also there may be abnormal openings between the various cavities. For instance, we may have a communication between the two frontal, the frontal and ethmoidal, or anterior ethmoidal and antrum. In rare cases the dividing wall between the two sphenoidal cavities may be wanting.

When disease is suspected in more than one cavity, it is difficult to make a diagnosis in one sitting. It requires unlimited patience and perseverance to be sure of the diagnosis of the cavities above the antrum.

Sometimes the middle turbinate folds over on itself and forms a cavity within itself, but we can readily ascertain if this is the case by the use of a probe and by the removal of the anterior end of the middle turbinate.

I do not consider that headache localized in any one part of the head can serve as a guide to the cavity involved, as we often see cases of antrum disease with the pain located in the frontal region, or ethmoidal disease with pain in the same place. Therefore, while headache is suggestive of cavity disease it cannot be depended on for the diagnosis of any particular cavity.

By adhering as closely as possible to the internal examination of the nose a much more accurate diagnosis can be made.

The Treatment of Burns by Picric Acid. — It is now nearly two years since, as was noted in our columns, the treatment of burns by picric acid was advocated in certain French medical journals. At a recent meeting of the French Surgical Society Walther stated that this remedy may produce in children symptoms of acute poisoning; moreover, it frequently causes so much pain that its use has to be abandoned. Others had seen untoward and even fatal results follow its use and the general consensus of opinion was that while it might be used with benefit in superficial burns, as it often instantly relieved the pain, in deep burns, its use was contraindicated.

Clinical Department.

THE STERILIZATION OF CATGUT.

BY FARRAR COBB, M.D.,
Surgeon to Out-patients at the Carney Hospital and at St. Elizabeth's Hospital, Boston.

In the opinion of a large number of surgeons, non-absorbable ligatures and buried sutures should be seldom used, but many operators still adhere to the use of silk because of their uncertainty in regard to obtaining perfectly sterile catgut and animal tendon. The use of the commercial "sterile" catgut, furnished by many firms, cannot be too strongly condemned. While much of it may be sterile, it can never be depended upon. All suture and ligature material should be prepared by the operator or his trained assistants.

In the experience of the writer, catgut and animal tendon can be rendered sterile with the expenditure of but little time and trouble.

The methods of preparing both plain and chromicized gut detailed here are easy of execution, and have been proved by practical use in the operations of Dr. W. M. Conant, as well as those of the writer, and also by careful bacteriological experiments, to be entirely reliable. I am led to publish them by the hope that they may be of some practical service to others.

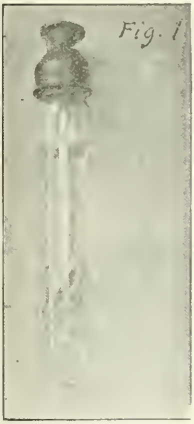
Fig. 1

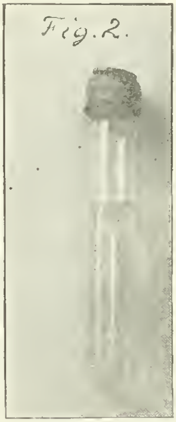
Fig. 2.

The method of sterilizing the plain or unchromicized gut and animal tendon is as follows: The crude gut in coils or strands is placed in a solution of bichloride of mercury in stronger ether, of the strength of 1 to 1,000. It is allowed to soak in this solution for ten days. It is then wound on sterilized glass spools or rods and boiled in 95 per cent. alcohol for twenty-five minutes. This process of boiling in alcohol is rendered easy and safe by the use of Bohemian glass tubes, fitted with the rubber caps invented by Professor Stutzer of Germany. These tubes and rubber caps can be obtained from the Kny-Scheerer Company of New York. The rubber caps fit tightly over the top of the tubes. In the top of the rubber cap is a small slit which allows the escape of air and a certain amount of alcohol vapor at the beginning of the boiling. At the conclusion of the boiling, when the alcohol cools, a vacuum forms above it in the tube, and atmospheric pressure forces down the elongated neck of the rubber cap, automatically and hermetically sealing the tube. By means of these tubes placed in boiling water, this usually troublesome process is made extremely simple. In Fig. 1 is shown the tube and cap before boiling. In Fig. 2 is shown the appearance of the cap after being forced down by atmospheric pressure.

The method of preparing chromicized catgut is one by which it may be boiled in water, for one-half or three-quarters of an hour. This method is a modification of that used by Champlin, of Chicago. Its important point is the addition of formalin to the bichromate of potash solution, which renders the boiling in water possible. The crude gut is soaked in ether corrosive (1 to 1,000), as in the preparation of the plain gut. It is then removed and exposed to the air a short time to allow the escape of the ether, after which, while still in coils, it is transferred to a mixture of bichromate of potash, 2 parts, formalin (40 per cent.), 4 parts, water, 94 parts. It is allowed to soak in this mixture four days, after which it is removed and the excess of the bichromate and formalin solution washed off by running water. It is then wound on glass spools and boiled in water for thirty or forty minutes. It is stored in sterilized glass jars in 95 per cent. alcohol.

The boiling in water does not weaken or injure the gut in any way, it is strong and pliable.

Careful bacteriological tests have shown it to be absolutely sterile.

Medical Progress.

PROGRESS IN LEGAL MEDICINE.

BY EDWIN W. DWIGHT, M.D., BOSTON.

THE TREATMENT OF DISEASE BY ANIMAL EXTRACTS.

FROM *La Semaine Médicale* we learn that the government of Bosnia and Herzegovania has made the use of antitoxin compulsory, both in the treatment of diphtheria and as a preventative in epidemics.

In the *Journal of the American Medical Association* (February 19, 1897) is published a paper by Dr. C. H. Preston, read before the Contemporary Club of Davenport, Io., entitled "Medicine and the State," in which the author calls the attention of his hearers and the public generally to the importance of suitable supervision, "by the State," of the manufacture of "the various potent animal products, to which the rapid growth of so-called serum-therapy is constantly giving rise."

Dr. Preston has given the subject considerable thought and corresponded freely with the authorities in various States, and quotes from the secretaries of the various State boards of health, including our own, as to the existing absence of control, and the advisability of such supervision and control by the boards of health. The subject is not one which apparently needs much argument, and it is rather surprising that, in these days of prolific legislative bodies, some action has not been taken on it before.

There is probably no class of experimental work that is arousing more interest at this time than treatment of disease by means of animal extracts, toxins and antitoxins. Some, as the antitoxin of diphtheria, have been clearly demonstrated to be of the highest value, both as a preventative, and in the treatment of the disease. In other diseases, as rabies, tetanus and tuberculosis, this treatment is still in the experimental stage; but the results, as published, warrant us in the belief that within a reasonable time they, too, will have lost much of their terror.

Those who have used most these various "animal products" have the fullest appreciation of the importance of their careful and reliable preparation, and the dangers which are associated with the use of those, which, by reason of irregularity in their strength, contamination, or the presence of bacteria, become vehicles of destruction rather than weapons of defence.

Fortunately, up to the present time, this method of treatment is experimental, and the solutions used for the purpose are manufactured either by the experimenter, or by others equally scientific and equally interested in the success of the experiment. When the experimental stage has been passed, and by reason of increased demands and common use these substances become of commercial importance, the conditions will change; with competition will come increased temptation towards carelessness in manufacture, and much added danger to those who will be exposed, by reason of this carelessness, to serious if not fatal termination of such treatment.

We all know with what readiness a line of treatment may fall into bad repute, as the result of a few unfortunate results. It would indeed be unfortunate if progress along the broad lines of serum-therapy should be hindered by such accidents, especially if it lies within our power to remove the probability before we have to do with the reality. Is not now the time, before the example of Bosnia and Herzegovania is generally followed, to take such steps as will at least reduce to its least proportions this probability of danger which lies at our door?

THE CAUSE OF DEATH FROM ELECTRIC SHOCKS.

In these days, in which electricity is coming more and more into everyday use; in which, after an accident, the first thought is frequently, if not usually, as to who is responsible and from whom may financial compensation be received; and in which the association of electricity and civil suits is of common occurrence, the results of the experiments of Oliver and Bolan, carried on during the past year, and published in the *British Medical Journal* (January 15, 1898), are of considerable interest. These experiments have been made with a view of ascertaining the cause of death after electric shocks, and the report includes a large amount of research into the effect upon animals of the alternating current in varying doses. The paper is illustrated by a number of records of the blood-pressure, pulse and respiration of animals; before, during and after the application of the alternating current of varying voltage.

They conclude as follows: "When an animal is exposed to electric currents of sufficiently high potential, death is practically speaking instantaneous. The animal is thrown into opisthotonos, during which breathing is suspended, and the heart's action momentarily quickened, and then arrested; if the current is strong enough it is stopped at once. On shutting off the current there occurs a deep inspiration, usually followed by an expiratory cry. This has often been noted by workmen when one of their number has suffered a serious accident, and by it their attention is called to one who is found dead as the result of electric shock. Dogs through which an electric current has been passed may, on breaking the current, not only breathe spontaneously and rhythmically for several seconds — even a minute or two — but bark loudly; and yet all the time the heart has ceased to beat. In a few experiments death has been due to contemporaneous cessation of the action of the heart and lungs. Primary cessation of the heart's beat is, without doubt, the general rule; while under no circumstances have we succeeded in causing primary arrest of respiration, followed by failure of the heart."

They also report the testimony of workmen employed in electric generating stations; who say that it is usual for men killed by electric shock to breathe a few times after life is otherwise apparently extinct.

From the facts within their knowledge they conclude that death in the "electric chair" must be instantaneous and without pain.

The results of these experiments are interesting in a number of ways. They throw some light on those cases in which, after what is apparently instantaneous death as the result of a powerful electric shock, suit is brought for "conscious pain and suffering," based upon the account of one or more cries from the victim, associated with respiration, more or less marked for an appreciable length of time. In a number of such cases, very considerable amounts have been recovered, the juries being, not unnaturally, impressed with the belief that a distinct cry, followed by more or less natural respirations for several seconds or minutes, would point towards distinctly conscious suffering. If these experiments be accepted, we must believe that it is probable that a number of such cases are those of practically instantaneous death.

EXPERT TESTIMONY.

While it is not possible at this time to report any decisive action as having taken place, in the line of improvement in the character of "Expert Testimony," as given in our courts, or in the system which governs such testimony, it is possible to report progress in the discussion of the subject. During the past year, a great deal has been said and written on the subject, and it is noted with pleasure that there appears less difference of opinion than has been apparent before.

In the *Boston Medical and Surgical Journal*, of January 7, February 11, September 23 and November 11, 1897, appear editorials which very accurately and fully cover the present state of medical opinion, as expressed during the past year.

Action has been taken, and committees appointed, by the Councillors of the Massachusetts Medical Society, the Medico-Legal Society and the Boston Medico-Psychological Society, for the purpose of coöperating "with the committees chosen by other associations, legal and medical, to promote legislation for the amendment of the methods in vogue relative to the use of expert witnesses."

A "proposed law" has been drawn up by Regent Foster, Esq., of New York City, providing that, "on application of either party, and after reasonable notice and hearing," the court may call one or more skilled experts, who may be examined by either party or the court.

In the very interesting paper, "On the Duties of a Medical Examiner," read before the Massachusetts Medico-Legal Society, February 3, 1897 (*Boston Medical and Surgical Journal*, April 8, 1897), by the Attorney-General of Massachusetts, the same subject is touched upon, and "the almost inevitable and often unconscious tendency of experts to help the side that calls them" is spoken of. That such unfortunate conditions exist we all know, and that it is the system rather than the individual that is at fault is becoming more and more recognized. It is to be hoped that during the present year some change for the better in that system may be chronicled.

While the system still remains at fault, we are fortunate in being able to call attention to a very interesting example of what it is possible to accomplish, even under the present unfortunate conditions. In an article entitled "Medical Expert Testimony in the Kelley Murder Trial" (*American Journal of Insanity*, January, 1898), Dr. Walter Channing reports a case in which the methods in use and the results accomplished are most unusual, if not entirely unique. The account given by Dr. Channing is replete with interest; but the points which stands out with the greatest prominence are:

(1) That by means of the opportunities offered them the three experts for the State and the three for the defence were enabled to arrive at an "unanimous opinion," in a case which presented a number of unusual difficulties.

(2) That in this case, for the first time, the question of "limited responsibility," as the result of a lack of development, is recognized, not only by the experts, but by the prosecuting attorney and the court as well.

(3) That from the absence of the "hypothetical question" and the use of methods which enabled the various experts to arrive at a fair conclusion, and to so express it upon the witness stand, they were each able to leave it "feeling that he still had some self-respect remaining, and had not unwittingly stultified himself in giving his opinion."

While Dr. Channing is able to point out a number of details in which the opportunities for examination of Kelley might have been improved, it is evident that he was much impressed by the value of expert testimony obtained and presented as it was in this case over the methods which usually obtain in trials of this class.

The unanimity of opinion displayed by the experts and accepted by the court is of especial interest, inasmuch as the conclusions reached were not such as have been ordinarily accepted by the prosecution. These conclusions, as to character and degree of responsibility, Dr. Channing gives as follows:

"It was apparent that he was not the subject of any form of insanity, but it was equally apparent that he was quite unlike the ordinary young man of twenty-three. While he had a quick, wide-awake way of taking things in and some degree of so-called smartness, he had no maturity of judgment. His lack of moral sense was, however, the most striking indication he presented of an undeveloped mind and character. The conclusion was inevitable that he was a degenerate with congenital or acquired criminal instincts."

In the same number of the *American Journal of*

Insanity appears an article on "Modified Responsibility," by Allison, in the course of which he says: "The fact that such defectives often possess proclivities for committing unlawful acts may show simply a lack of educational advantages, and is not necessarily indicative of ingrained criminal traits. They are governed largely by habit and can easily be trained. When such cases come before the criminal courts they only forcibly illustrate what the medical profession, and especially the alienist, has long advocated, namely, that the status of the individual should be carefully considered in examining every problem of crime. The personality of the man should weigh largely as a factor in determining what disposition to make of him; whether to commit him to an educational institution, to a reformatory, or to a hospital for the insane. At the same time there should be secured the greatest personal liberty of the individual consistent with the reasonable safety of society, otherwise our charitable and penal institutions will become vast receptacles, filled with an overflowing population without educational advantages or reformatory influences and destined to increase the evil they seek to remedy."

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, December 13, 1897, Dr. A. L. Mason in the chair.

Dr. W. N. Bullard read a paper on

THE INCREASE OF INTRADURAL PRESSURE IN HEAD INJURIES.[1]

Dr. H. W. Cushing: I can add little to Dr. Bullard's accurate and graphic description. My personal observation corroborates fully what he has said. I have found, while operating, the condition he reports, but do not know its cause. I have not met at any autopsy I have witnessed lesions which I thought explained the intracranial condition.

Dr. Prince: One or two thoughts have suggested themselves to me apropos of this subject. That the condition of affairs which Dr. Bullard described is frequently present I suppose all of us have seen; but it has occurred to me whether, after all, there might not be a possible fallacy in our acceptation of the idea of intracranial pressure. It is perfectly true, as he says, that on opening the brain after such conditions as he describes, the brain bulges and it does not pulsate, and after opening the dura it recedes and begins to pulsate. Passing by the point I was going to make first, and going to another point, it seems to me, if this is looked upon as an abnormal intracranial pressure, the explanation Dr. Bullard has offered is the only possible or probable explanation, because, as he says, if this increase of pressure is due to increase of cerebro-spinal fluid or edema, it would seem to be impossible that the pressure should cease within a few minutes after opening the dura, therefore it must be due to circulatory disturbance; and if Dr. Bullard would add increased active circulation as well as passive — [Dr. Bullard: That is included.] — I should think it would thoroughly cover it. On the other hand, there is this possible fallacy: How do we know that this really does mean increased pressure, meaning by that an increased pressure over that which exists normally in the brain? No one has ever looked into the normal brain, into a skull not opened; and it seems to me it is very possible this condition of affairs may exist under normal conditions; that is to say, there may be a sufficient pressure, but still within physiological limits, to squeeze the brain against the surface of the skull and then stop all visible pulsation; in other words, if this pressure is due to the active circulation, may it not be due to that forcible action of the heart which so frequently does occur in head injuries and which is known as the pressure pulse? May it not be due simply to the increased action of the heart? and if so, may not that same increased action of the heart which occurs under other circumstances produce that same condition? Therefore the question would not be whether it was increased pressure, but whether it was abnormal pressure. On the other hand, the other thought has occurred to me: if this is the correct interpretation that Dr. Bullard has given, perhaps this increased pressure may be the cause of some of those unexpected endings, of death occurring in head injuries after trephining where there seemed to be no reason for death to occur.

But, however all this may be, there are other and more important conditions that must be considered that possibly may be factors in absent pulsation besides pressure. As I understand the reader, absent pulsation always means pressure, even in those cases where there is no local condition like a tumor or hemorrhage to cause it. So that whenever absent pulsation is observed we may conclude there is increased pressure from some cause. This opinion is certainly in line with the views of such surgeons as I have heard express themselves on the subject. But I am inclined to think that this conclusion can hardly with safety be drawn.

The point I wish to make is this: Before we can conclude that the absence of pulsation always means abnormal pressure on the brain we must exclude every other possibility, and it seems to me that the absence of pulsation may be due to other possibilities which must be considered. In injuries of this kind every possible causative factor must be considered. To appreciate this we must ask, What is the pulsation of the brain as a physical phenomenon? The answer is that it is a rhythmical increase and diminution of the brain substance due to the filling of its arterial vessels with blood. It is substantially the same phenomenon that occurs in any spongy or erectile body, though it is of less magnitude. This increase in volume is undeniably due to the fact that the blood enters at certain intervals of time the arteries in greater volume and rapidity than it discharges itself by the veins; and whenever this is the case there must always be a pulsation, no matter what the tissue. But, on the other hand, this pulsation may not necessarily be visible to the naked eye. The pulsation is exactly the same in kind as that which occurs in the finger or hand. Here, we know, as shown by the plethysmograph, there is always pulsation, but it cannot be detected without apparatus. With the plethysmograph graphic tracings may be made similar to those obtained from an artery. Now exactly the same conditions must exist in the brain; so long as the blood enters with greater volume and rapidity than it is discharged there must be pulsation. But it does not follow that it must be visible pulsation.

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[1] See page 271 of the Journal.

Now, in practice, when we speak of pulsation of the brain, we mean *visible* pulsation, not physiological pulsation. This distinction is important, for it has not at all been demonstrated that in the unopened skull a swelling of the brain of sufficient magnitude occurs with each systole of the heart to make a *visible* pulsation. It is possible — I do not say it is a fact — that the pulsations may not be of this amplitude (any more than they are of this amplitude in the forearm), and that they only become visible on opening the cranium and relieving the brain of its constricting mantle. If this is the case, the absence of visible pulsation at the moment of opening the cranium and dura *may* not be a pathological pheomenon, and therefore may not necessarily indicate abnormal pressure.

But, again, even if this objection cannot be sustained, I think that even if visible pulsations always occur physiologically in the brain, it has not yet been demonstrated that the absence of pulsation necessarily means pressure. If we keep in mind the mechanism of pulsation, it becomes plainly evident that anything that diminishes the arterial inflow of blood and reduces the volume — velocity — to that of the outflow in the veins must stop physiological pulsation, and visible pulsation would cease when the diminution of inflow reached a certain point. Hence it is plain that theoretically this might be brought about by a number of causes.

(1) For instance, it is conceivable that diminished cardiac action might sufficiently reduce the inflow.

(2) A thrombosis of a main artery like the middle cerebral, or a local constriction thereof, as from a small blood-clot at the base, might so stop the circulation through the artery as to stop pulsation in the convolutions at some distance from the point of constriction. Such blood-clots are not uncommon in fractures of the skull, being formed by gravitation of the blood to the base. Whether or not vaso-motor influences could stop visible pulsation is still more uncertain.

Now all I mean to say is, that there are possibilities which must be considered before coming to a positive conclusion in an injury of this kind.

Dr. Walton: Having been unfortunately prevented from hearing Dr. Bullard's paper, I do not know how much stress he has laid on the different factors producing intracranial pressure after trauma. I assume that he has alluded to serous as well as sanguineous effusion. Dr. Bullard himself was, I think, the first to call attention to the former element as increasing the area of paralysis in cases of hemorrhage. The justice of his view was impressed upon me very forcibly in a recent operation performed by Dr. Burrell on a case of Dr. Morrison's of unilateral cortical hemorrhage after a fall upon the head. The paralysis involved the arm and leg, if I remember rightly, as well as the face; on removing a button over the area indicated the dura was found tensely bulging and its incision was followed by a gush of serous fluid. The brain at this point was not lacerated, but congested. The hemorrhage itself was reached only after extending the opening downward by rongeur forceps. It was impossible to catch enough of this fluid for analysis to determine whether it partook of the nature simply of cerebro-spinal fluid, or of a serous exudation.

In a paper read at the last meeting of the American Neurological Association, I described several cases in which local accumulation of serous fluid in the subarachnoid space was the only satisfactory explanation for local paralysis following blows upon the head with complete recovery in a few days, that is, in the time required for the absorption of such fluid. I assume that this accumulation of fluid has something of the character of a blister of the cuticle. Owing to the lack of unanimity in nomenclature, it may not be out of place to describe the cavity designated sub-arachnoid space. It is an established fact that beneath the dura a delicate membrane covers the brain, closely adherent to the summits of the convolutions and bridging over the sulci. In the meshes between this membrane and the pia proper (which follows the surface of the brain into the sulci) the cerebro-spinal fluid is for the most part collected, and this space may be properly designated the sub-arachnoid space.

That a local accumulation of fluid may be imprisoned in this space is shown by the case of McEwen, in which irrigation was followed by a local paralysis lasting four days. Such fluid has also been demonstrated by operation, notably in my own experience in a case reported by Dr. W. A. Brooks, Jr., and myself last winter.

It is not improbable that many of the apoplectiform attacks in general paralysis, and other conditions of cortical vascular disturbance, may be due to such accumulations; this assumption certainly explains the rapid disappearance of symptoms in many of these cases far more satisfactorily than the assumption that we have to do with either a hemorrhage, embolus, or thrombus, and it seems to me that this possible pathological diagnosis should be borne in mind in all cases of moderate apoplectiform seizure.

The practical bearing of this knowledge is in the direction of postponing operation in traumatic monoplegias, if symptoms do not deepen, allowing thus a few days for the absorption of serous exudation. This is perhaps especially important in young people and alcoholics. The rapid appearance of symptoms from such a lesion need not surprise us when we realize the rapidity with which an ordinary blister is formed.

Apart from these cases of local paralysis after trauma, we not infrequently see cases in which a severe blow upon the head is followed by symptoms of general concussion, but without the rapid recovery following simple concussion. In such cases mental sluggishness, discomfort, with more or less restlessness, slight rise of temperature and perhaps moderate delirium persist for some time. Sluggish pupils and diminution of knee-jerk are apt to be present. In such cases we must remember that in addition to the bruising, minute hemorrhages and possible laceration, we may have to do with a more or less congested cortex accompanied by serous exudation under the arachnoid. I have seen a number of such cases through the courtesy of the surgeons at the Massachusetts General Hospital. As an illustration, I will mention one seen, I think, with Dr. Warren. This young man was brought to the accident room with a history of having been taken up on the pilot of a locomotive. He had a temperature of 99.6°, pulse of 68. There were slight bruises on the trunk and legs, and a small superficial scalp wound at the vertex, but no evidence of fracture of the skull. There was no paralysis, but the pupils were sluggish, the knee-jerk wanting, and he was roused with difficulty. The next day the temperature was still slightly elevated. Three days after he could be roused, but did not answer questions, and was somewhat restless. The knee-jerk was now absent on the right and very slight on the left. Six days later there was marked improvement, the knee-jerk was present and practically alike in the two limbs, though still moderate. The pupils were then alike, rather large and reacted perfectly.

The usual outcome in such cases is gradual return to the normal condition, recovery being often protracted, however, even after the symptoms of pressure have passed away. A number of months must usually be allowed for the complete return of mental balance and capacity for brain work. A hysteroid condition is not unlikely to persist for some time in young people. Too early attempts at resuming occupation are to be discouraged.

DR. KNAPP: I think we are indebted to Dr. Bullard for the long series of researches which he has made on this subject. I have, of course, seen a considerable number of cases in which this condition either existed or was distinctly to be suspected, where the increased intradural pressure was due probably to a serous effusion. In the majority of cases, however, that I have seen, where the diagnosis could be confirmed either by the autopsy or by operation, there has been something more than serous effusion, either laceration and contusion of the brain substance or else distinctly a hemorrhage somewhere within the brain. Those cases have in my experience been more frequent than the cases of serous effusion in which an autopsy or operation permitted distinct proof.

I must confess I am a little unable to understand Dr. Prince's hypothesis in regard to the cerebral circulation and it is a little hard to imagine a condition of intracranial pressure so great as to force the brain cortex against the skull, and subdue all pulsation therein in the normal healthy state. It interferes somewhat with our ideas of cerebral physiology, and I would recommend to Dr. Prince some careful studies by Mosso on cerebral circulation which I think throw a little light upon the subject.

I should like to ask Dr. Bullard whether, in these cases of marked increased intradural pressure, which he has explained by increased congestion of the brain substance, or an edema of the brain substance, he would eliminate entirely the question of an increased amount of ventricular fluid, — whether that may not also be a factor to be borne in mind in this increase?

DR. BULLARD: In the cases I have seen where the ventricle has been tapped there has not been an increase of fluid. This is also true of the autopsies. In regard to what Dr. Prince said, I don't think there is any reason to suppose any increase in the pulse — he speaks of strong pulse — is at all likely to produce intracranial pressure to such degree as we see it in these cases. It has been the view of the profession for many years that the symptoms of unconsciousness, coma, etc., occurring under such circumstances were due to pressure. It seems to me all the probability lies in that direction. The autopsy does not show very much in these conditions and in the same way that we do not find congestion of other parts of the body so we do not find it in the brain. We do not find in the brain in these cases sufficient cause of death. We find fracture of the bone or a small hemorrhage, but neither the fracture of the bone nor the small hemorrhage are sufficient of themselves to cause death. Exactly how death is caused is not evident.

DR. C. H. WILLIAMS: I should like to ask whether an ophthalmoscopic examination of the fundus was made? In cases of intracranial pressure from brain tumor of longer duration we often get marked changes, but it would be quite interesting to know whether in these acute forms there was any marked difference in the retinal circulation.

DR. PRINCE: Inasmuch as my strange physiological theories do not seem to satisfy Dr. Bullard and Dr. Knapp, I wish to say that I understood Dr. Bullard to say that he himself included both active and passive congestion. If he wishes to take back his idea of the active circulation I think he should be allowed to do so. I understood him to reply in answer to my question that he included the active circulation as a factor; it was to this circulation that I was referring. That this is a possibility (I do not say fact) that must be entertained, I think Dr. Bullard has himself carefully weighed, perhaps unconsciously, when he discussed the possibility of ether being a causative factor. If ether was to be considered as a possible explanation, it naturally could only be by its effect upon the circulation. If such theories are not to be entertained I fail to understand why the ether hypothesis was considered.

In reference to Dr. Knapp's criticisms of the hypotheses I suggested, and of his statement that they are in entire variance with the experimental observation of Mosso, I would merely say, that Mosso's observations do not bear upon the matter at issue at all, excepting in one particular, and that particular, on the contrary, corroborates the hypothesis suggested. Mosso simply studies the *form* of the pulse curve of pulsating brains under varying conditions. The one particular I refer to is, that when by pressure on the carotid he retarded or stopped the arterial circulation, cerebral pulsation ceased, as would naturally be expected. Furthermore, Mosso's experiments were not to determine *visible* cerebral pulsation, but had to do with plethysmographic tracings of pulsations, a distinction which I have already referred to.

DR. BULLARD: In almost all the cases I have seen of hemorrhage, where the hemorrhage has been large or continuous the brain has not been increased, but sunken from flow of blood or from pressure if the clot is large.

DR. PRINCE: Regarding the question of the pulse, I would say I have seen cases where with a very weak pulse there has been absence of pulsation. I have not been over my cases, but I am of the impression that in those cases where there was actual increased pressure there have been other factors, either tumor or hemorrhage, which were capable of causing this increased pressure. I understood Dr. Bullard that he was eliminating that class of cases and was only speaking of increased pressure where there were no focal conditions to cause it. I would like to ask Dr. Bullard whether, in the cases to which he has referred, he is quite certain he has excluded hemorrhage, etc., and has seen that condition of low pulse and increased intradural pressure? For myself, I must insist that when the pulse is low we must entertain the hypothesis that the absence of pulsation may indicate low pressure and not high pressure.[2]

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[2] Since the above remarks were made I have seen a case which confirms the views above expressed and turns what I suggested as a possibility into a reality.

The case in the service of Dr. Burrell was one of middle meningeal

MASTOID OPERATIONS.

Dr. Clarence J. Blake made the following remarks: In mastoid operations where it is necessary to remove the inner mastoid wall it not infrequently happens that the sinus is opened and that a hemorrhage occurs, which, while not necessarily serious in itself, interferes with the progress of the mastoid operation both by flooding the operating field and necessitating *temporary* obstructive tamponage. Under these conditions of hemorrhage I have, during the last three or four years, utilized the normal blood-pressure in the brain as exerted from within outward for the purpose of plugging the sinus from within, effecting this purpose by rapidly enlarging the opening into the cranial cavity through which the hemorrhage occurs. This may be very easily and rapidly done by means of the long beaked curette, and, with an opening of from three to ten millimetres in diameter, the brain pressure is usually sufficient to flatten the walls of the bleeding vessel against the edge of the opening in the bone; thus providing an effectual and permanent plug which permits leisurely completion of the operation. In one case of mastoid operation recently in which it was necessary to make a large opening into the cranial cavity posteriorly and anteriorly from the mastoid, both free bleeding from the sinus and hemorrhage from a meningeal artery were speedily stopped by this simple procedure.

(*To be continued.*)

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Recent Literature.

Deuxième Session de l'Association Française d'Urologie. Octave Doin, Editeur. Paris. 1897.

The favorable anticipation that one would naturally form with regard to the report of the meeting of an association composed of so many distinguished members as that indicated in the above title is largely fulfilled in the present publication.

Both the articles contributed and the discussions which follow them are of much interest and value. The subjects presented have a wide range. They are introduced by the pathological physiology of renal retentions by Professors Guyon and Albarran.

In the course of this communication there are some important observations upon the modifications of the kidney function in cases of complete hydronephrosis and pyonephrosis, after the outflow of urine through the ureter is cut off, and again after the outflow has been re-established through an opening in the renal pelvis, such as is made, for example, in the operation of nephrotomy. Similar observations were made with partial obstruction in the above-named conditions, the results of which are also given.

The subject of the recurrence of vesical calculus after lithotrity and lithotomy is introduced by Pousson in an interesting article in which he institutes a comparison between the crushing operation as it is now practised and the cutting ones with reference to this point, and cites his personal experience of 35 lithotrities and five suprapubic lithotomies, in the former of which there were eleven recurrences and in the latter two. Pousson contends that recurrence is not more frequent after lithotrity than after the cutting operations. His opinion is seen to be shared by a number of surgeons in the discussion that follows. Altogether the French are to-day the strongest defenders that we have of the modern method of lithotrity as introduced to us here by Bigelow.

Other subjects are too numerous to be noticed in detail; their publication in this volume is a very valuable contemporary contribution to the literature of this branch of surgery, and contains some of the most recent advances made in it. We shall look for the appearance of the subsequent reports of the transactions of the society with interest.

Chirurgie des Voies Urinaires. Etudes Clinique. Par le Dr. E. Loumeau. Bordeaux: Feret & Fils. 1897.

The author offers in this volume of 280 pages the results of his observations of a series of cases of surgical diseases of the genito-urinary organs. The work is an extension of a similar one published by him three years ago. The reports of the cases are thorough, and give evidence of accurate and careful observation. While there is but little that is new of importance, the work lacks perspective, and is in places prolix; still a careful perusal of the book will be useful to many readers.

Among the more interesting of the cases are two of rupture of the urethra, in one of which immediate suture was successfully applied. Some examples of cure of urethral fistula by suprapubic cystotomy and drainage are instructive.

Perhaps the most noteworthy case is that of an extensive cicatrix of the bladder, of crucial form, having an ulcerated surface at the point of crossing of the two arms of the cicatrix. The condition gave rise to very painful and frequent micturition. The diagnosis was made by means of the cystoscope. This rare condition of extensive connective-tissue formation was thought by the author to be due to a violent gonorrheal cystitis, with formation of phlegmon and resulting cicatrization.

The illustrations which accompany some of the subjects are excellent, as is also the general manner of the compilation of the book.

Text-book of Nervous Diseases. By Charles L. Dana, A.M., M.D. Fourth edition, revised and enlarged. With 246 illustrations. 8vo, pp. xi, 623. New York: William Wood & Co.

Five years have seen four editions of this work, which is still the best compendium upon the subject. The new edition is a great improvement upon its predecessors, since the outward appearance of the book is at last made more worthy its contents, by being printed with better type, on better paper, and on a larger page. The book has also been completely revised, many of the illustrations have been changed and a new chapter on alcoholic meningitis has been added. The chapters on the anatomy of the nervous system have been re-

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hemorrhage on the left side. Two openings in the skull were simultaneously made, one on each side of the head, a large clot causing extreme pressure on the left. On the right no clot. On neither side *after* as well as before removal of the clot was there pulsation of the dura. On opening the right dura a very thin clot not sufficient to cause pressure was found on pia; removed. Still no pulsation. Nor did the brain bulge. No ether was given; pulse was very rapid, could not be counted, weak; later, at end of operation, brain bulged slightly on right, but no pulsation. About this time pulse stronger and could be counted.

Query: Was slight bulging due to later increased arterial pressure as shown by pulse?

Autopsy: A very thin lamella of blood lying on cortex on each side, in the opinion of the medical examiner not sufficient to cause any pressure. Of this he is very positive.

Here then is a case of absent pulsation without pressure but coincident with a very weak pulse and also slight bulging without pressure.

written and many of the other chapters are practically new. The book has thus been brought up to date, and the present edition should replace its predecessors on the shelves of all who care to have the best modern treatise on the subject in one moderate-sized volume.

Organ Diseases of Women, notably Enlargements and Displacements of the Uterus, and Sterility. By J. Compton Burnett, M.D. Pp. 156. Philadelphia: Boericke & Tafel. 1897.

This interesting volume of 156 pages is well worth the time that it will take to peruse it. It is written in support of the author's position that (in so far as one can judge from his text) none of the diseases of women now treated by surgery are beyond the sphere of "medicines given by the mouth." It consists in the main of a long series of cases, each of which is annotated with remarks laudatory of the methods of treatment employed, and with side flings at the surgical methods. A few quotations from the index may be interesting. "Allopaths' opinions on homeopathy are nothing but spiteful splutter"; "Clergyman's daughter, Julia, enlargement of the womb cured by sepia"; "Hahnemann is a hero to Dr. Burnett"; "Lady married, twenty-eight years of age, with hemorrhoidal uterus"; "Rademacher, Dr. Burnett's opinion of"; "Womb defrauded"; "Dr. X. recommended support for enlarged womb."

The Diseases of Women, a Hand-Book for Students and Practitioners. By J. Bland Sutton, F.R.C.S. Eng., Surgeon to the Chelsea Hospital for Women, etc., and Arthur E. Giles, M.D., S.Sc. Lond., F.R.C.S. Edin., Assistant Surgeon Chelsea Hospital for Women, London. Pp. 436, with 115 illustrations. Philadelphia: W. B. Saunders. 1897.

This book labors under the disadvantage to American readers of being most essentially British in its therapeutics. The chapters on minor treatment in especial being so widely different from American practice as to be of use rather to experienced readers by way of the suggestions obtained from views so strongly in contrast with our own than essays which can be recommended to the student. It is, however, as might be gathered from the names of its distinguished authors, of very great value from its extreme fulness and wide views of the subjects connected with anatomy, the development of the organs, and their pathology. Upon these subjects, the plates, as well as the text, are of extreme interest.

A Manual of Obstetrics. By A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of the Columbian University, Washington, D. C., and in the University of Vermont, etc. New (7th) edition, 12mo, 573 pp., 223 illustrations. Philadelphia and New York: Lea Brothers & Co.

The fact that seven editions of this work have been needed within two years shows the popularity with which it is held. There is but little change from former editions, except in the chapter on Puerperal Septicemia, which has been re-written and much improved. Throughout the work the importance of antiseptic midwifery is accentuated with more emphasis than formerly, a desirable change in a student's manual.

The book is excellently arranged. Concise, and well illustrated and indexed. Its popularity is well deserved.

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THURSDAY, MARCH 24, 1898.

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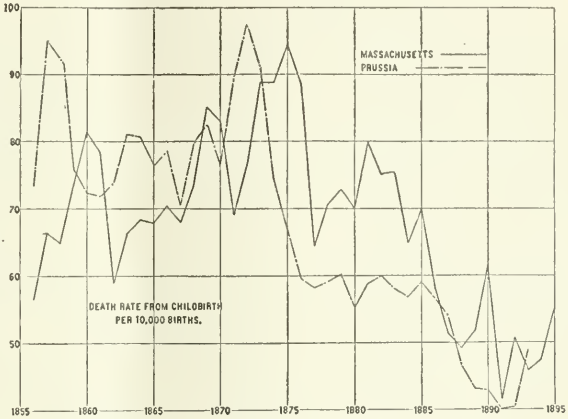
THE WASTE AND DESTRUCTION OF WHOLESOME MEAT.

The saving of wholesome, valuable food is in one sense a saving of life, for it tends to keep such food within the reach of those of narrow means. The attitude of a nation compelled to stop all avenues leading to unnecessary waste, and of one still quite indifferent to leakages of all sorts, provided the public treasury maintains or at least appears to maintain the normal level of its resources, is well illustrated by the laws and regulations relating to the inspection and sale of meats in Germany and in our own country. Under the guise of a measure to protect the public health a law was put upon the statute books of Massachusetts which compels the rejection of all slaughtered animals showing the slightest traces of tuberculosis. That such a regulation is absurd need not be impressed upon physicians who are presumably well informed of the slight, hidden beginnings of this disease in man. What is needed is that the public should know it equally well. Statistics of carefully performed autopsies will probably show that from 50 to 80 per cent. of all cattle which react to tuberculin have only one or several thoracic lymph-glands affected. Traces of disease cannot be found elsewhere. The uniformity of such occurrences, as well as the deductions of pathological studies, make it certain that the disease is limited to these small foci. Affections of a traumatic or parasitic origin that would often nauseate the beef-eater are frequently seen in the liver, the lungs and about the stomachs of beasts slaughtered for food, but no sanitarian would think of condemning such beef. Our supply would soon give out entirely if such were done.

In Germany, on the other hand, animals in the earliest stages of tuberculosis are passed as equivalent to animals free from any traces of this disease. The authorities go a step farther and steam the flesh of animals which owing to the stage of the disease in which they are at the time of slaughter might not be absolutely safe if the meat were consumed raw. Even in these cases experiments have shown that only in very rare instances are tubercle bacilli found in the flesh. But we may profitably carry the comparison a little farther. Germany is using some of the money thus saved in manning her great municipal abattoirs with a corps of educated and specially trained veterinary inspectors whose duty it is to see that no beef, pork or mutton goes on sale until the organs of every animal have been examined.

Our own meat inspection service, where it exists at all, is condensed, as it were, into the large cities, whereas outside of these circles with their ultra-rigorous measures, the butcher may practically do as he pleases. This is partly due to the fact that inspectors are appointed from all vocations in life except the one which presumably fits men for such work. Nothing prevents the non-inspected meat from reaching the markets of our large cities. In short, moderation and consistency are conspicuously absent in our system, if such a term may be applied to it.

The comparison between Germany and our own State is not made to urge the extreme measures of the former country. These we may leave to the next generation. Our object is to call attention to a rational middle ground, accepted by all nations fostering the public health and based on common-sense. For a number of years the National Government has been enforcing certain moderate rules in the inspection of meat for the interstate trade which tend to protect both producer and consumer. As some change in our own law is being contemplated by the legislature, we hope that these interstate regulations will take the place of the present unwise law.



Death-Rates from Childbirth, Massachusetts and Prussia (1856–1895).

It is now and then argued that any change like the one proposed would offend the good taste and fastidious sense of the meat-eating public. This, however, is a shallow argument, for our tastes are largely the outgrowth of individual training and national custom. A little thoughtful reflection concerning most of our cherished articles of food will unearth something repugnant to an over-fastidious mind; the prolonged ripening of meat in storage, probably under the influence of micro-organisms adapted to low temperature, the bacterial ripening of butter and cheese, the gross filth which reigns undaunted in many dairies, the general inadequacy of abattoirs as regards the means for maintaining cleanliness, the possibilities lurking in vegetables eaten raw, these and many others that might be rehearsed, are far more conspicuous sins against our esthetic sense, than the small (often minute) tubercle which is found buried in a thoracic lymph-gland.

It is not improbable that if any test case were made of the law now in operation, nice questions of what constitutes disease and what health, might be raised, and the whole matter referred after all to the discriminating sense of the regularly appointed authorities.

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ON THE DECLINE IN THE DEATH-RATE FROM CHILDBIRTH.[1]

THE broad field of preventive medicine includes within its domain, not only those measures which are distinctly within the province of Boards of Health, but other matters in addition which interest the general practitioner. For example, the marked diminution in the death-rate from the various causes, conditions and accidents incident to childbirth may very properly be considered as largely due to the improvements in midwifery which have followed the introduction of antiseptic measures.

The following statement is quoted from the last Annual Report of the Massachusetts State Board of Health, and embraces the results of observations made in Prussia and in Massachusetts for nearly identical periods of time (Mass., 1856–95; Prussia, 1856–93).

> It is desirable to state clearly at the outset what deaths should be included under this title, since several terms are employed, and also what shall be the standard of comparison in stating a death-rate. It was therefore decided to include all deaths classed as from childbirth (under this term are embraced all deaths specified as from abortion, childbirth, miscarriage and puerperal convulsions), puerperal fever, metritis, metria,[2] puerperal septicemia.
>
> With reference to the standard of comparison these deaths are those of one sex only, and mostly at ages from fifteen to forty-five, hence it seemed best not to employ the living population as a standard, as is done in the other columns of the table, nor should the living births be used as a standard, since still-births

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[1] Twenty-eighth Report of State Board of Health of Massachusetts, 1896, p. 804.

[2] An obselete term adopted by Dr. Farr.

subject the mothers to the same puerperal dangers as living births. The standard employed is, therefore, the number of cases of births occurring in each year, obtained by taking the sum of cases of living and of still births[3] Each case of plural birth is also reckoned as a single case. The relative figures represent deaths per 10,000 cases of birth and show a considerable decrease comparing the two periods. The whole number of cases of birth in the forty years was 1,820,756, and the deaths by childbirth, etc., 12,075, or 66.3 per 10,000.

The death-rates by five-year periods were as follows: 68.6, 68.1, 76.2, 83.8, 73.3, 72.9, 54.4, 48.2.

There appears to have been an increase up to the fourth period and then a greater decrease to the close.

In the diagram and table herewith are presented the figures for Massachusetts and those of a similar table for Prussia, in each of which a rise appears during the first half of the period and then a greater fall to the close of the table:

Year.	Massachusetts (Death-rate per 10,000).		Prussia (Death-rate per 10,000).	
	Annual.	Five-year Periods.	Annual	Five-year Periods.
1856	56.5	68.6	73.4	81 8
1857	66.4		95.0	
1858	64.8		91.6	
1859	73.5		75.9	
1860	81.3		72.3	
1861	78.4	68.1	71.8	78.0
1862	58.8		73.8	
1863	66.3		81.0	
1864	68.4		80.6	
1865	67 8		76.5	
1866	70.4	76.2	78.5	77.7
1867	68.0		70.5	
1868	73.5		79.7	
1869	85.1		82.5	
1870	83.0		76.7	
1871	69.1	83.8	89.5	84.3
1872	76.6		97.6	
1873	88.7		91.0	
1874	88.7		74.4	
1875	94 3		67.4	
1876	88.5	73.3	59.6	58.6
1877	64.4		58.2	
1878	70.6		59.1	
1879	72 8		60.2	
1880	70.0		55.3	
1881	79.9	72.9	58.8	58.5
1882	75.1		60.0	
1883	75.5		58.0	
1884	64.9		56 8	
1885	70.0		59 0	
1886	58.1	54.4	56.6	48.6
1887	51.4		53.8	
1888	49.1		46.6	
1889	51.7		43.1	
1890	61.5		42.8	
1891	41.6	48.2	40.0	43.3
1892	50.8		40.4	
1893	45.9		49.0	
1894	47 4		....	
1895	54.9		....	

The column of figures for Prussia in this table is taken from a paper by Dr. H. B. Brennecke, of Magdeburg, entitled "Errichtung von Heimstätten für Wochnerinnen,"[4] and extends over a period of fifty years (1844-93). It contains the statistics of 296,867 deaths from childbirth and its incidents out of 44,095,659 cases of labor.

In commenting upon that portion of the foregoing table which relates to the mortality of child-bearing women in Prussia, Brennecke says: "Hegar in 1892, at the gynecological congress in Bonn, properly called attention to the fact that the sudden and surprising fall of the puerperal mortality curve in 1874 was not due to the influence of antiseptics (which were not employed at that time in the country districts), but may be attributed solely to the fact that in 1874 the administration of the official registration passed out of the hands of the clergy into those of the civil authorities. I have no doubt," says Hegar, "that the collection of the statistics was conducted more accurately by the clergy than by the civil authorities, since in the country districts the clergy are especially well informed as to the condition of the families under their care. They are summoned in cases of childbirth and know when death in childbed occurs. The civil authorities are not so well informed."

Whether the foregoing comments in regard to the cause of the changes in the death-rate from the incidents of childbirth in Germany are correct is a question. They certainly do not apply to the similar column of statistics for Massachusetts, since while the Massachusetts column shows precisely the same sudden fall three years later, it is not true that any change in the methods or the authorities collecting the statistics have here taken place, since they have from the very outset, in 1842, been collected by the city registrars and the town clerks throughout the State.

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MEDICAL NOTES.

TARNIER'S SUCCESSOR. — Dr. Pierre Budin has been chosen to succeed Dr. Tarnier as Clinical Professor of Obstetrics in the Paris Faculty.

PAINLESS LABOR. — A Case of Painless Labor is reported by Frank S. Clark, M.D., of Cleveland, in the *Cleveland Medical Journal* for March, 1898.

DR. WILLIAM S. PLAYFAIR, of London, announces in the *Lancet* for March 5th his approaching retirement from the professorship of obstetrics in King's College, which he has held for twenty-five years.

THE CUVIER PRIZE of the Academy of Sciences, Paris, 1,500 francs in value, has been awarded to Professor Marsh, of Yale University. This prize is awarded every three years for the most noteworthy work published during that period on geology or zoölogy.

CONGRESS OF HYGIENE AND DEMOGRAPHY. — The Ninth International Congress of Hygiene and Demography will, as we have already announced, be opened at Madrid on April 10th, and will be continued for one week. The exhibition of hygiene will, however, be open for three months.

JOHNS HOPKINS HOSPITAL. — The plans for a new medical building at the Johns Hopkins Hospital have been completed. The physiological and chemical laboratories will be removed from the university to the hospital grounds. One floor of the new building will be devoted to pharmacology.

"WAR, PESTILENCE AND FAMINE." — "I'm for war, pestilence and famine!" So shouted a heedless agitator in our hearing the other day, and he shouted better than he knew. Let the thoughtful not forget that pestilence (yellow fever) and famine tread hard on the heels of war!

THE NEW YORK HOSPITAL LIBRARY PRESENTED TO THE ACADEMY OF MEDICINE. — The New York Hospital Library has been recently presented to the New York Academy of Medicine. The library is particularly rich in rare and old editions and will form a very valuable addition to that of the Academy.

THE DOCTORS ARE PUZZLED AGAIN. — News came to the daily papers of February 23d that Dr. G. W.

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[3] This method was adopted in order to make the figures comparable with those of other countries.

[4] Vierteljahrsschrift für öff. Gesundheitspflege, 1897, p. 81, vol. xxix.

Gary, of Franklin, Pa., and two other citizens of that city had died within a few hours of each other from spinal meningitis. The news-gatherer stated that "the doctors were puzzled" because the disease did not yield to the usual treatment. — *Cleveland Journal of Medicine.*

Liberty, License, Law and Witchcraft. — Washington despatches state that Governor Brady, of Alaska, has notified Secretary Bliss that he is convinced it is time to take the natives in hand and break up the practice of witchcraft and compel them to conform to the laws of the United States. We seem to hear the Professor of Philosophy in Harvard College (James) protesting: "This is a religious or a quasi-religious movement; do you dare, O Secretary Bliss and Governor Brady, to thrust the coarse machinery of the criminal law into these vital mysteries?"

Acquittal of Dr. Laporte. — Dr. Laporte, says the Paris correspondent of the *British Medical Journal*, whose trial for manslaughter consequent on the death of a woman after delivery created so much sensation, and whose sentence of three months' imprisonment rendered null by the application of the First Offence Act, roused so much indignation in the medical profession, has been acquitted by the Court of Appeal. Professor Pinard made several demonstrations to establish Dr. Laporte's ability and proper treatment of the deceased woman. A subscription was organized for Dr. Laporte realizing a fair sum. Dr. Laporte earns an honorable living as a shorthand writer.

American Medical Association. — The Committee of Arrangements for the Denver Meeting, June 7–10, 1898, announces that preparations for the coming meeting are well advanced. A large number of prominent men have signified their intention to be present and read papers, an excellent scientific programme is assured, and the indications all point to a large and successful meeting. Convenient and ample accommodations have been secured for the General Sessions, Section-work, Registration and Exhibits. The entertainment of members and their families is being planned on an elaborate scale and the Committee promises all who may come a most enjoyable time. Denver is an interesting city, and the State offers many and varied attractions to visitors. Local excursions are being arranged to take place after the meeting, that all may have ample opportunity of visiting various points of interest in the State and seeing the best scenery of the Rocky Mountains. The Committee confidently expects to obtain a one-half rate and thirty-day limit for the round trip on roads west of Chicago and St. Louis, and reduced rates on Eastern roads. The rates will be announced in the *Journal* of the Association as soon as definitely determined.

BOSTON AND NEW ENGLAND.

X-Ray Apparatus. — A paper on some improvements in x-ray apparatus will be presented at a meeting of the Society of Arts at the Walker Building of the Massachusetts Institute of Technology at 8 o'clock on Thursday evening 24th inst. Physicians and surgeons are invited to be present.

Working Hours for Nurses. — A hearing was held before the Committee on Labor of the Massachusetts Legislature on March 22d on the proposed bill providing that nurses in hospitals shall not work more than twelve hours a day nor sleep in the room with a patient, or the adjoining room, if communicating. Dr. Cowles, Superintendent of the McLean Asylum, Dr. Howard, of the Massachusetts General Hospital; and other superintendents of hospitals and training-schools, together with from sixty to seventy-five nurses, appeared in opposition to this absurd and impracticable proposition. O Liberty, what crimes are attempted in thy name!

NEW YORK.

The Needs of Bellevue Hospital. — In the report of his annual inspection of public hospitals in New York City, submitted to the State Board of Charities on March 14th, President Wm. R. Stewart directs special attention to defects which he found at Bellevue Hospital. Commissioner Kellar, the head of the Charities Department of Manhattan Borough, upon receiving a second control report from Dr. Louis W. Schultze, general medical inspector of the Department, gave out the following statement: "The whole matter in a nutshell is that the city has outgrown Bellevue. If the money were at my disposal I would build enough additions to the present structure to comfortably house patients and help." He then went on to state that he would at once have such improvements made as were most urgently demanded, but explained that owing to the limited amount of the appropriation given by the Board of Estimate and Apportionment to the Department it was impossible for him to do all that was desirable for perfecting the condition of the hospital.

Hospitals not Liable for Negligence of Attendants. — In a decision handed down by Justice Cohen in the Supreme Court he holds that hospitals are not liable for the negligence of attendants so long as it is shown that proper precaution has been exercised in the selection of such attendants by the hospital authorities. The case in which the decision was rendered was a suit brought by Miss Helen D. Ward to recover damages from St. Vincent's Hospital for injuries received while she was a pay patient at that institution. On one occasion she was placed in a bed between the sheets of which there had been left a hot-water bag, and her leg was so badly burned by contact with the bag that operative procedures were necessitated. The judge finds that the accident was due to the single careless or thoughtless act of one of the employees of the hospital, and that the plaintiff has a cause for action against that employee, but not against the institution.

Danger of Fire in Lodging-Houses. — The recent fire in a Bowery lodging-house, in which a number of lives were lost, caused the Board of Health to order a special inspection of the 113 similar places which are conducted under permits from the Board. The inspection was made on the night of March 15th and Sanitary Superintendent Roberts afterwards reported that all but five of the lodging-houses were found to be managed in accordance with the requirements of the sanitary code, and that the necessary changes would be made at once in those five.

The Manhattan Eye and Ear Hospital. — In the twenty-eighth annual report of the Manhattan Eye and Ear Hospital it is stated that the work of the hospital has increased to such an extent that it was found necessary, not infrequently, to perform operations upon the eyes of one patient, and upon the ears, throat or nose of another at the same time and in the same operating room. In consequence of the inconvenience and embarrassment thus occasioned, the Directors decided to do away with the Department for Diseases of the Nervous System, and to convert the large room formerly occupied by that department into an operating-room for the departments of the ear, throat and nose. During the year the capacity of the hospital was further increased by the utilization of an adjoining building. In the report attention is particularly called to the care that is exercised in excluding unworthy patients who are able to pay; it being stated that 10 per cent. were excluded by the superintendent during the year, who acknowledged that they were able to pay for medical or surgical treatment.

Death of Another Esquimau. — The change of climate seems to have had a disastrous effect upon the Esquimaux brought to New York by Lieutenant Peary. Another of the six, the only woman in the party, died on March 16th, of pneumonia.

A Dispensary Building for Brooklyn. — Mr. Henry Batterman, a Brooklyn merchant, has given the sum of $35,000 to the Bushwick and East Brooklyn Dispensary in memory of a deceased daughter, and it is announced that the dispensary authorities will erect a new building.

Death of Dr. Conkling. — Dr. John T. Conkling, a prominent Brooklyn physician, died at his home in that borough on March 17th, at the age of seventy-three. Three years ago he retired from active practice.

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Miscellany.

THE PROFESSOR OF PHILOSOPHY IN HARVARD COLLEGE.

A Professor of Harvard College has for a long time allied himself with the enemies of scientific medicine, and in the interests of faith-cure or mental science. The name of this spokesman of medievalism and ally of quackery is William James, and he is a professor (in Harvard College!) of philosophy. He opposed with all his powers the establishment of a medical practice act in Massachusetts, and he is now laboring to prevent the enactment of a most humane law for the establishment of medical registration in that State. He says the modes of treatment attacked are religious; that the legislature has no right to legislate in medical matters, and that the motive of the profession is trades-unionism. Harvard College should be commanded to let every ass and idiot in the State compete in the lectureship and emoluments from the same, in philosophy. Would James feel some indignation if this should be done? Philosophy is a matter of religion, legislation and trades-unionism also. It is also, it is true, a matter of ignorance and of learning, quite as much as, and no more than, medicine. James, of Harvard College, says medicine is not a science, and therefore registration and examination are objectionable. But the philosophy of Harvard College and of all colleges is hardly any more of a "science," and therefore Bob Ingersoll and Munyon and Ayer should be allowed to teach philosophy in Harvard College quite as freely as James.

This is another instance out of many of the "highest culture," so-called, returning to primitive barbarism — the dog returning to his vomit. With consummate impertinence the Professor of Philosophy in Harvard College sets his dictum above that of the Professor of Medicine in the same college, and on a distinctly medical matter. *Ne sutor ultra crepidam!* It would seem to be a case for collegiate discipline. We do not know what power Harvard College has to discipline its atavistic professors, but for the sake of her good name we trust some means may be found to wash out of the memory of civilized people the shame brought upon her by the fact that one of her teachers glories in an alliance with one of the most outrageous guerilla-bands of anti-civilization. In the meantime let us all not forget that Professor James of Harvard College thinks those who treat the diseases of the human body need know nothing of disease. The most ignorant and depraved are as capable as the most honorable and instructed. "Impression and intuition seem to accomplish more than chemical, anatomical, or physiological information"— thus spake James, Professor of Philosophy in Harvard College! — *Philadelphia Medical Journal.*

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HOW CONTAGIOUS DISEASES ARE DISSEMINATED.

To those who wonder how cases of contagious disease spread through a community, the following account, taken from the local paper of a town in Western Massachusetts, may not prove uninteresting.

On February 3d a young man who found occasional employment as a railroad news agent was taken sick in the hotel where he lived. A physician was called, who reported that the disease was small-pox, and told him to keep the door of his room locked and admit no one, except a friend, a freight brakeman, who remained with him and took care of him. The manager of the hotel was present, knew what the diagnosis was, and is supposed to have understood the importance of isolation. Notwithstanding this, as the boy said, "everybody in the house dropped in to see me." Many of his newsboy chums called, and some of them spent a good deal of time with him, sitting socially on the bed. He was also visited by several young women acquaintances, who were employees in a shoe-shop, and who returned to their work. The newsboys returned also to their vocations.

Two days after the physician who was first called saw the case another physician was called, the diagnosis of small-pox was made, and the board of health was notified. Twenty-four hours later action was taken and a house on the outskirts of the town was secured for a pest-house, but no one in the town could be persuaded to furnish conveyance. Finally, a man living in a neighboring town, for the consideration of ten dollars, furnished a wagon, and the doctor and the brakeman who had acted as nurse made the transfer. In the language of the reporter: "The equipage had the street all to itself. People were afraid even to look at it. One young woman in town who chanced to see it has since been in a miserable state of unstrung nerves, and is thoroughly convinced that she 'caught it.'"

The brakeman has been quarantined in a room on the top floor of the hotel, and the hotel has been disinfected with sulphur and other disinfectants. Aside from this, no quarantine has been established, and the hotel has continued doing business as if nothing had happened. The barber shop, bathing establishment and saloon connected with the hotel continue to do a thriving business. Many people, however, avoid the street in which the hotel stands, and small boys having occasion to pass the building have been observed to hold their noses and run past at full speed. All who were known to have been exposed have been vaccinated, and vaccination is being generally performed throughout the town.

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Correspondence.

AMERICAN SOCIAL SCIENCE ASSOCIATION.

Concord, Mass., March 21, 1898.

Mr. Editor: — I notice that in your abstract of the interesting report of Drs. Stedman and Dana on "After-Care" you follow that authority in ascribing to Falret in France the origin of protective societies for the recovered insane, with the date 1841 as the time. Victor Parant, however, in Dr. Tuke's "Dictionary of Psychological Medicine" (Vol. I, 515) says: "The idea of protective societies is due to Cazauvieilh. In 1843 the first society was founded in Paris and organized by Baillarger. About the same time J. Falret founded a house of convalescence for women, the purpose of which was the same as that of the protective society; the aim being to keep them from relapsing by giving them at once an abode." I take it this is accurate as regards France.

But Germany was really the originator of this excellent idea, as of so many others by which mankind have benefited. Its first practical promoter was the Hofrath Lindpaintner of the Duchy of Nassau (born 1793, died 1848), whom Dr. Damerow of the Nietleben Asylum described at his death as "perhaps the last non-medical director of a German institution for the insane," and who himself published in 1844 at Wiesbaden his useful "Nachrichten ueber die herzogliche Nassauische Irrenheilanstalt zu Eberbach, im Rheingau, von ihrer Begruendung (1815) an bis zum Schlusse des Jahres 1842." Midway of this period, Herr Lindpaintner founded the first patronage society.

My old friend, Dr. Earle, who visited Eberbach in 1849, just before its patients were removed to their present asylum on the Eichberg, said in his "German Asylums," published in 1852-53: "In 1829 a Society of Patronage was originated by Mr. Lindpaintner, who became distinguished for the energy and ability with which, as director, he managed the asylum. *This society was the first of the kind, so far as I am informed.* To the poor who are cured it extends its care and assistance during a period of two years after they leave Eberbach. Up to the year 1844 it had assisted 81 persons, at an expense of 1,348 florins" (page 199). It was then in quiet but successful operation a dozen years or more before Dr. Falret made his move in Paris. As Dr. Earle resided in Paris during portions of 1837-8-9, and knew Falret, I take it that his authority is good.

It seems to me that this statement is due to the memory of one of the early reformers of insane care, in a country of which we hear much less on this subject than of France and England, especially in the period preceding Dr. Earle's very useful book. But I may also call attention to a matter which Dr. Stedman and his colleagues overlook, — that the boarding-out system for the insane of Scotland, Belgium and some parts of Germany, gives one of the best opportunities for "after-care," and is so used in those countries to some extent, as it was by me during the three years (1885-88) in which I introduced and managed the Scotch system in Massachusetts. Some very striking examples of virtual recovery and self-support occurred among the 180 patients whom I placed in families, in consequence of the "after-care" which the State then exercised in such cases; and I doubt not more have occurred in the ten years since I ceased officially to exercise such "after-care." Were our State hospitals to have power to board out their inmates, retaining them under hospital authority, but in hundreds of families throughout Massachusetts, we could have at once the most efficient sort of after-care, with very little cost.

Very truly yours,
F. B. Sanborn.

RECORD OF MORTALITY

For the Week ending Saturday, March 12, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1223	441	9.28	21.44	1.04	.40	3.60
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	464	172	13.20	17.60	1.10	1.54	5.72
Brooklyn	1,160,000	—	—	—	—	—	—	—
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	223	75	7.20	22.05	.90	.90	4.05
Boston	517,732	223	63	4.95	17.10	.45	.45	1.80
Cincinnati	405,000	127	—	3.90	15.60	—	.78	2.34
Cleveland	350,000	87	37	9.20	9.20	3.45	—	2.30
Pittsburg	285,000	107	40	14.88	27.90	9.30	1.96	—
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Worcester	105,050	35	13	8.54	20.00	—	—	5.72
Nashville	87,754	26	6	3.85	11.55	3.85	—	—
Fall River	95,919	33	18	15.15	21.21	—	—	3.03
Lowell	87,193	29	5	—	20.70	—	—	—
Cambridge	86,812	22	8	8.30	20.75	4.15	—	—
Lynn	65,220	19	—	10.52	15.78	—	10.52	—
Charleston	65,165	—	—	—	—	—	—	—
New Bedford	62,416	24	8	—	20.80	—	—	—
Lawrence	55,510	20	4	—	10.00	—	—	—
Springfield	54,790	16	5	12.50	37.50	—	—	6.25
Holyoke	42,364	7	4	28.56	14.28	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Salem	36,062	16	4	—	25.00	—	—	—
Brockton	35,853	3	0	—	—	—	—	—
Malden	32,894	8	3	12.50	—	—	—	—
Chelsea	32,716	9	3	11.11	11.11	—	—	—
Haverhill	31,406	8	4	12.50	25.00	—	—	12.50
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	9	0	—	—	—	—	—
Fitchburg	28,392	9	6	11.11	—	—	—	—
Taunton	27,812	6	2	—	33.33	—	—	—
Quincy	22,562	5	2	—	—	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	4	2	—	50.00	—	—	—
Everett	21,575	11	3	—	36.36	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Newburyport	14,794	1	0	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,864; under five years of age 973; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 257, acute lung diseases 572, consumption

389, diphtheria and croup 97, measles 45, diarrheal diseases 40, whooping-cough 22, typhoid fever 20, scarlet fever 15, cerebrospinal meningitis 14, erysipelas 4.

From measles New York 22, Philadelphia 19, Pittsburg 2, Baltimore and Cleveland 1 each. From whooping-cough New York 10, Baltimore, Boston and Pittsburg 2 each, Philadelphia, Cincinnati, Cleveland, Cambridge, Springfield and Fitchburg 1 each. From scarlet fever New York 11, Philadelphia 2, Cleveland and Fall River 1 each. From cerebro-spinal meningitis New York 6, Boston and Holyoke 2 each, Providence, Worcester, Malden and Chelsea 1 each. From erysipelas New York 3, Boston 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending March 5th, the death-rate was 20.7. Deaths reported 4,454; acute lung diseases (London) 425, measles 232, whooping-cough 96, diphtheria 66, diarrhea 37, scarlet fever 25, fever 25.

The death-rates ranged from 13.0 in Preston to 26.1 in Gateshead; Birmingham 24.0, Bradford 16.5, Croydon 19.7, Huddersfield, 17.3, Leeds 19.6, Liecester 21.7, Liverpool 22.9, London 20.9, Manchester 22.6, Newcastle-on-Tyne 17.5, Nottingham 23.2, Portsmouth 17.6, Salford 20.1, Sheffield 20.2, Sunderland 23.9.

METEOROLOGICAL RECORD

For the week ending March 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ...6	30.44	38	47	28	57	60	58	N.W.	S.W.	9	6	C.	C.	
M...7	30.48	40	50	30	68	51	60	W.	S.W.	6	8	O.	O.	
T ...8	30.42	42	48	36	68	56	62	W.	S.	5	8	C.	C.	
W...9	30.36	48	61	35	76	69	72	S.W.	S.W.	8	12	C.	C.	
T ..10	30.40	50	60	40	79	69	74	S.W.	S.W.	9	10	C.	C.	
F...11	30.33	54	64	43	85	67	76	S.W.	S.	5	12	O.	C.	
S...12	30.12	52	60	45	85	82	84	S.W.	S.	5	21	O.	O.	.06
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* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 12, 1898, TO MARCH 18, 1898.

CAPTAIN FRANCIS J. IVES, assistant surgeon, is relieved from duty at St. Francis Barracks, Fla., and ordered to Fort Wingate, New Mex., to relieve CAPTAIN ADRIAN S. POLHEMUS, assistant surgeon.

CAPTAIN POLHEMUS, upon being so relieved, is ordered to Fort Columbus, N. Y.

CAPTAIN WILLIAM E. PURVIANCE, assistant surgeon, is relieved from duty at Fort Columbus, N. Y., and ordered to Fort Morgan, Ala.

CAPTAIN ALLEN M. SMITH, assistant surgeon, will be relieved from duty at Fort Reno, O. T., upon the arrival there of FIRST-LIEUT. HENRY A. WEBBER, assistant surgeon, and ordered to Fort Hamilton, N. Y.

FIRST-LIEUT JAMES S. WILSON, assistant surgeon, is relieved from duty at Fort Clark, Tex., and ordered to Fort Caswell, N. C.

The order assigning FIRST-LIEUT. THOMAS S. BRATTON, assistant surgeon, to Fort Leavenworth, Kan., is revoked, and he is relieved from duty at Fort Niobrara, Neb., and ordered to Tybee Island, Ga., for duty.

Leave of absence for three months, to take effect on or about April 1, 1898, is granted MAJOR JOSEPH B. GIRARD, surgeon, Jefferson Barracks, Mo.

Leave of absence for one month, on surgeon's certificate of disability, is granted CAPTAIN MADISON M. BREWER, assistant surgeon, to take effect upon the expiration of the ordinary leave of absence.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 19, 1898.

W. S. DIXON, medical inspector, detached from the "Brooklyn" and ordered at once to the hospital at Norfolk, Va., for treatment.

P. FITZSIMONS, medical inspector, detached from duty as a member of the Board of Inspection and Survey, Washington, and to the "Brooklyn."

J. E. GARDNER, surgeon, ordered to the "Dolphin," March 24th.

T. W. RICHARDS, passed assistant surgeon, detached from the New York Navy Yard and ordered to the "Machias," March 22d.

M. R. PIGOTT, passed assistant surgeon, detached from the "Machias," March 22d, proceed home and wait orders.

RECENT DEATHS.

JOSEPH DANIEL COUCH, M.D., M.M.S.S., died in Cambridge, March 16, 1898.

CHARLES HENRY RICKER, M.D., M.M.S.S., died in Lowell, March 16, 1898, aged forty-two years.

SIR RICHARD QUAIN, M.D., F.R.C.P. Lond., F.R.C.P.I., died in London on March 13th. He was born in Mallow, Ireland, in October, 1816, and began professional life as clerk to an apothecary in Limerick. He went to London to study and obtained the degree of M.D. from University College in 1842. He served as house surgeon and later as house physician in the University College Hospital, and shortly after graduation was made a fellow of the college. In 1851 he was chosen a Fellow of the Royal College of Physicians, and in 1860 was appointed a member of the senate of the university. He was for a long time chairman of the pharmacopœia committee and had much to do with the publication of the last two editions of the British Pharmacopœia. For many years he was physician to the Hospital for Diseases of the Chest at Brompton, and had also been for a long period physician to the Queen. He was the author of many medical publications and was editor of "A Dictionary of Medicine," the first edition of which was published in 1882.

BOOKS AND PAMPHLETS RECEIVED.

Typhoid Fever. By John Eliot Woodbridge, M.D., Cleveland, O. Reprint 1897.

Clinical Tests of New Remedies. By Seth Scott Bishop, B.S., M.D., Chicago. Reprint. 1898.

Notes on Household Disinfection by Formaldehyde. By Wyatt Johnston, Montreal. Reprint. 1897.

Difficulties in Determining the Causes of Coma. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1897.

Forty-second Annual Report of the Trustees of the Northampton Lunatic Hospital, for the year ending September 30, 1897.

Notes on the Non-surgical Treatment of Boils, Carbuncles and Felons. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. 1897.

Fourth Annual Report of the Board of Managers of Craig Colony to the State Board of Charities, for the fiscal year ending September 30, 1897.

A Case of Exophthalmus without Pulsation, but with a Bruit, and Which Ended in Spontaneous Recovery. By David Coggin, Salem, Mass. Reprint. 1898.

Successful Removal of an Enormous Mesenteric Tumor and Nearly Eight Feet of Intestine. By Francis J. Shepherd, M.D., C.M., Montreal. Reprint. 1897.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, New York. Vol. V, Part I. For the collegiate year 1896-97.

Zur Bottini'schen Operation bei Prostatahypertrophie. Von Dr. Albert Freudenberg in Berlin. (Vortrag, gehalten in der Berliner medicinischen Gesellschaft am 20, October, 1897.)

The Present Status of Puerperal Infection. Some Practical Thoughts on the Development of the Human Race and Obstetric Nursing. By R. R. Kime, M.D., Atlanta, Ga. Reprints. 1898.

Transactions of the Nineteenth Annual Meeting of the American Laryngological Association held in the City of Washington, D. C., May 4, 5 and 6, 1897. New York: D. Appleton & Co. 1898.

The Medical Annual and Practitioners' Index: A Work of Reference for Medical Practitioners. By thirty-three British and American authors, 1898. Sixteenth Year. London: Simpkin, Marshall, Hamilton, Kent & Co. 1898.

The Antitoxin Treatment of Tuberculosis or the Direct (Tuberculin Preparations) *versus* the Indirect (Animal Serum) Method of Immunization against Tuberculosis. By Charles Denison, A.M., M.D., Denver, Col. Reprint. 1898.

The Nervous System and Its Diseases, a Practical Treatise on Neurology for the Use of Physicians and Students. By Charles K. Mills, M.D., Professor of Mental Diseases and Medical Jurisprudence in the University of Pennsylvania; Professor of Diseases of the Nervous System in the Philadelphia Polyclinic, etc. Diseases of the Brain and Cranial Nerves, with a General Introduction on the Study and Treatment of Nervous Diseases. With 459 illustrations. Philadelphia: J. B. Lippincott Co. 1898.

Original Articles.

OBSERVATIONS ON MENINGITIS IN INFANTS AND CHILDREN.[1]

BY A. H. WENTWORTH, M.D.,
Assistant in Diseases of Children and in Pathology in the Harvard Medical School.

(Continued from No. 12, p. 271.)

TUBERCULAR MENINGITIS.

Etiology. — Tubercular meningitis occurs most frequently between the ages of two and seven years. It is not rare in infants under one year. The disease is practically always secondary to tuberculosis elsewhere in the body, and should be considered rather as a manifestation of a more or less general tuberculosis than as a distinct disease. In most cases there is an hereditary or acquired predisposition to tuberculosis. An inherited tendency may be transmitted by parents who are tuberculous. It has been claimed that the same predisposition can be transmitted by parents whose vitality has been lowered by chronic diseases, alcoholic excess, etc. An acquired susceptibility is often the result of previous diseases, such as rachitis, long-continued gastro-enteric disturbances, measles, pertussis, influenza, focal pneumonia, etc. In some cases tubercular meningitis occurs in infants of one or two years of age who, up to that time, have been considered well.

Pathology. — Tuberculosis of the meninges differs from the general type of tuberculosis elsewhere in the greater degree of intensity of the accompanying merely inflammatory lesions. There will always be found some miliary tubercles along the course of the vessels, or some tuberculous tissue. But very frequently there will be caseation of the inflammatory exudation rather than a strictly tuberculous tissue. Macroscopically, there is often abundant fibrinous exudation over the base of the brain extending along the fissure of Sylvius and to some extent over the lateral convexity of the cortex. The ventricles are usually dilated and filled with a somewhat cloudy fluid. Numerous miliary tubercles may be seen along the vessels of the choroid plexus.

Symptoms. — In typical cases there is a period of from two or three weeks to the same number of months preceding the appearance of meningeal symptoms during which the child is not normal. It grows pale, becomes irritable and loses appetite and weight — indefinite symptoms for which there is no apparent cause. These symptoms are assumed to be due to a more or less general and slow infection with miliary tuberculosis. In a large proportion of all cases the involvement of the meninges is shown by vomiting. This is one of the most constant symptoms. The initial vomiting may be repeated several times, and may even continue for several days. It may occur coincidently with the administration of food, but is not dependent upon it.

When the vomiting is persistent it does not yield to treatment, as is usually the case in vomiting due to gastric disturbance. The child is irritable. The bowels are usually constipated. The temperature in most cases is slightly elevated. Slowing, irregularity and intermittence of the pulse occur in many cases within a few days of the initial vomiting. A pulse-rate of from 100 to 120, for example, is a relatively slow pulse for an infant of one year, affected with vomiting and even a slight rise in temperature. In older children not infrequently one observes 70 or 80 pulse-beats in a minute in tubercular meningitis. A slow pulse is not of so much diagnostic importance unless combined with irregularity and intermittence. This condition of the pulse is transient and disappears after a few days.

The patient is inclined to be apathetic and to sleep more than formerly. Headache is oftentimes not complained of. Usually older children admit that their heads ache when questioned, but otherwise not. The temperature is rarely more than moderately elevated throughout the disease until a day or two before the fatal termination. The average temperature varies from normal to 100° F. in the morning and from 101° to 103° F. in the afternoon. It is very irregular and atypical in its course.

Constipation is a quite constant symptom throughout the course of the disease. The progress of the disease is slow. During this early stage the most marked symptoms, sometimes for several days, are the increasing apathy, irritability when roused and emaciation. The latter is most noticeable in the neck and body.

During the first week or ten days following the initial vomiting most of the patients do not seem very ill. Gradually the cerebral symptoms become more noticeable. The apathy changes to somnolence and stupor. The eyes often remain partly open with widely dilated pupils which react slowly and imperfectly to light. A difference in the size of the pupils is not uncommon. Oftentimes the eyes have a peculiar "far away" expression which is characteristic. The patient takes no cognizance of his surroundings and rouses only when disturbed. In spite of the constipation there is but little formation of gas in the intestines and the abdomen becomes more and more retracted. There is an increasing tendency to hold the head fixed in one position and to lie upon one side or the other in order to avoid the pain in the neck caused by movements of the head. Pressure over the spinous processes in the cervical region often causes pain and will rouse the patient even when deeply stupefied. Sudden piercing cries, the so-called *cri hydrocephalique*, are not rare at this stage. Automatic chewing and sucking movements occur oftentimes. Trousseau's phenomenon is a constant symptom but not pathognomonic of meningitis. The same is true of fleeting erythemas, which appear in various places in the skin and rapidly disappear.

The condition may remain about the same for several days. The temperature remains moderately elevated and pursues the same irregular remitting course. The pulse is somewhat increased in rate. It is difficult to administer food. Retraction of the head may occur, but is oftentimes not marked. Paralyses, except of the ocular muscles, are uncommon. Strabismus is frequently observed, but often is not permanent. Urine and feces are passed involuntarily. By this time the emaciation is extreme. Finally the disease progresses rapidly. The patient becomes comatose, oftentimes cyanotic. Convulsions may or may not occur. The temperature rises; the pulse becomes very rapid; the respiration often assumes a "Cheyne-Stokes" character; and death ensues. The sudden high rise in temperature and marked increase in the pulse-rate are almost always followed by death in from one to two days. The disease lasts for from three to six weeks after the initial vomiting.

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[1] From the Sears Pathological Laboratory of the Harvard Medical School.

Variations from the above type are common. Occasionally tubercular meningitis begins with a convulsion, usually not severe, and subsequently pursues the usual slow course. Now and then paralysis of one or more extremities occurs at an early stage of the disease. These paralyses are usually not permanent. Very rarely tubercular meningitis begins with severe symptoms followed by coma and convulsions and death within a week. These cases cannot be differentiated clinically from other varieties of meningitis. Cases which last from eight to twelve weeks are by no means rare. Unusual types of fever are quite common. In cases complicated by a more acute general infection with miliary tuberculosis the temperature is not unlike that of typhoid fever, that is, a high and continued one. In these cases the disease does not necessarily run a shorter course. Now and then one observes cases which have a normal temperature until a few days before death. As stated previously, the terminal rise in temperature and pulse is usually followed by death in from one to two days. The writer recently observed a case in which these phenomena occurred and persisted for five days preceding death. Tubercular meningitis often runs a shorter course than usual in infants under one year and in children with advanced pulmonary tuberculosis. These cases frequently die within two weeks. Retraction of the abdomen does not always occur, although it is one of the common symptoms. Diarrhea may occur in infants in place of constipation. Cases in which retraction of the head, pain and tenderness in the neck are absent are not at all infrequent.

Diagnosis. — The diagnosis of tubercular meningitis in the early stage of the disease is often difficult. The most frequent error is to confound the disease with some milder affection, such as gastro-enteric disturbance. This is largely due to two things, namely, that tubercular meningitis begins insidiously without marked cerebral symptoms, and that the physician is off his guard and does not constantly keep in mind the possibility of its occurrence.

In the majority of cases tubercular meningitis pursues the following characteristic course: A gradual and often insidious onset; initial vomiting, followed within a week by a temporary slowing, irregularity and intermittence of the pulse; a moderate or slight elevation of temperature which is irregular in type; the early appearance of drowsiness and apathy, which slowly but steadily progresses to stupor and coma. (Marked changes in the mental condition are not noticeable from day to day, it is only by comparing intervals of several days that one perceives the progressive nature of the cerebral symptoms.) This does not apply to the last few days preceding death when the disease pursues a rapid course. The terminal rise in temperature and pulse-rate are constant. Dilatation of the pupils is usually an early symptom and a certain "far away" expression of the eyes is quite characteristic. The patient is generally quiet unless disturbed. Rigidity and retraction of the head and tenderness in the neck are not early symptoms as a rule, and may be absent at times. Emaciation is rapid and extreme. Constipation and a retracted abdomen are common. Convulsions, when they occur, generally do so toward the end of the disease. Tubercles in the choroid are pathognomonic when present, but occur too infrequently to be of much value for diagnosis. Such a picture is quite different from that of epidemic cerebro-spinal meningitis with its sudden and often severe onset; the occurrence within a day or two of severe pain and tenderness in the head and spine; general hyperesthesia and the rapid development of severe mental disturbances.

Lumbar Puncture. — Tubercular meningitis can be differentiated not only from other diseases, but also in most cases from other varieties of meningitis, by means of lumbar puncture. The most important microscopic difference between the cerebro-spinal fluid from cases of tubercular meningitis and that from other varieties of meningitis is in the character of the cells. In tubercular meningitis, lymphoid cells are present in varying numbers, depending on the amount of exudation in the pia, whereas polymorphonuclear leucocytes are only occasionally seen. In other varieties of meningitis polymorphonuclear leucocytes, or "pus corpuscles," are found in large numbers, and small, round, or "lymphoid cells," are relatively scarce.

Other differences, some of which are not always so constant, are that the fluid in cases of tubercular meningitis is, as a rule, less turbid; there is usually less albumin (quantitatively); cover-glass preparations, appropriately stained, may show tubercle bacilli; inoculation of guinea-pigs with the spinal fluid produces tuberculosis; and, finally, in the other varieties of meningitis one can oftentimes obtain a growth on culture media of the organism which has caused the disease.

The cerebro-spinal fluid in tubercular meningitis varies from almost clear fluid to fluid which is moderately turbid. It has been stated frequently that the fluid is often perfectly clear like normal fluid. This is contrary to the writer's observations which are based upon a considerable number of cases in which he has performed lumbar puncture during the past two and a half years. Oftentimes the fluid appears clear when examined by *reflected* light, but if the test-tube containing the fluid be held toward the light and gently shaken, one perceives in these cases a slight *diffuse* cloudiness, as if very minute particles of dust were suspended in the fluid, which move about with the motion of the fluid. This diffuse cloudiness must not be confused with larger white particles of epidermis which are often seen in normal fluid as well as in cases of meningitis. The diagnosis should never depend upon the cloudiness alone. A microscopic examination always should be made after allowing the test-tube containing the fluid to stand in a vertical position for several hours. A slight diffuse cloudiness may result from the admixture of the fractional part of a drop of blood, or from minute particles of cotton fibre and dust. Now and then cloudiness may be caused by the presence of micro-organisms and their products in the fluid in cases of general infection. In tubercular meningitis a varying amount of fibrin is formed in the fluid after standing. Oftentimes the web of fibrin is quite small and if the test-tube containing the fluid has been placed in an oblique position the fibrin adheres to the side of the tube and may be easily overlooked unless the sides and bottom of the tube are scraped with the platinum wire. This may account for some of the cases in which observers have failed to find evidences of inflammation microscopically, as well as macroscopically, in cases of tubercular meningitis.

Cover-glass preparations of the fibrin, prepared in the usual way and stained with methylene-blue (preferably Löffler's), show a varying number of small mononuclear cells (lymphoid cells), occasional polymorphonuclear leucocytes and fibrin. Tubercle bacilli may be found by appropriate methods of staining. One must be prepared to examine a large number of cover-glass preparations, however, oftentimes fifteen or twenty, before finding a bacillus.

Cultures made from the fluid on blood serum remain sterile.

Inoculations of from one to two cubic centimetres of the fluid into the abdominal cavity of a guinea-pig produce tuberculosis in from four to six weeks. The fluid should be inoculated as soon as possible after its withdrawal, before the web of fibrin has formed, or in a given case, if delay is unavoidable, it is advisable to break up the fibrin mesh with a wire, because tubercle bacilli are never numerous in the fluid and most of them become confined in the fibrinous web.

Prognosis. — Tubercular meningitis is practically always fatal. A limited number of cases of recovery have been reported in which the diagnosis has depended upon the clinical symptoms alone. A few cases have been autopsied in which, in addition to the evidences of recent tubercular meningitis, there have been found older lesions due to some inflammatory process in the meninges, presumably tubercular. Finally, two or three cases of recovery have been described in which tubercle bacilli were found in the cerebro-spinal fluid obtained by lumbar puncture.

CASE VII. Male, five years of age. Entered the hospital on February 20th. The family and previous history were negative. The present illness began seven days ago with headache. Five days later the patient vomited several times. While undergoing examination in the out-patient's department the child became much frightened. He clung about his mother's neck and uttered inarticulate cries. The legs became rigid. This was followed by clonic movements of the legs, especially of the right one. There were athetoid movements of the fingers. There was no loss of consciousness.

A physical examination made after he entered the hospital is as follows: "The patient is fairly well developed and nourished. The mental condition is normal. The tongue is coated. The throat is negative. The patella reflexes are normal. There is no ankle clonus. The pulse is strong and somewhat irregular. Aside from irregular action the heart is not abnormal. The lungs are not abnormal. The liver and spleen are not enlarged. The urine contains no albumin."

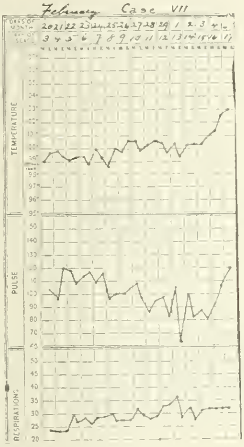
The patient continued in the same condition for five days. On the 26th, he complained of headache and vomited. The vomiting continued for two days at intervals. During these two days the child became quite apathetic and stupid. The eyes were not abnormal. The action of the heart became slow and intermittent. This condition of the heart lasted for three or four days. The bowels were constipated. The headache was constant but not severe.

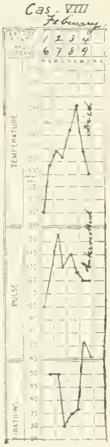
On March 2d the apathy had increased. The abdomen was retracted. The head was held rigidly and there was some tenderness in the neck. The *tâche cérébral* was well marked. He lay quietly in bed unless disturbed. The urine was passed involuntarily.

Lumbar puncture was performed on March 4th, and a slightly cloudy fluid was obtained. The fluid contained lymphoid cells and a small quantity of fibrin. During the following three days the only noticeable change was the progressive increase in the stupor.

On March 6th there was a rise in the temperature and pulse. The patient was transferred to the surgical side and trephined, and the ventricles were irrigated. After the operation the patient never regained consciousness. The pulse became slow and remained so for two or three days and then rose to 140. The child died quietly on March 12th. (The temperature chart for the last six days could not be found.)

Autopsy (Dr. F. B. Mallory). The body is much emaciated. The abdomen is retracted. There is an operation wound on the head above and behind the left ear. The valves and cavities of the heart are normal. The lungs are free from adhesions and light in color. There is little edema or atelectasis. There is a small quantity of secretion in the bronchi. Scattered beneath the pleura and throughout the lung substance are numerous tubercles varying in size from a pin-head to a pea. They are grayish-white and rather fibrous in appearance. No thrombi could be found in the pulmonary arteries or veins. The bronchial lymph-glands are much enlarged and "cheesy." The spleen is larger than normal and yellowish-gray in color and very nodular. On section there is little evidence of splenic tissue. The organ appears to be composed entirely of yellowish nodules varying in size from a pin-head to a pea. Many of the larger areas are softened. The kidneys show a very few tubercles beneath the capsule. The stomach and intestines are normal. In the region of the stomach are numerous enlarged glands, many of them "cheesy." A few miliary tubercles are present in the omentum. The liver is pale and contains numerous rather large tubercles beneath the capsule and in the substance of the liver.





Brain. The dura is tense. In the pia on both sides at the vertex, extending over the fissure of Rolando and dipping down into the longitudinal fissure are two areas about six centimetres long and four centimetres wide. These areas are dotted with yellowish checks the size of pin-heads. They are more numerous on the right side. Close to and in the longitudinal fissure they are fused together forming yellow areas which resemble fibrino-purulent exudation. No tubercles are to be found at the base of the brain or in the fissure of Sylvius. The operative wound in the brain was not examined as it was desired to harden the brain "*in toto*" for later examination. The inner surface of the dura on the right side shows a number of single and agglomerated tubercles.

CASE VIII. Male, five months old. Entered the hospital on February 1st. The only history which could be obtained was that a sister had died of meningitis some time previously; that the mother had died of tuberculosis within three days; and that the patient had been taken ill five days before with mild convulsions. The child had always been fed artificially.

A physical examination made at the time of entrance is as follows: "The infant is fairly well developed and nourished. There is considerable stupor. The pupils are widely dilated and do not react to light. There is slight convergent strabismus. There is no efflorescence on the skin. The anus and genitals are negative. The bones and joints are negative. There is no glandular enlargement. The anterior fontanelle is not tense and does not pulsate. There is a tendency to rigidity of the extremities. Movements of the head are not resisted and are not painful. The abdomen is but slightly retracted. Trousseau's phenomenon is present. The examination of the heart, lungs and abdomen is negative. The respiration is irregular and suggests an atypical type of Cheyne-Stokes respiration."

Lumbar puncture was performed, and about 15 c. c. of slightly cloudy fluid were withdrawn, in which a small quantity of fibrin formed later. Microscopic examination showed the presence of small mononuclear cells and an occasional polymorphonuclear leucocyte. There was no albumin in the urine.

The infant lived four days after it entered the hospital. The arms were rigid. It vomited on the second day. The stupor was marked. On the third day the temperature rose several degrees. On the fourth day the pulse became very weak and intermittent. The extremities were cool and livid. The temperature descended to normal, and the patient died quietly after an illness of nine days.

Autopsy (Dr. Wentworth). The infant is somewhat emaciated. Rigor mortis is present. The dependent portions are livid.

Head. On opening the dura there is no escape of fluid. The convolutions are somewhat flattened. The vessels are injected. The pia-arachnoid along the fissures of Sylvius and Rolando is infiltrated with opaque yellow fibrinous exudation. In the pia along the edge of the exudation, following the course of the vessels, and to a lesser extent on other portions of the vertex, are a number of slightly elevated grayish areas about one millimetre in diameter. Over the base of the brain, covering in the optic commissure, is a mass of yellow opaque fibrinous exudation. Numerous miliary tubercles are present in the meshes of the pia over the pons and medulla. The ventricles are distended with a somewhat cloudy fluid.

Body. Scattered over the pleural surfaces are numerous opaque yellowish-gray specks averaging one millimetre in diameter. There are scattered areas of atelectasis chiefly in the posterior and lower portions of the lungs, appearing as purple depressed areas. The consistency of the lung is but slightly increased over these areas. On section, the lungs contain considerable blood. The cut surface shows darker and lighter red areas. Distributed over the surface are numerous opaque gray areas averaging from two to four millimetres in diameter. Many of these areas show a pin-point opening in the centre. The heart, pericardium, stomach and intestines are not abnormal. On the surface of the liver and scattered through the substance are a number of miliary tubercles. Miliary tubercles are also present in the spleen and there are a few in the kidney. The mesenteric lymph-glands are somewhat enlarged. Many of them contain yellow opaque cheesy areas. The bronchial lymph-glands are considerably increased in size and are transformed into caseous material. The bladder is distended with urine. The peritoneum is normal.

Microscopic Examination. — Portions from the brain were hardened in alcohol; mounted in parafin and stained with Unna's polychrome methylene-blue. The changes are most marked in and about the blood-vessels. In many of the smaller arteries the intima is much thickened and the lumen is almost occluded. The perivascular lymph-spaces are distended and filled with numerous plasma and lymphoid cells. There is a marked accumulation of cells within the elastica and the endothelium is festooned. There is proliferation of the fixed cells outside the arteries and of the cells of the perivascular lymph-spaces. In the vicinity of the vessels there are a certain number of large cells with vesicular nuclei, similar to those found in cases of meningitis due to the diplococcus intracellularis but they are not so large or so numerous. Some of these cells contain lymphoid cells. In some sections there is a great deal of fibrin forming a meshwork in the vicinity of the vessels. In other sections there is very little. Necrosis of the exudation is marked. In some sections the vessels are surrounded by wide, sharply-defined zones of necrosis, containing fragmented nuclei and cells which are scarcely distinguishable. In other sections the necrosis is diffuse and not so extreme and extends more or less throughout the section. In addition to the changes in and about the vessels, there is a general infiltration of the meshes of the pia with lymphoid and plasma cells, together with proliferation of the fixed cells. There is but little change in the brain tissue.

(To be continued.)

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THE TOXIN AND ANTITOXIN OF TETANUS.[1]

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TETANUS has received perhaps more attention from experimental medicine in recent years than its direct practical importance would seem to warrant. As it lends itself very well to the study of toxins and antitoxins, this attention is readily comprehended and fully justified since the essential principles of serum-therapy have come to take a permanent place in therapeutics.

When invited by your chairman to make some remarks this evening upon this subject I realized that there was much material from which to choose, but little that might be of immediate interest. I finally decided to present the main facts concerning the toxin and its physiological effects and the more recent work which has to some extent given us a better comprehension of the nature and activity of antitoxins and omit all technical details that strictly belong to the laboratory. As my own work, carried on under the direction of the State Board of Health, has been restricted to the experimental phase, I shall pass by all references to publish accounts of the successes and failures of tetanus antitoxin in practice since these are sufficiently dwelt upon in current medical literature.

It will be remembered that tetanus was first produced by Nicolaier in 1884 by introducing a little soil under the skin of small animals. The bacillus, though recognized by him, was not isolated until 1889, when Kitasato successfully accomplished this difficult feat. Like most anaërobic bacilli, it produces a spore in one end of the terminally inflated bacillus. When fully formed this spore appears as a round, refringent body, nearly filling out the swollen extremity. In stained specimens the spore-bearing bacillus appears like a round-headed pin, and is quite easily distinguished from most other anaërobes by its form. These spores are quite resistant to destruction and are in all probability the stage in which the infection is carried into wounds. In cultures the multiplication of the bacillus is suppressed when the air comes in free contact with the culture fluid. It is, therefore, anaërobic. It produces a small amount of gas. A disagreeable, penetrating odor is diffused from the exposed fluid. The germs of this organism are widely diffused in nature. Hay dust, manured soil, and the excrement of animals are particularly favored with them. Besides man, horses and mules, cattle, sheep and goats are quite susceptible to infection; dogs much less so. Fowls are affected only by very large doses of the toxin.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, December 15, 1897.

In fluid cultures of the tetanus bacillus a substance appears diffused through the fluid whose presence is recognizable only by its pathogenic effects. These closely resemble the symptoms characterizing traumatic tetanus. Kitasato was the first to demonstrate this poison by removing from the culture fluid the bacilli and their spores by filtration. When introduced under the skin of mice and guinea-pigs the sterile filtrate produced tetanus in exceedingly minute doses. It is a very unstable substance. Exposure to light and air deteriorates it. Sunlight and air combined rapidly destroy its potency. As low a temperature as 60° C. (Kitasato), 65° C. (Vaillard and Vincent), destroys it completely in twenty minutes. Thermostat temperatures also speedily injure it. Even when kept in the dark and the cold, protected from atmospheric oxygen, its toxic power rapidly declines.

Brieger and his co-workers have made the most serious efforts to isolate the poison. A method recently published seems to lead to success, but the quantity of toxin obtainable was too trifling to submit to analyses. It was learned, however, that reducing substances and alkalies favor the poison, and oxidizing substances and acids injure it. It may be mechanically thrown down from the culture fluid by ammonium sulphate, calcium and aluminium phosphates and alcohol. With the ammonium salt precipitates may be obtained in which the poison appears in a very concentrated form and remains quite unchanged after thorough drying.

The pathogenesis of tetanus may be regarded as consisting primarily in the introduction of spores of the specific tetanus bacillus into a wound, the multiplication of the bacillus therein, and the absorption of the toxin manufactured during the multiplication. Considerable discussion has arisen over the conditions favoring multiplication in the wound. It has been claimed by some that the presence of other bacteria, such as the pyogenic forms, is needed to prepare the soil, as it were, for the tetanus bacilli. Such mutual aid is frequently observed in the bacteriological laboratory. In culture media freely exposed to the air anaërobes may grow if preceded by aërobes. Others claim that tetanus may develop without the aid of other bacteria. I have had occasion frequently to notice the favorable effect of bits of sterile tissue upon the multiplication of tetanus bacilli in culture fluids, and it is not improbable that dead tissues and exudates in a wound, whether sterile or not, may favor the tetanus bacillus.

There is considerable variation among animals in their sensitiveness to the tetanus toxin. Knorr determined that the relative sensitiveness of white mice, guinea-pigs and rabbits, calculated according to weight, was as 150 to 1,000 to 1. Horses are also very easily affected. Man may be regarded as very susceptible to the poison. Nicolas reported an accident on himself which led to tetanus. He pricked himself with the needle of a syringe charged with the culture filtrate. Though there was copious bleeding, contractions began after four days. In fourteen days they became general. The patient was kept under chloral, and finally recovered after forty-one days of illness. This powerful poison is inert, however, when introduced into the body by way of the digestive tract.

The obvious effect of the toxin is a rigidity or tetanic condition of the muscles. In inoculated animals the rigidity begins at the place of injection (local tetanus), spreads to adjoining muscles and eventually becomes generalized. Not a little labor has been expended in determining what structures are directly acted upon by the poison. Is it the muscular tissue itself, the end plates of the motor nerve, the nerve, or the neuron in the cord of which it forms a part? Observers are generally agreed that it is the nerve element in the cord which is attacked. This is stimulated to an ever-increasing excitability whereby contractions are induced in the muscles supplied by it. Gumprecht explains the local spasm by assuming a transmission of the poison along the lymphatic sheath of the nerve. Once in the cord, neighboring cells are affected. Goldscheider believes that the whole neuron is affected by the local action of the poison on the terminal filaments of its axon at the place of injection. In man, contraction of the muscles at the seat of injury is very rare, trismus being usually the condition first recognized. Here the nerve elements governing the muscles of the jaw are regarded as the most sensitive. Possibly the absorption of at first infinitesimal doses from the wound produces a local immunity sufficient to suppress active contractions.

I may, in passing, mention the not generally accepted hypothesis of Courmont and Doyon, according to whom the cultures contain, not the poison, but a ferment capable of producing the poison in the body. This hypothesis is mainly based on the period of incubation, which cannot be materially shortened by increasing the dose.

Leaving now the physiological action and going somewhat deeper in our inquiries as to the ultimate action of the poison on the nerve cell, we are confronted with recent expressions of Behring and Ehrlich and their associates, that the toxins form a chemical union with the cells, which union becomes more and more firm with the progress of the disease. This union incapacitates the cell in proportion to the amount of the poison combined with it. In different animals different cell territories may be involved. Thus in the rabbit, Dönitz believes these cells to be widely distributed in the body, while in the guinea-pig the nervous elements are quite exclusively involved. This he establishes further by showing that the toxin disappears much more rapidly from the blood of the less sensitive rabbit than from that of the guinea-pig. Knorr's studies on the quite resistant fowls have led him to similar views.

Of most interest to the medical profession is the fact that immunity to this poison may be gradually induced, and that in the course of this acquisition of immunity antitoxic properties appear in the blood. In this respect diphtheria and tetanus, so different in most respects, behave alike.

I need not rehearse the laborious efforts of Behring and his associates to produce immunity in various animals. Now the horse is used quite exclusively when the preparation of an antitoxin is the object in view. Knorr has shown that for each animal there is a certain dose of toxin which is best adapted to call forth the successful reaction of the organism and make it less and less sensitive. If this dose is exceeded, the animal becomes over-sensitive and may succumb to smaller doses than before the attempted immunization. For horses, minute doses treated with iodine trichloride are given at first, then the toxin without any attenuating additions. It is quite remarkable what enormous doses of the toxin a horse is able to bear after a time.

In the blood of the horse there appears after the administration of the toxin has been going on for some time an antitoxic substance analogous to diphtheria antitoxin. The existence of this substance has been demonstrated in several ways. By injecting it before the toxin, the effect of the latter is inhibited. By mixing it in suitable doses with the poison, the mixture is shown to be inert when injected into susceptible animals. Again, when pronounced symptoms of tetanus have already appeared either as a result of the injection of toxin or of spores of tetanus bacilli, the animals may be saved by the injection of the antitoxin. But the amount of antitoxin required to neutralize the toxin after it has been introduced into the body grows enormously with the interval of time which has elapsed since the introduction of the poison. Dönitz has recently demonstrated this upon rabbits. An amount of toxin was used which was equivalent to twelve times the minimum fatal dose. This was completely neutralized or made inert when one cubic centimetre of a 1-2,000 dilution of tetanus serum was mixed with it before injection. When the toxin was injected into the vein of one ear and the serum into that of the other ear, the amount of the latter needed to prevent tetanus was as follows:

When mixed with toxin before injection,	1 c.c. of a 1-2,000 dilution.
When injected 2 minutes later than toxin,	“ “ 1-1,200 dilution.
“ “ 4 “ “ “	“ “ 1-1,000 dilution.
“ “ 8 “ “ “	“ “ 1-200 dilution.
“ “ 15 “ “ “	“ “ 1-100 dilution.
“ “ 60 “ “ “	“ “ 1-50 dilution.

Dönitz explains this great increase in the demand according to the theory already quoted, that the toxin combines with certain cells in the body and that this combination grows firmer in time and hence requires more antitoxin to sever it. Large quantities of antitoxin by their bulk exercise a greater attractive force upon the combined toxin, and are still able to break the union, thus exercising true curative powers. In the same experiment he found that six hundred times the neutralizing dose of serum could still prevent the disease from appearing after an interval of two and three-fourths hours, although, as shown by the table, forty times the neutralizing dose was barely sufficient to prevent the disease after an interval of one hour.

Knorr has also made interesting experiments to demonstrate the curative power of the serum. He varied his tests by administering to one series of animals a single dose of toxin, to another a succession of doses, and to a third tetanus spores deprived of all adherent toxin by an exposure to 65° C. The spores were introduced under the skin on splinters of wood. When the symptoms appeared, or a certain length of time thereafter, serum injections were begun and given daily until the animal died or began to improve. When the minimum fatal dose was given, guinea-pigs were still saved when the serum injections began forty-eight to sixty-three hours later. In all cases, the disease was manifest when the treatment began. When the minimum fatal dose was given daily, the animals could be saved with daily injections of serum begun forty-eight hours after the first dose and twenty-four hours after the beginning of the symptoms even though the dose of toxin was injected daily for eight or nine days.

The neutralizing power of tetanus serum is best illustrated by an example taken from my notes:

September 17, 1897.

.0001 c.c. toxin fatal to a 570 gramme guinea-pig in 3 days.
.00008 “ “ “ 554 “ “ “ 3 “
.00005 “ “ “ 561 “ “ “ 4 “

2 c.c. toxin (40,000 minimum fatal doses) mixed with .2 c.c. serum fatal to 557 gramme guinea-pig in 3 days.

2 c.c. toxin (40,000 minimum fatal doses) mixed with .3 c.c. serum has no effect on a 470 gramme guinea-pig.

2 c.c. toxin (40,000 minimum fatal doses) mixed with .25 c.c. serum has no effect on a 491 gramme guinea-pig.

In this test .25 c. c. of the serum used neutralized 40,000 minimum fatal doses mixed with it before subcutaneous injection.

Ever since the discovery of antitoxic substances in the blood, the manner of their action upon the toxins has been a subject of great interest. To-day the same opposing theories are upheld by their respective adherents as then. It is maintained, on the one hand, by Roux and others in France, that antitoxins act indirectly by stimulating cell activity; on the other, by Behring, Ehrlich and their associates, that antitoxins act directly upon toxins. This view Ehrlich has been able to demonstrate recently with reference to ricin very clearly. Its application to other toxins is gaining favor. When we consider the very sharply defined quantitative results obtainable when toxins and antitoxins are mixed in definite proportions before injection one is at least inclined to accept this view as the better working hypothesis. In developing it further, Ehrlich has constructed an hypothesis as to the origin of antitoxin. One of the older views, that it was the toxin transformed by the organism, is rejected, and the other, that it is a strictly animal product, is accepted and its formation associated with cell life. If we regard the cell substance as a complex molecule with lateral chains, the toxin is assumed to unite with one or more of these, incapacitating them. If only minute doses are introduced into the body so as not to injure the cell too much, the cell substance thus lost by union with the toxin is reproduced by the cell. The repeated injection of gradually increasing doses of poison if cautiously done stimulates the cell, so to speak, to an ever-increasing production of that part of itself to which the toxin becomes attached. This overproduction of a specific cell substance leads finally to a shedding into the blood stream where the shed material appears as an antitoxin ready to combine with any toxin for which it possesses definite affinities. This substance, as we know, is effective not only in the blood of the producer but in the blood of other beings into which it is introduced.

The disease of tetanus is less amenable to treatment with antitoxins than diphtheria because of the much larger quantity of serum needed when the symptoms have once appeared. Behring has insisted that not less than five hundred units should be injected at the outset and preferably directly into the blood stream. To obtain such a concentrated product the manufactory near Frankfort, Germany, which supplies the world with diphtheria antitoxin under Behring's general supervision, dries the serum to a powder which in the finished state contains 100 units in one gramme.[2]

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[2] Five grammes of this, or five hundred units, are sold in Germany for about $7.50.

Liquid serum for immunizing purposes is dispensed in doses of 25 units contained in five cubic centimetres. The unit, as settled upon by Behring and Knorr, is quite different from that of the diphtheria unit. One-tenth of a cubic centimetre of the normal serum instead of neutralizing 10 fatal doses of toxin as in diphtheria is expected to neutralize, for 250-gramme guinea-pigs, about 100,000 minimum fatal doses; for white mice, 300,000.

Under the direction of the State Board of Health I have been working upon this subject mainly for the purpose of obtaining a serum which might be tried in our hospitals to test the general efficacy and promise of the serum treatment of tetanus. Some of this serum has been subject to the call of those willing to use it since midsummer. The strength of the liquid serum at that time was equivalent to from one-half to one Behring-Knorr unit per cubic centimetre, or calculated according to one gramme of the body weight of a guinea-pig of 250 grammes, its strength was 1 to $5 \times 250 \times 100,000 = 1$ to 125,000,000. With continued treatment of the horse with larger doses of toxin and the eventual drying of the fluid a stock of strong antitoxin will become available for use in the State.[3]

Ready access to such serum is especially desirable whenever injuries have occurred which may lead to tetanus. Immunization is possible with comparatively small doses. The main obstacle now confronting the experimenter is the instability of the toxin. This can be partly overcome by additional labor on his part, and the vexatious delays occasioned by it can be prevented by much additional expense, so that the remedy at best will remain expensive. I am inclined, on the whole, to regard the researches upon tetanus as of most value in advancing our knowledge upon toxic and antitoxic substances and in supplying new data for the treatment of other diseases.

PUBLICATIONS REFERRED TO IN THE TEXT.

Kitasato. Ztschr. f. Hygiene, vii, p. 225; x, p. 267.
Vaillard. Annales de l'Inst. Pasteur, 1891-92.
Brieger u. Boer. Deutsche med. Woch., 1896, No. 49.
Knorr. Habilitationsschrift, Marburg, 1895.
Knorr. Fortschritte der Med., 1897, No. 17.
Nicolas. C. R. Soc. Biol., 1893, p. 844.
Gumprecht. Arch. f. Physiol., lix, 1895, p. 105.
Gumprecht. Deutsche med. Woch., 1895, No. 42.
Goldscheider. Ztschr. f. klin. Med., xxvi.
Courmont et Doyon. C. R. Soc. Biol., March, 1893.
Behring. Gesammelte Abhandlungen.
Behring u. Knorr. Fortschritte der Med., 1896, No. 43.
Ehrlich. Fortschritte der Med., 1897, No. 42.
Ehrlich. Klinisches Jahrbuch., vi, 1897.
Dönitz. Deutsche med. Woch., 1897, No. 27.
Lambert. New York Medical Journal, 1897, i, p. 754.

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[3] In a recent article in the *New York Medical Journal* Lambert gives a brief *résumé* of the work done in this field by him for the Board of Health of New York City. In this article he greatly overestimates the strength of the serum produced, claiming a strength of 140 units per cubic centimetre or 8,000 units in a dose of 20 cubic centimetres. This error is excusable on account of the obscure way in which facts concerning it have been published by Behring and Knorr. Lambert states that one unit protects 1,000,000 grammes white mice, and that one cubic centimetre of his serum protecting 140,000,000 grammes, contains therefore 140 units. Behring stated some years ago that an antitoxic unit protected 1,000,000 grammes white mice when the serum is injected fifteen minutes *after* the toxin. This is quite a different thing from injecting a mixture, and a much more severe test. According to a letter from Dr. Knorr, which confirms the statements made in his *Habilitationsschrift* (1895), the present antitoxic unit, which is about the same as that defined by Behring, instead of protecting 1,000,000 grammes white mice must protect 45,000,000 to 50,000,000. Hence the serum referred to could have contained at most between two and three units, instead of 140, as claimed, and a 20 cubic centimetre dose would contain between 40 and 60 units. While there is no absolute necessity for adhering to the arbitrary unit of Behring-Knorr, one unit being as good as another, it should be remembered that when a comparison of the results of treatment is sought after only a uniform standard can make such comparison of any value whatever.

TWO CASES OF TETANUS TREATED WITH ANTITOXIN.[1]

BY F. B. LUND, M.D.

The two cases reported in this paper were both treated at the Boston City Hospital, and were treated with antitoxin furnished by the Massachusetts State Board of Health. The first case, which recovered, can hardly be classed among the most acute cases, as, although the incubation period was only five days, the progress of the case was not marked by rapidity.

The second case belongs to the most acute or fulminating type, in which toxin absorption is from the first so rapid that it is impossible to administer antitoxin units in sufficient amount to neutralize the toxins.

The first case occurred in the service of Drs. M. F. Gavin and Paul Thorndike, and the second in that of Dr. W. P. Bolles; and I am indebted to these gentlemen for the privilege of reporting the cases.

Case I. P. M., age fifty-one, laborer, entered the Boston City Hospital on July 25th. Ten days ago, while at work driving piles, he had fallen into a ditch, and as he fell the end of one of the piles struck him in the occiput, and one over the right malar bone, causing a lacerated wound, which was sutured by a physician to whom he was taken that day. The physician applied so tight a bandage that he was unable to open his mouth, and could take only liquid food. Five days later the bandage was removed and the stitches taken out. On that day the patient found that he still could not open his mouth, and suffered some pain in the wound. On the seventh day after the injury he came to the Out-patient Department at the Boston City Hospital, and was seen by Dr. J. B. Blake, who found the wound septic, with great swelling of the cheek, together with inability to open the mouth more than a slight distance, which was ascribed to the swelling of the soft parts at the angle of the jaw. The wound was irrigated, and dressed with moist antiseptic gauze.

On the morning of entrance the jaw was found firmly set, so that the mouth could be opened only about one-eighth of an inch, by tonic contraction of the masseters and temporals; there was also tonic contraction of the sternomastoids and posterior cervical muscles, and complete right facial paralysis, and partial deafness of right ear. The wound over the right malar bone was partly healed, and covered by a scab. The general condition was good, temperature 99° and pulse 80. On the afternoon of the day of entrance 20 c. c. of antitoxic serum furnished by the Massachusetts State Board of Health were injected under the left scapula.

On the following day there was no apparent change in his condition. An attempt to open his mouth sufficiently to put his tongue out resulted in his biting his tongue. Severe pains in the head and neck was complained of.

July 27th. There was less pain and stiffness of the neck, and he was given 20 gr. of bromide of potassium.

July 28th. He again bit his tongue, and was given 40 c. c. of antitoxin. At midnight on July 28th, he had great pain in his head and neck, had bitten his tongue several times, and bitten his finger while trying to pry open his jaw. A gag was introduced to prevent his biting his tongue, and 40 gr. of bromide of potassium and 60 c. c. of antitoxin were given.

July 29th. Much more comfortable. Bit his tongue again in the afternoon, and was given 75 c. c. of antitoxin.

July 30th. Could open his mouth half an inch, but complained of stiffness and pain in the face and back of the neck, and was given 55 c. c. of antitoxin.

August 1st. The skin of the back was reddened over a large area surrounding the site of the injections. A sinus remaining in the wound in the cheek was curetted, irrigated with peroxide of hydrogen, and packed with sterile gauze.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, December 15, 1897.

August 3d and 4th. The patient felt weak and nervous, and had stiffness of the neck muscles and difficulty in breathing. On the 3d he was given 60 c. c. of antitoxin in three doses of 20 c. c. each; and on the 4th he was given 40 c. c. of antitoxin. His body was covered by an erythematous eruption, wheal-like in places, and attended by itching.

August 5th. He received 60 c. c. of antitoxin. Patient seemed a little stronger, but was still weak and nervous.

August 6th. Marked improvement took place. Antitoxin, 20 c. c.

August 7th. Condition the same as yesterday. Antitoxin, 40 c. c.

August 8th. He had markedly improved; and on the 9th the temperature had fallen to normal, where it subsequently remained.

From this time on improvement steadily continued; and on August 31st he could open his jaw one and one-half inches, and the facial paralysis had improved so that he could nearly close his right eye.

On September 8th he was discharged well, except for slight paralysis of the muscles of the eye and mouth.

In this case the urine was from time to time carefully examined by Dr. J. B. Ogden in order to determine whether the injections of such large amounts of horse serum would result in renal irritation. On August 3d the urine showed the amount in twelve hours to be 345 c. c., containing 12.79 gm. of urea. This would correspond to a twenty-four-hour amount of 690 c. c., containing 25.58 gm. of urea. The specific gravity was 1.027; there was a very slight trace of albumin, and the sediment contained a few hyaline and fine granular casts and an occasional blood globule. During the following days the specific gravity fell to about 1.015 where it continued, and the albumin became diminished to the slightest possible trace. On August 18th the urine was normal.

Beyond, then, a slight transient active hyperemia, we have no evidence of renal irritation which might be attributed to the antitoxic serum.

Case II. S. B., age twenty-eight, carpenter, appeared in the writer's out-patient clinic, on September 1st, complaining that since yesterday noon he had been troubled with slight stiffness of his lower jaw, which had troubled him about eating. He felt perfectly well otherwise, and had slept well last night. He had a slight pain in the small of his back, and this morning could not open his jaw one-half an inch, he thought. When asked whether he had received any injury, he at first denied that he had, but later remembered that six days ago while working in a new building he had stepped on a nail which had penetrated his right foot at the base of the great toe. He had treated the wound himself with turpentine and continued his work. The wound had healed without any pain or further trouble.

On physical examination there was found slight rigidity of the masseters, but none of the neck or back muscles. There was a punctured wound on the sole of the foot at the base of the right great toe, which was clean, and had apparently entirely healed.

The man's serious condition having been explained to him, he consented to enter the hospital at once, and he was immediately taken to the accident-room. The wound was thoroughly reopened, curetted, irrigated with corrosive-sublimate solution, and packed with iodoform gauze. He was given subcutaneously 40 c. c. of antitoxin.

In the evening of the same day he had severe pain in the back of neck and back, and was given 20 c. c. of antitoxin at 7 P. M. Later he had spasms of the jaw and bit his tongue. He was given 20 c. c. of antitoxin. His condition, however, continued to grow worse, and the next morning he was on the verge of opisthotonos; the pain was severe and constant, and there was marked rigidity of the spinal muscles. Occasional convulsive movements with throwing back of the head occurred at intervals of one to one and a half minutes; the jaw could not be opened at all. Antitoxin, 100 c. c., causing temporary increase of symptoms. In the afternoon he was more comfortable and the spasms less frequent. He was given 40 c. c. of antitoxin, and the dose repeated at 9 P. M., making 180 c. c. that day.

September 3d. The pain was worse, the spasms were increasing, and 40 c. c. of antitoxin were given. No interruption, however, took place in the course of the disease, and in the afternoon every one or two minutes there was spasmodic contraction of the muscles of the neck and back, hyperesthesia of the abdomen and severe pain. The head was slightly retracted, and he could not move it. The jaw was firmly set, and swallowing very difficult. Antitoxin, 100 c. c. Later in the evening the pain was so severe that a quarter-grain of morphine was given; and after this he dozed occasionally, being awakened by spasms.

He grew weaker during the night, and died at 4.45 A. M., September 4th.

The autopsy in this case was performed by Dr. F. B. Mallory, and the organs sent for examination to Dr. J. H. Wright, who reported as follows:

Microscopical Examination of a Case of Tetanus from the Pathological Laboratory of the Boston City Hospital.

Sections of the spinal cord in the cervical region, of the cerebral hemispheres, of the pneumogastric, optic, facial, fifth, lumbo-sacral, and posterior tibial nerves, and of spinal and Gasserian ganglia were prepared according to the method of Marchi. This method is employed to demonstrate degenerated myelin in nerve tissue, if present. It depends upon the fact that degenerated myelin is stained black with osmic acid.

The microscopical examination of the sections from the nerve tissues above mentioned showed in all of them well-marked degenerative changes. These consisted in the presence throughout the white matter of the cord and cerebral hemispheres, and among the fibres of the nerves, of more or less numerous black or grayish granules and globules, of variable size and shape. These globules and granules were, for the most part, small in size, the largest not exceeding a good-sized nerve fibre in diameter. In the sections of the spinal cord these black bodies are sometimes within the sheath of the nerve fibre and may have a crescentic shape — sometimes they lie between fibres. In the nerves they seem to be mainly between the fibres. The fibres of the pneumogastric and optic nerves also show numerous swellings and irregularities.

The foregoing appearances are indicative of acute degenerative processes. The large cells of the ganglia show no good evidence of fatty degeneration.

Sections of the thoracic and lumbar portions of the spinal cord and of the cerebral cortex were stained according to the method of Nissl, slightly modified. This method is chiefly designed to show the condition of certain granulations in the body of the large nerve cells, changes in the size and appearance of which are signs of degeneration. The microscopical examination showed a doubtful faintness in the staining and definiteness of the granulations of the large cells of the cortex cerebri, while the nerve cells of the spinal cord seemed quite normal.

It cannot be said that any well-marked pathological changes were found in the nerve cells in any of the sections.

The microscopical examination of portions of the liver and spleen revealed nothing remarkable.

A section of the kidney showed cloudy swelling of the epithelium of the tubules; and a section of a lymphatic gland showed hyperemia.

The efficacy of antitoxin in the treatment of tetanus can only be decided by the comparison of a very large number of cases.

The mortality of the disease, as treated by the older methods, has been roughly estimated at about 80 per cent. for the acute, 40 per cent. for the milder, and 60 per cent. for all cases (Lambert).

Lambert gives the mortality in 114 cases treated with antitoxin as 46 per cent. Of these, 47 were acute cases with a mortality of 74.5 per cent., and 61 chronic, with a mortality of 16.4 per cent.

If cases dying of intercurrent disease, and all dying within twenty-four hours after treatment was begun, are excluded, we have in the acute cases 31 cases with 12 recoveries, or 61.3 per cent., and in the chronic cases 40 cases with 38 recoveries, or 5 per cent. The total mortality on this basis of cases treated by antitoxin becomes 29.57 per cent.

With regard to the efficacy of the antitoxin treatment in Case I narrated in this paper, we cannot deny the possibility that the case would have recovered under the older methods of treatment, as it belongs on the whole to the milder type of cases, and treatment was not begun until the tenth day. The progress of the second case was so rapid that it is doubtful if any treatment would affect it. The first case received 470 c. c. of antitoxin during fourteen days, the largest amount given at any one dose being 75 c. c. The second case received 280 c. c. during three days, the largest dose given at any time being 100 c. c. The initial dose in Case I was 20 c. c., and in Case II 40 c. c.

In view of Dr. Smith's statement on p. 295 of the Journal, the smallest effective dose can hardly be less than 100 c. c., even of the strongest antitoxic serum, so that the initial dose in cases treated in the future should be larger, unless some method is devised of obtaining a serum of greater antitoxic strength, which in the present state of our knowledge seems improbable.

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A CASE OF SEPTICEMIA (GONOTOXEMIA?) TREATED WITH THE STREPTOCOCCUS ANTITOXIN: RECOVERY.[1]

BY AGNES C. VIETOR, M.D., BOSTON, MASS.,
Acting House Surgeon, New England Hospital, Boston; late Instructor in Physical Diagnosis and Surgery, Woman's Medical College of the New York Infirmary, etc.

The case which I report is one observed in the service of Dr. Mary A. Smith, at the New England Hospital. A woman; twenty-seven years of age; married five years; mother of three children, youngest sixteen months old; no abortions. Family history, general personal history and menstrual history — all negative. Her child-bearing history, also, is negative till the birth of her last baby, sixteen months ago; since that time she has had a dull pain across the lower abdomen whenever she lay down; she felt comfortable only when lying in the prone position. Since June of the present year, she has been exposed to the gonorrheal infection, for at that time her husband had an acute attack of gonorrhea.

Aside from the above, her pathological history is uneventful till the menstrual period of October 8th, last. This set in as usual, but instead of ceasing on the fifth or sixth day, the flow continued for ten days. On the tenth day she did some washing, work to which she was not accustomed; that night she went to bed with severe abdominal pain. The flow ceased for three days and then returned for fifteen days longer. She remained confined to her bed, suffering the abdominal pain at intervals and steadily growing weaker and more emaciated. She had night-sweats from an early period of her illness. There was constipation, with much straining; urination was painful, delayed and often involuntary.

November 4th, she was admitted to the New England Hospital. She was brought in on a cot, and was seen to be a slender, dark-haired woman, of medium height. Her face was thin and of a sallow, cachectic hue; her cheeks and temples were hollow and her eyes set far back in the orbits. In general, she presented an appearance of marked emaciation and exhaustion.

Physical examination showed: Temperature, 99.4° F; pulse, 92; respiration, 20. Tongue coated yellowish-white and rather dry. Lungs, heart and arterial walls negative; pulse weak, irregular and of very low tension. Liver, spleen and kidneys negative. There was a marked sinking in of the abdominal wall from the ensiform to the umbilicus, and a most pronounced pulsation of the abdominal aorta. Tenderness over the whole lower abdomen. Pelvic examination showed marked laceration of perineum and cervix; uterus retroflexed, rather large and hard; in the region of the appendages, on both sides, were irregular, tender masses, that on the left side being the larger. Urine loaded with amorphous urates, specific gravity 1.030; otherwise negative.

A diagnosis of pus tubes was made, and removal advised.

November 6th, after curettement of the uterus, celiotomy was performed and the appendages removed. All the pelvic organs were matted together with firm, vascular adhesions. The tubes were not large, but both fimbriated extremities were open and the slightest handling caused pus to exude from these orifices. Every effort was made to prevent contamination of the neighboring regions and of the abdominal wound. Dr. Harriet E. Lothrop reported both tubes convoluted and moderately distended with thick yellowish-white pus. Both ovaries were highly injected and contained cyst-like foci of pus; and a collection of pus, the size of a hazel-nut, enclosed in a pyogenic membrane, was embedded in the thickened left broad ligament between the ovary and the distal end of the tube. The pus contained gonococci; no other micro-organisms were discovered. The curettings showed an endometritis, with glandular hyperplasia.

The morning of the operation the patient's pulse was alarming; it became weaker and more irregular, and suddenly rose to 160. After the operation, for about twelve hours, it grew slower, ranging from 72 to 80, and improving in quality.

The morning of the second day, however, the temperature, which had descended to 97.2°, began to rise, and in a few hours the pulse also began to climb upward, and to grow very poor in quality. At the same time, the constitutional depression began to be pronounced. The patient was sleepless, restless, fretful and moaning, complaining of thirst, of heat and of pain in the abdomen, which became distended and tender to touch. The pulse was so bad that stimulation with strychnine and whiskey had to be pushed vigorously.

The third day the patient began to vomit, rejecting everything. The rectum also rejected everything, so that nutrient enemata could not be retained. Respiration rose to 32; the temperature became irregularly remittent; the pulse assumed the same type.

The fourth day the pulse grew weaker till it became a mere thread and uncountable at the wrist; at the apex, the heart registered 180. Under large doses of strychnine, hypodermatically, it rallied somewhat. A condition of profound septicemia developed, and steadily grew more marked. The blood was examined for micro-organisms but none were found.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, December 15, 1897.

The morning of the fifth day nine cubic centimetres of streptococcus antitoxin were injected between the shoulders. No appreciable effect followed, for while the temperature fell from 101° to 99.4°, the remission of the previous day had been from 102.2° to 100°; the pulse varied from 112 to 136, being 132 at 9 P. M. At this time the abdominal wound was found to be discharging pus from its lower portion. The edges of the wound were puffy, reddened and succulent. An examination of this pus did not show any micro-organisms; 8.5 c. c. of antitoxin were given.

No effect from the antitoxin was apparent. The temperature, next day, was not above 101.6°, but the pulse rose to 150 and was very weak and irregular. The patient continued restless and crying out with pain in the abdomen, or lay in a semi-stupor, with the eyeballs rotated upward and the eyelids open. Prostration was profound; vomiting of green or brown fluid; nothing retained but occasionally a little champagne or albumin water. Urination largely involuntary. Emaciation was increasing. Pressure sores began to form on right ear and left shoulder. Tongue dry and white. Lips dry, brown and peeling. Hands desquamating in flakes. In the evening eight cubic centimetres of antitoxin were given.

The next morning the pulse dropped suddenly from 128 to 100; the temperature slowly fell to 100.4°, and there set in a decided improvement in the patient's general condition, especially in her appearance. Vomiting decreased; pain lessened; she slept at intervals; the expression of her face and eyes became less stupid. During the day subcutaneous infusion of 720 c. c. of normal salt solution was followed by diminished thirst, temporary increase in volume and steadiness of pulse and diminished nervousness and restlessness. However, the temperature and pulse again mounted, so that at 9 P. M. the former was 101.8° and the latter 140; 7.5 c. c. of antitoxin were then given.

The next morning there was again the sudden dropping of pulse and temperature, both registering 100. Diarrhea had set in a little before midnight; stools very fluid, dark green or brown, offensive, painless, often involuntary; there were present marked borborygmi and visible peristalsis. The abdomen was still distended. The stomach showed an inclination to retain food, but it was so distended, bulging up above the level of the ensiform, that it was gently washed out with a weak alkaline solution, after which, small quantities of liquids were retained. Left knee and shoulder abraded from friction of the bedclothes. Pains and lameness all over. Subcutaneous infusion of 960 c. c. of normal salt solution had little effect. Wound sloughy, grayish, discharging thick, creamy pus and burrowing downward and inward. Edema of skin and subcutaneous tissue for about an inch all around the wound. Towards night the temperature and pulse mounted to 102.2° and 140. No antitoxin was given.

Next day there was very little change in pulse and temperature; diarrhea continued; vomiting returned somewhat. Prostration seemed more marked; skin cold and clammy; pulse weak and irregular, 130 to 136; temperature in the neighborhood of 102°. Wound was nine centimetres long and six and a half centimetres wide; the median portions of the recti muscles were bare and, in the lower half of the wound, separated so that the transversalis fascia was visible. The floor of the wound extended downward and inward along this fascia for about two and a half centimetres. In the evening eight cubic centimetres of antitoxin were given.

Next morning there was again the sudden dropping of temperature and pulse, the temperature reaching 100.2° and pulse 98. But, again, both soon began to rise, temperature to 103° and pulse to 140, and, on the whole, both remained higher than on any previous day. No antitoxin was given.

The eleventh day brought no special change. The wound ceased sloughing and burrowing, but the surface was smooth and glazed. The patient had profuse sweats. In the morning nine cubic centimetres of antitoxin were given, and in the evening seven and a half cubic centimetres more. This time there was no sudden dropping of pulse and temperature. The temperature fell gradually during the twenty-four hours to the neighborhood of 100°, but the pulse remained in the neighborhood of 130. But there was a marked change in the general condition. The patient had a very comfortable day, sleeping a great deal. Appetite improved; tongue began to clean; the wound began to granulate.

This improvement continued next day, although the temperature reached 102° and the pulse 130. A carbuncle appeared on the right hip, behind and above the level of the great trochanter. It was incised and drained and was found to extend down to the deep fascia. Five days later a sinus was discovered opening into the posterior wall of the carbuncle. It extended upward and backward for about seven and a half centimetres, and its floor also was formed by the deep fascia. Sixteen cubic centimetres of antitoxin were given in the evening.

The following morning the temperature dropped suddenly to 100° but the pulse did not descend below 120, and gradually ran up to 140, the morning of the fifteenth day. The evening of this day 20 c. c. of antitoxin were given. There was no sudden dropping this time, but the temperature gradually fell to 99.8° and the pulse to 120; the latter soon rose to 144.

After this the history of the patient becomes somewhat monotonous. Although the diarrhea lasted a week longer, she continued to gain in general condition, and her pulse and temperature passed into a neutral zone, neither very high nor yet normal.

Now, in the sixth week of her illness, the temperature frequently touches the normal limits, but the pulse still runs from 100 to 120 and remains rather weak and often irregular. She is convalescing well, but she gains in weight very slowly; her skin continues to have a grayish-yellow cachectic hue; the carbuncle and sinus are slowly closing; pressure sores are healing very gradually. The abdominal wound has granulated in, but the skin and subcutaneous tissue are still gaping. About ten days ago the edges were loosened and freshened and drawn together and sutured, but the retractility of the tissues is so extraordinary that they pulled out from the sutures. The gap is slowly contracting. In the pelvis there appears to be a slight exudation in the region of the stump, on the right side, but it is not marked. It has not seemed to change since first noted towards the end of the first week.

Constantly, throughout the progress of the case, was scrutiny made of the various viscera, including the kidneys, but nothing indicating any organic lesion has ever been made out. Even to-day this heart that has given me so much anxiety shows only a shortened and high-pitched first sound and a little enlargement of the left ventricle.

The diagnosis of an intoxication — a toxemia — seems inevitable. Bearing in mind the history of the case, the direct history of the infectiousness of the husband, the pathological findings and the peculiar course of the disease, it is impossible to avoid the suggestion that we have been dealing with a *gonotoxemia* — if I may be allowed the word.

De Christmas,[2] in a report of his researches on the gonococcus toxin and antitoxin, says that while still unable to produce gonorrhea, as ordinarly understood, in any of the lower animals, yet the introduction of the gonotoxin produces certain definite effects, whether this gonotoxin be contained in the bodies of living or dead germs, in the filtered culture medium, or in the form of a glycerine extract of the precipitated toxin.

To be brief, he describes these effects as being constitutional or constitutional and local, according as the toxin is injected directly into the blood, or as it is applied locally to one of the tissues, as the subcutaneous tissue, the serous membranes, the anterior chamber of the eye, etc.

The constitutional symptoms are those of an intoxication, the gravity of which is proportionate to the dose of toxin; it is manifested by fever (by subnormal temperature, if the dose is excessive and quickly fatal), a rapid and pronounced loss of weight, complete anorexia, profuse diarrhea and the development of a state of cachexia and emaciation. The animal dies speedily or recovers only very slowly, and often dies in a state of gradual decline, the autopsy showing no apparent organic lesion, the principal manifestation being a pronounced anemia with considerable diminution in the number of red globules. The immediate cause of death appears to be a pulmonary hyperemia.

The local reaction to the toxin is a pronounced inflammation with the formation of thick, yellow pus. Pus and exudate are sterile. These lesions have no tendency to spread; they disappear slowly and, when in the subcutaneous tissue, are characterized by a cicatricial retraction of the integument which is very slow in disappearing and which remains tender a long time.

While it is true that the effects of toxins on man and on the lower animals are not exactly parallel, nevertheless, they are akin, and the analogy between the condition of this patient and the results of De Christmas's experiments is striking.

As for the streptococcus antitoxin — it was used, first, because the streptococcus seems to be ubiquitous, and I did not feel able absolutely to exclude the possibility of its presence here; but, also, it was used because I have been much impressed with the experiments of Roux and Calmette, showing that "the serum of animals that have been immunized against certain viruses or poisons may be able to give immunity against certain other viruses or poisons." Thus, Roux has shown that tetanus antitoxic serum is antitoxic also to snake venom; and that by rendering a rabbit refractory to rabies, it becomes immune against snake bites.

In the absence of a gonococcus antitoxin, the streptococcus antitoxin seemed the most available. Its effect on the pulse and temperature has been shown. Its effect on the general condition and appearance of the patient was more remarkable, and more impressive to those who saw it because it was so plainly evident and more permanent. It recalled the assertion of Metchnikoff that we have to do with not "antitoxins" but "stimulins," of which several may produce the same effect upon living cells.

Note.— Acting on De Christmas's finding that in animals dying from gonotoxemia, the principal manifestation was a pronounced anemia with considerable diminution in the number of red globules, I began, December 18th (a few days after making the above report), giving inhalations of oxygen to this patient.

During the first administration, of ten minutes' duration, which I gave myself, I was surprised to note that the pulse fell from 116 to 104; during the night following this, it registered 96, falling below 100 for the first time since under the administration of antitoxin, on November 15th. She was ordered oxygen for ten minutes' duration, four times a day.

In a few days, a change was noted in the skin, the grayish, cachetic hue markedly clearing up. The pulse maintained a lower range, generally between 90 and 100. Its irregularity, however, continued. The patient convalesced slowly and left the hospital January 25, 1898.

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Clinical Department.

VELANDER'S NEW METHOD OF ADMINISTERING UNGUENTUM HYDRARGYRI.[1]

BY RICHARD HOGNER, M.D.

I take the liberty to present a very interesting case — a pillow-case — which I think will be in the future a valuable instrumental means of administering unguentum hydrargyri.

Dr. Edv. Velander, professor in venereal diseases in Stockholm, Sweden, and head doctor at the very great St. Göran's Hospital for venereal diseases in that city, has recently devised this pillow-case for the above named purpose.

My own experience in its use is limited to two patients. However, I found it so practical, effective, convenient and clean, that I do not hesitate to communicate the facts to you already.

Professor Velander is well known among the profession for the work he has done in this specialty of our art. The Velander method of curing soft chancre by heat is widely spread and adopted with or without modifications. His investigations some years ago on the absorption of mercury in unguentum hydrargyri led him to the conclusion that it is mostly, if not entirely, absorbed by inhalation of the evaporated mercury, and induced him to use in the administration of this drug a combined method of rubbing in the ointment and spreading it out on different parts of the body, and later the simple method of only spreading it over the skin. These facts are now well known.

This year he has finally given up spreading the ointment over the skin and relies entirely on the application of the ointment to the inner surface of a pillow-case, which is to be fastened about the patient's body, from the neck, downward. This method is now so generally accepted in Sweden that it is there almost the only one at present used in the general administration of mercury externally.

The pillow-case is made of cheap cotton cloth. It measures 38 by 54 centimetres (15 by 21 inches), and has ribbons for its suspension over the chest. The ribbons are placed two laterally at each edge, 12 centimetres (4¾ inches) above the lower corners, and four upward, namely, two opposite each other at the upper edges, 6 centimetres (2¼ inches) from the corners. The ribbons are about 64 by 1.5 centimetres (25 by 0.5 inches).

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[2] De Christmas: Contribution à l'Étude du Gonocoque et de sa Toxine, Ann. de l'Institute Pasteur, Paris, August, 1897, p. 609.

[1] Read before the Clinical Section of the Suffolk District Medical Society, December 15, 1897.

The pillow-case is suspended from the shoulders with the external part of its medicated side toward the body — that is, under the clothing — and is held in position by the ribbons which are tied around the waist and over the shoulders down to the waist ribbons. It is worn consecutively for ten days, alternating every twenty-four hours, from the front of the chest to the back, fresh ointment being supplied every night without wiping off the old. After ten days a new pillow-case is applied.

Baths are to be taken once or twice a week, the skin under the pillow-case being washed every night.

Dr. Velander uses, besides this ointment treatment, all necessary local treatment, etc., and with the ordinary attention to the mouth, he has not met more stomatitis than usual.

The quantity of ointment used is six grammes (1¾ drachms), of a strength of two hydrargyrum to four *constituens;* and, as before said, it is spread every night over the same half of one of the insides of the pillow-slip. The best way to spread the ointment over the inside of the pillow-case is to spread it out over the outside and afterward turn the pillow-case outside in.

This simple treatment is very convenient for the patient, as he can go about comfortably as usual, is not bothered with any painstaking rubbing, keeps himself easily clean, and at the same time can easily conceal his treatment.

This pillow-case method is also very satisfactory for the doctor, as the mercury seems thus to be absorbed quicker, with less irritation.

Medical Progress.

REPORT ON PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D.

RETROVERSION AND RETROFLEXION OF THE UTERUS.

S. Pozzi[1] considers that retroversion and retroflexion of the uterus are not distinct morbid entities. They occur under two conditions: (1)) relaxation of the ligaments or flexibility of the cervix, without adhesions, with or without lesions of the appendages, that is, a movable retrodeviation; (2) posterior adhesions, especially around the appendages, after a perimetritis or perioöphoro salpingitis, that is, a fixed or adherent retrodeviation. Movable retrodeviations without lesions of the appendages might better be termed excessive mobility of a uterus which has lost its fixity. The principal phenomena of a nervous and reflex character which they cause are independent of the direction of the deviation and are due to the mobility. All surgical treatment which allows subsequent development of a pregnant uterus can have only temporary results, as constant traction causes relaxation of the artificial attachment, and all which gives durable results interferes with subsequent gestations. The treatment should be directed to the cure of the metritis or inflammation of the appendages, restoration of the lacerated or relaxed perineum by a plastic operation, and the use of a pessary which fixes the cervix by distending the posterior cul-de-sac, and an abdominal belt to regulate intra-abdominal pressure. In adherent retrodeviations the adhesions may be broken up by massage or the sound, but this is dangerous. The principal morbid element is not the deviation or adhesions, but the condition of the uterus, tube or ovary, and it is to the latter that treatment should be directed. If the appendages are chiefly diseased with metritis, laparotomy is usually indicated, breaking up adhesions, and performing ignipuncture and resection of partially diseased ovaries, or castration if the appendages are gravely involved. The uterus will then spontaneously resume its normal position. With bilateral lesions of the appendages and chronic metritis in women near the menopause or later, vaginal hysterectomy may be preferable.

Retroversion and retroflexion of the uterus were discussed at the German Gynecological Congress in Leipzig.[2]

B. S. Schultze. *Etiology.* — (1) Relaxation of the uterine ligaments caused by pregnancy and puerperium; resorption proceeding from parametritis posterior; habitual constipation; continued recumbent position. (2) Fixation of cervix anteriorly through spontaneous and artificial scars (parametritis anterior, lacerations of cervix, discission of cervix, fistula). (3) Abnormal shortness of vagina, especially of anterior wall (puerile arrest of development, senile atrophy). (4) Habitual fulness of bladder. (5) Gaping vulva, the result of perineal lacerations; the everted anterior vaginal wall drags the cervix forward and the body is displaced backward. (6) Rarer causes are abnormal length of cervix, tumors of anterior uterine or cervical wall, incomplete descent of the ovaries, adhesions of ovaries and tubes posteriorly.

Prophylaxis. — Prevention of over-distention and habitual fulness of bladder, especially in children — school-teachers' attention must be drawn to this; prevention of catarrhal infection; closed undergarments; aseptic menstrual pads; repair of perineal defects; regulation of bowels; attention to obtain involution of puerperal uterus through the giving of ergot.

Bimanual palpation suffices for diagnosis; uterine sound is dangerous and unnecessary. The diagnosis of complications should be made under anesthesia.

Non-operative Treatment. — Bimanual reposition; after this a pessary. Schultze uses celluloid pessaries, which are shaped according to position. In relaxed anterior wall he uses the sledge, otherwise Thomas's, Hodge's, or figure-of-eight pessary. The pessary must not separate the vulva nor project from it. Douches only necessary in first few days after menstruation. In ensuing pregnancy removal in the seventeenth week; if pessary fits well remove only every year. Permanent results are obtained by the daily use of cold enemata, which should also be taken after every defecation. During menstruation ergot is advised.

Frequent Complications. — Subinvolution, metritis, endometritis, oöphoritis, in recent cases are best treated by reposition, while in old cases dilatation, irrigation, and curettement improve the tonus of the uterus and its ligaments. If reposition is difficult, recto-vagino-abdominal palpation under anesthesia; after this pessary or firm tamponing of vagina. Adhesions of uterus or adnexa may interfere with retaining the uterus in proper position. Massage, with simultaneous pessary, tampon, bath and irrigation treatment is advised. When perineoplasty is indicated on account of gaping vulva the operation should be preceded, at the same sitting, by vagino- or vesico-fixation or Alexander's operation.

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[1] Rev. de Gyn., May and June, 1897.

[2] Cent. für Gyn., No. 25.

Olshausen. *Symptomatology.* — If retroflexo-version is complicated by tumors of the adnexa the symptoms arise largely from this complication. Uncomplicated cases cause no disagreeable symptoms in about one-half the cases. Besides local symptoms, retroflexion may cause general symptoms which are largely of nervous origin. In old cases we have no true metrorrhagia, but menstruation is more frequent and the flow is apt to be freer. Atypical and continual flowing points in old cases to some complication, usually eudometritis fungosa. Although sterility is rare. retroflexion may be its cause, but some disease of the adnexa or hyperplasia of the uterus is generally accountable. Retroflexion also causes abortion, but in most cases the gravid uterus resumes the normal position spontaneously. Dysmenorrhea is not a prominent symptom of retroflexion; it is generally due to the accompanying endometritis.

Treatment. — Try first pessary treatment; if not successful and symptoms are distressing, operative treatment. Women approaching the menopause should undergo operation; disagreeable symptoms will soon cease. Complications of adnexa should be treated separately. Alexander's operation is the best, but is unsuitable in fixed retroflexion. In fixed retroflexion ventrofixation by the anterior uterine wall or the broad ligaments is advised. Silkworm-gut is the best fixation material; silk ligatures are not safe on account of liability to infection travelling along the sutures. Vagino-fixation is practicable in mobile retroflexion. Complications of labor may be avoided by fixing the lower portion of the uterus only.

Winter. Too much attention has been paid to methods of treatment, while the observation of symptoms has been neglected. Winter examined 303 women who came under observation for other causes: among these he found 36 cases of retroflexion; 11 of these had no symptoms, while 25 had symptoms; of these, 21 cases had complications. Recent retroflexion causes no disagreeable symptoms; if these are present they are due to complications, which, however, are not caused by the displacement. Flooding is always a consequence of diseased adnexa, except in puerperal cases.

Dührssen observed six recurrences among 281 cases in intra-peritoneal vagino-fixation. He never saw a difficult labor after his operation. He does not perform the operation as frequently as formerly; he operates in 30 to 50 per cent. of cases.

Bumm believes in vagino-fixation, but fixes only the lower half of the uterus. If fixation is too high, subsequent labor is difficult, while too low fixation gives no permanent results.

Theilhaber considers the reposition of secondary importance; the treatment of symptoms is advised.

Werth considers Alexander's operation the most ideal operative method.

Wertheim performed his method of vaginal shortening of the round ligaments in 14 cases; the mechanical result was excellent; recurrence in one case.

Veit agrees with Schultze that retroflexion frequently antedates the puerperium. Puberty is the beginning, but symptoms do not present themselves until complications have arisen. He looks on vagino-fixation with suspicion, and performs only Alexander's operation.

Fehling has a record of 55 vagino-fixations with 10 pregnancies; no serious birth complications.

CACHEXIA OF CANCER.

W. Roger Williams[3] says that as the cancerous cachexia is less frequently caused by sarcomata than by carcinomata, and is never due to non-malignant tumors, it cannot be attributed to mere abstraction of nutritive materials from the blood; nor can it be ascribed to septicemia, as it appears to be independent of the external lesions which usually accompany that condition, as there is usually no pyrexia and no signs of septicemia are found post-mortem. Cachetic symptoms never precede the outbreak of the primary disease, from which it may be inferred that they are a result of its local progress. They may best be interpreted as the consequence of a general toxemia, the explanation of which must be sought in the remarkable proneness of the constituent cells of cancers to undergo degenerative changes, which are often so extreme as to lead to their complete destruction by disintegration. When such excrementitious products find their way — by nutritive absorption or otherwise — into the general circulation, in quantities too great to be quickly eliminated and destroyed, they poison the fluids of the body; and so, by a kind of auto-intoxication, similar to that by which the system is infected from an inflammatory focus, they originate the phenomena of the cancerous cachexia. Hence these symptoms are much more frequently met with in association with cancers whose cells are specially prone to degenerative disintegration (for example, the breast) than with those whose cellular elements are more stable (for example, the lip). It seems probable that the excrementitious products thus produced contain certain toxic albuminoids analogous to the virulent substances secreted by microbes. These agencies cause marked qualitative and quantitative blood changes. Its total quantity is said to be diminished; its specific gravity is said to be increased; albumin and inorganic salts in the serum are less than normal. Leucocytosis is the most marked change, the white corpuscles being increased from 6,000 per cubic centimetre to 17,600 in certain cases of cancer of the stomach, to 11,400 in breast cancer, and to 7,800 in uterine cancer. Similar conditions have been demonstrated in connection with sarcomatous neoplasms; hence it may be concluded that every tumor unattended by inflammation or suppuration, causing marked leucocytosis, is due to malignant disease. It must be remembered, however, that the leucocytes are increased after meals, after hemorrhage, in pregnancy, in the newly born and dying and in inflammatory and febrile affections. The red corpuscles and hemoglobin are greatly diminished. Pallor of the skin is marked, the straw-colored tint probably being due to altered hemoglobin taken up by the plasma of the blood; emaciation, gastro-intestinal disturbances, and quasi-rheumatic pains in parts of the body remote from the primary seat of the disease occur, and peripheral neuritis has sometimes been found. Insanity has occasionally been noted. The alterations in the blood are usually accompanied by widespread fatty degeneration, and the anorexia and constipation are probably due to such changes in the liver and gastro-intestinal mucosa. The general malnutrition causes changes in the bones, aside from secondary cancerous deposits, the ribs, sternum, femur, cranial bones, humerus and vertebræ being most frequently affected. They become lighter and more fragile, probably from defective deposition of new bone to replace that absorbed. It seems probable that the affection is connected with alterations in the blood-forming properties of the red marrow; in fact, the bones most frequently so affected are those in which hematopoietic functions are normally most active. Amyloid degeneration is rarely associated with cancer. In 44 breast-cancer autopsies the writer did not meet with it, and found it in only four of his 78 necropsies upon cases of uterine cancer. After ulceration the symptoms of septic infection may be added to those of cancerous cachexia. Death occurred from asthenia in 64 of the author's 90 cases of cancer of the uterus which ran their natural course, and in 24 out of 40 fatal cases of cancer of the breast.

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[3] Edinburgh Medical Journal, June, 1897.

NEW OPERATION FOR CYSTOCELE.

Marsi[4] describes the following operation: A longitudinal incision is carried through the mucous and submucous layers of the anterior vaginal wall, from the anterior fornix to the lower end of the urethra. At each end of this incision a small transverse one is made on either side, and the two lateral flaps thus marked out are dissected off. Interrupted sutures of catgut are passed through the base of the right-hand flap, beneath the median raw surface, emerging at the base of the opposite flap. The flaps are then replaced over the first line of sutures, and their opposite edges are united by a continuous suture of catgut. The result is not only the removal of redundant tissue, but the formation of a new supporting column in the median line of the anterior vaginal wall.

PREVENTION OF IMPREGNATION BY DIVISION OF THE TUBE.

Kehrer[5] insists upon the importance of preventing patients with certain chronic and wasting diseases from becoming pregnant. This may also be desirable in cases of extreme pelvic contraction. It would seem more rational under these conditions to render such women sterile than to resort to the inevitable alternative of artificial abortion after pregnancy has occurred. None of the ordinary preventives is absolutely certain, at least in the hands of the laity.

Since removal of the adnexa is followed by climacteric disturbances, the writer suggests that a woman may be rendered sterile by simply dividing and ligating the tubes, as is practised by some operators during the performance of Cæsarean section. From experiments on rabbits he found that this procedure was not followed by either hydro- or pyo-salpinx, as might have been inferred. He accordingly applied this method to the human subject in the following case: A woman, aged twenty-seven years, had borne six children, two of whom died soon after birth, and the rest were either idiots or malformed. A seventh pregnancy was terminated artificially at the fourth month on account of the wretched condition of the mother, which had grown steadily worse after every labor. After mature consideration, and after the failure of the usual methods of preventing conception, it was decided to accomplish this result by surgical means. The usual anterior vaginal incision was made, as in vagino-fixation, the fundus uteri was drawn down into the wound, and each tube was ligated in two places near the isthmus, and divided between the ligatures, care being taken not to include the vessels. The uterus was sutured in a position of anteflexion. Convalescence was normal, and the succeeding menstruation appeared at the usual time.

The advantages claimed for this method are simplicity and the absence of subsequent disturbances, especially atrophy of the genitals and the extinction of sexual desire. Should the adnexa be diseased, they are, of course, removed. The writer adds that this operation should only be performed as a last resort, at the request of the family physician, as well as of the husband and wife. In order to avoid subsequent complications, the written consent of the parties interested should be obtained. The criticism might be offered, he concludes naïvely, that total abstinence would accomplish the same result, but experience shows that it is practically impossible to maintain this restriction.

STERILIZATION BY SECTION OF THE TUBES.

Beuttner[6] suggests the following method: The abdomen is opened by a transverse incision just above the symphysis. The Fallopian tubes are divided as far as possible from the uterus, and the four ends are closed with separate sutures, including the muscle and peritoneum. The divided ends are reunited by circular serous sutures (as in circular enteroraphy), so that a double septum is formed while the tube retains its normal position.

Fritsch[7] thinks that in some cases it may be desirable to prevent future conception after performing vagino-fixation in the case of a woman who already has children, considering the risks of pregnancy. Kehrer's method then offers advantages. The writer reports a case in which he first resected portions of both tubes and then performed vagino-fixation. Ligation is not sufficient, as he once tied both tubes with silk, yet the patient had a child three years later.

THE DANGER OF PREGNANCY AFTER OVARIOTOMY.

Laroyenne[8] reports the following interesting case: An easy ovariotomy was performed in the case of a young multipara. She menstruated only once after the operation. During the second month of pregnancy she was suddenly seized with severe abdominal pains, accompanied with dyspnea and vomiting. Five days later she was admitted to the hospital in a moribund condition, and died the following day. At the autopsy the peritoneal cavity was found to be filled with coagula. The hemorrhage had come from the stump, the ligature having slipped in consequence of traction due to the growing uterus.

EXTIRPATION OF THE OVARIES AS A CURE FOR CANCER.

W. Roger Williams[9] says that in his work on "Ovarian Tumors" Spencer Wells gives a table showing the subsequent history of all who recovered after completed ovaritomy. One hundred and seventeen had since died, the cause of death unknown in 29. Of the remaining 88, 32 had succumbed to cancer — that is, 1 in 2.75. During the same period the cancer mortality in the general population, among women of about the same age, was 1 in 15. Thus the cancer mortality was nearly 5½ times greater for those whose ovaries had been extirpated than for those who had undergone no such operation. Of these 32 cancer cases, in 19 the seat of the disease is not stated, in 3 it was peritoneal, in 3 uterine, in 2 in the pedicle, in 2 rectal, and in 1 each in the lung, liver and kidney. The date after ovariotomy at which death from cancer supervened is stated in 29 cases; 10 died in the first year, 10 in the second, 4 in the third, and 5 at later periods. In none of the foregoing cases was there any reason to suspect, at the time of ovariotomy, that malignant disease was then present. In 6 of the 32 operations it is distinctly stated that both ovaries were removed. Pfannenstiel concludes that the cancerous disease arises from epithelial elements detached from the ovarian cystoma at the time of operation, which suddenly become grafted in a new position and there take on such luxuriance of growth as to eventuate in cancer. In these cases the removal of the ovaries, instead of checking the tendency to cancer, had the contrary result.

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[4] Centralblatt für Gynäkologie, No. 38, 1897.

[5] Loc. cit., No. 31, 1897.

[6] Centralblatt für Gynäkologie, 1897, No. 40.

[7] Loc. cit.

[8] Revue internat. de Med. et de Chirurgie, No. 1, 1897.

[9] British Medical Jonrual, June 12, 1897.

MICROSCOPIC EXAMINATION OF CURETTING.

In considering the clinical value of the microscopic examination of fragments removed by the curette from the uterus, H. C. Coe[10] has been led to believe that in women in the prime of life with irregular hemorrhages, unless the history is pretty strong, we should consider the case as doubtful until the fact of malignancy is proven. The microscope will help rather by negative than by positive information. In women of advanced years, with a fairly well-marked history, especially of obstinate atypical bleeding, when we remove material which has a suspicious appearance we are justified in making a diagnosis of malignancy, even though the microscope throws no positive light upon it. He believes it better to run the risk of removing a few uteri unnecessarily than to delay until the disease becomes inoperable.

THE PRESERVATION OF THE HYMEN.

Kelly writes[11] a timely article upon the needlessness of lacerating the hymen for the majority of gynecological ailments. He speaks feelingly of the frequency with which the hymen is utterly disregarded, and attributes a much greater want of thought in this respect to female than to male practitioners. He urges strongly that no one but an acknowledged expert should examine a virgin, basing his opinion upon the fact that delicacy of touch is needed to avoid lacerating the hymen and upon the infrequency of any serious gynecological lesion in this social condition. He then describes at length his method of examining virgins. He urges that while a skilled man can usually make a satisfactory bimanual examination without lacerating the hymen, the latter is so frequently injured by the unskilled that most men should confine themselves to the use of the rectum in virgins. He urges that the patient should always be anesthetized and after anesthesia should be raised into the knee-chest position and held there while air is admitted to the vagina and rectum. If she is then placed upon the back there should be no obstacle to the performance of a most satisfactory bimanual examination through the rectum. He further goes on to describe a speculum which he has devised for use in the knee-chest position under anesthesia in virgins. This speculum is closely similar to the well-known Kelly vesical specula, but is fitted with a bevelled end in order to avoid the necessity of using an obturator.

[That this work could be done equally well by the larger sizes of the vesical specula is perfectly apparent. They may indeed be used very successfully in the Sims position. — E. R.]

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

E. W. TAYLOR, M.D., SECRETARY.

REGULAR Meeting, Wednesday, December 15, 1897, DR. W. F. WHITNEY in the chair.

DR. RICHARD HOGNER read a paper on

PROFESSOR VELANDER'S NEW METHOD OF ADMINISTERING UNGUENTUM HYDRARGYRI.[1]

DR. AGNES C. VIETOR read a paper on

A CASE OF SEPTICEMIA TREATED WITH THE STREPTOCOCCUS ANTITOXIN; RECOVERY.[2]

DR. THEOBALD SMITH read a paper on

THE TOXIN AND ANTITOXIN OF TETANUS.[3]

DR. LUND read a paper on

TWO CASES OF TETANUS TREATED BY ANTITOXIN.[4]

DR. WITHINGTON: My experience has been very limited. I wish to express my appreciation of the remarks of Dr. Smith and my interest in Dr. Lund's cases. According to all observers the distribution of the bacillus of tetanus seems to be very wide, and it is remarkable that the disease is so rare when the earth we tread upon and handle is so full of the germs of the disease as it appears to be. I noticed that one observer in examining forty-three specimens of dirt picked up at random in almost all parts of the world was able to demonstrate the existence of the tetanus bacillus in twenty-seven. One of the writers in the "Contemporary Science Series," Dr. Woodhead, speaks of the virus which is used in certain of the poisoned weapons in the Solomon, New Hebrides and other islands to the east of Australia, and says that the active principle which causes the death from the use of these weapons is the bacillus or toxin of tetanus, and he gives an account of the way in which those weapons are prepared. The darts have a hard-wood head into the end of which is fixed a small piece of bone made so slender that it is sure to break when it strikes the body, leaving a portion of the bone in the body. These weapons are charged by being first smeared with the gum of some resinous tree and then rubbed with a portion of the soil taken from some of the mangrove swamps and dried a little while. The effect of such wounds is almost universally fatal, the symptoms being those of tetanus. The dirt being the ordinary abiding-place of these germs, it is easy to see how the case of which Dr. Lund spoke might become infected. It is not so easy to see how some other cases of infection occur, as, for example, after certain operations. I think that the operation for hemorrhoids has not infrequently been followed by tetanus; some uterine operations certainly have been.

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[10] American Gynecological Journal, July, 1897.
[11] American Journal of Obstetrics, January, 1898.

[1] See page 299 of the Journal.
[2] See page 297 of the Journal.
[3] See page 292 of the Journal.
[4] See page 295 of the Journal.

The only distinct case which I recall was one in which tetanus followed abortion. That is a pretty rare occurrence. It is known to obstetrical writers, and in Hirst's "System of Obstetrics" there are some hundred cases noted as following either parturition or abortion, and the mortality is said to be higher in cases of that sort than in any other sort of infection. One writer says that recovery from tetanus following abortion is almost unknown. That statement is the chief warrant for my speaking of this case which followed abortion.

The circumstances were briefly that a woman was married on the first of July, menstruated the last of June, aborted the 25th day of August without medical attendance apparently, and was strenuous in her assertion that there was no means used to bring on the abortion. Three days later she was seen by a physician on account of fever and some signs of sepsis, and he curetted the uterus. Of course, it is possible the infection was started by curetting, though it was done by a careful man. She developed symptoms about ten days following the curettage. The symptoms began with trismus, going on to general convulsions; and the picture of the disease, as I recall it, was of a woman lying with considerable rigidity of all the muscles, particularly those of the jaws, arms and legs. Every three or four minutes she was seized with an attack of evident pain and further contraction even of the muscles which were already rigid, and, of course, the contraction centred about the muscles of the face as is usual. The opisthotonos was so marked as to leave several inches between the lumbar spine and the bed. The arms were flexed and the legs more rigidly extended than ever. The duration of such an attack would be one or two minutes. She had the first night, in nine hours, one hundred and twenty of these seizures. The nights following, the number was practically about the same, somewhere about twelve to the hour, about once in five minutes. They were of very great severity and the pain was very intense. The mind was clear, and she was able in the intervals to notice what was going on in the ward. She was treated with what purported to be a solution of tetanus antitoxin. This was two years ago and before any was made here in Massachusetts; and I have a good deal of doubt as to whether the solution was of any particular value, at least in the doses in which it was used. She received altogether about 90 c. c. in three or four daily injections. She did improve, however, and finally completely recovered and went out well.

Of course, it is to be said it was not one of the acute cases — a case on the border-line, however, probably developing in ten days after inoculation, and that is the limit between the acute and subacute cases. The mortality in cases developing within ten days is about 90 per cent. That fact and the fact of the statement that tetanus following abortion is almost always fatal are the only two indications which would lead me to think that the antitoxin injection in her case had anything to do with her recovery. The demonstration seems to be complete that a substance does exist in the serum of immunized animals in the case of diphtheria, an antitoxin which injected with the poison will protect an animal which otherwise would succumb to the poison. The practical difficulty in getting for therapeutic uses a serum of sufficient strength to accomplish that result when injected for the first time a number of days after the toxin has been received into the body of the patient is very great, and I think we have got to have stronger antitoxins and use them in larger doses than we have been in the habit of doing, both in diphtheria and tetanus as well.

Dr. Barney: What is the most reliable preparation to be obtained in Boston; and what is its dose?

Dr. Smith: I do not know whether the tetanus antitoxin of Behring is sold in this State or not. I have no doubt that the dried antitoxin is the best preparation to use. I am not sure that it is put into this form by the American manufacturers. I think that the large firm near Frankfort, Germany, which prepares the antitoxins under Behring's directions makes this serum more for the purpose of determining its efficacy than to make money. The dried product probably represents one hundred times its bulk of blood serum. The four grammes contain five hundred units, this dose to be injected at once and as early as possible.

Dr. Lund: Does Dr. Smith know of any cases in which the antitoxin has been furnished to the physicians by the Board of Health?

Dr. Smith: No; except the two cases at the City Hospital, reported to-night.

Dr. Smith: If it could be put into the dried form it would be permanent, because this does not deteriorate. It could be kept in this form at the hospitals to be promptly used when the occasion arose.

Dr. Lund: How rapidly does the liquid preparation deteriorate?

Dr. Smith: Very slowly, if kept in a dark place and in the cold. I would like to ask whether Dr. Lund has looked up any cases of tetanus arising from wounds of the head, and whether they are not more serious than when starting from wounds of the extremities?

Dr. Lund: I have seen reports of one or two cases of head tetanus that have recovered through antitoxin treatment, and I should judge there is very little difference between those two. I should not wish to state that without examination of the recorded cases.

Dr. Smith: Was not the immediate curetting of the wound which was done in the second case possibly a cause of the rapid absorption of toxin and unfavorable progress which followed? Would not curetting promote absorption of toxin by opening up the lymphatics and causing flooding of the wound with serum for the bacilli to feed on?

Dr. Vietor: I know the New York Pasteur Institute prepares an antitoxin, and I have read reports of its successful use in both human and veterinary cases. I have had no experience myself. In regard to the streptococcus antitoxin which I have been using, I made this observation: I used both European and American preparations, and I noticed that the quantity in the bottles varied very much. I found that scarcely any two measured the same, and I did not find one that measured what it was labelled; so I came to the conclusion that the dose marked on these bottles was a kind of trade-mark. One make was supposed to be sold in 10 c. c. doses, but the amount the bottles actually contained varied, as you may have noticed in my report to-night, from 7.5 c. c. to 9 c. c.; in no case was it 10. The bottle would easily hold 10 c. c. I used another make, labelled as containing 25 c. c., and the directions were to give one-half the quantity at a dose. I was able to find only 20 c. c. in that bottle. I measured this bottle, and found that when filled to the very brim it would hold 25 c. c. of fluid. That is just a little item in regard to the buying of antitoxin. If you want to give a dose of 10 c. c., you will have to buy more than a 10 c. c. bottle.

I was very much interested in the last case Dr. Lund reported, because I have not had any experience with tetanus except knowing to a certain extent the case of a lady who was a student of mine in New York. I did not know her history. She had two peculiarities, — a pronounced exophthalmos and great nervousness of manner and speech. After she graduated, she went to practice in a suburban town, and I lost sight of her entirely. One day, she came to visit me in a laboratory where I was at work, and said, "I am in town taking treatment." I said, "What is the matter?" She said, "I have tetanus." I thought she looked cheerful for a case of this kind. She said she had been working in the garden five or six days previously, and using a pair of scissors instead of a garden trowel, had cut her fingers; she was very much frightened about herself, but nothing happened until the night before, when she "jerked," and she was afraid she had tetanus. She came to the city for treatment. She went to the Pasteur Institute, where Dr. Gibier did not agree with her diagnosis. However, she insisted upon an injection of tetanus antitoxin and she was no better. She was perfectly well during the day, but at night, as soon as she was dropping to sleep, her arms and legs drew up in flexion so that it awakened her. When awake, the phenomenon stopped. She lingered in New York shopping and going about for a few days when she insisted on a second dose, and went home feeling better. Nothing more was heard of her until about two weeks later, when I heard she was dead. As far as I could get her history, she went home thinking she was better, and a few days after her return had the same symptoms; she was in a state of great fright, and insisted upon going to the local hospital. She was there a certain length of time, and I learned afterward that the hospital authorities had sent to the Pasteur Institute for a dose of tetanus antitoxin, and I heard they administered it to her. At any rate she died; and a communication being made to the hospital authorities to know why she died, they said she died of tetanus.

Dr. Whitney: Does the inoculation of the cord of the animals poisoned by the toxin ever give rise to symptoms of tetanus in other animals, thus pointing to the presence of a ferment?

Dr. Smith: The theory of the ferment is not generally accepted, in fact, is generally rejected. The inoculation of tissues from animals a certain number of hours, say 17 to 25 after the introduction of large doses of toxin produces no tetanus, according to Marie; but before that a certain amount of tetanus poison is detected in all organs, probably because of the blood present in them, for Marie found that the toxin disappeared from the tissues as soon as it disappeared from the blood.

Dr. Whitney: The cord contains no more than any other organ?

Dr. Smith: I believe not. The blood is the fluid which apparently contains most of it. I would like to ask Dr. Lund whether the disturbance of that wound in the second case may not have in some way given the latent tetanus bacillus a better opportunity than if the wound had been left untouched. It seems to me it is a serious question what to do in such a case, whether to disturb the wound or to let it alone.

Dr. Lund: I think that question is extremely pertinent, and it would seem plausible that the disturbance of the wound caused by the scraping and mechanical disturbance may have caused absorption. My practice is not to scrape such wounds out. but to excise the wound, make a diamond-shaped incision around the wound and cut it out, and that I think gets it out absolutely clean. This procedure does not introduce serum and dead tissue into the lymphatics and cause more rapid absorption. I think it is a question whether that should not always be the practice to follow. The early date of the beginning of the symptoms, which would be the fourth after the injury, would point to this having been an acute case in any event, so that it is impossible to say whether the absorption would have continued as rapidly without the disturbance of the wound as with. The treatment of all such wounds is to favor drainage, pack with gauze in order that the serum which is formed will be drained away. The tetanus bacillus develops in closed wounds on account of the bacillus being anaërobic, and whatever you do to those wounds, you should open them at any rate and insure the entrance of air, and that was done in this case. I should never question the advisability of exposing the wound and permitting free drainage, but whether the curetting of the tissues is a good thing to do I think is a grave question. I think it is distinctly better to excise a lacerated, dirty wound entirely.

Dr. Smith: Experiments upon animals show that there is no vicarious action between the antitoxins of diphtheria and tetanus. A guinea-pig which has received either diphtheria toxin alone, or a mixture of toxin and antitoxin is subsequently as susceptible to the tetanus toxin as an unused animal of the same weight.

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Recent Literature.

Orthopedic Surgery. By James E. Moore, M.D., Professor of Orthopedic and Clinical Surgery, College of Medicine, University of Minnesota. Philadelphia: W. B. Saunders & Co.

This work has many excellent qualities. It is the most attractively illustrated book on the subject; it is not too large for convenient use, and is written in a clear, agreeable style; and more than all it is both practical and sensible, giving the views of a surgeon who is not carried away by prejudice, the desire for novelty, or fear of the new, and with sufficient experience to enable him to judge of both the defects and excellences of the different methods in use. It may be termed a book which is thoroughly "sound," not tempting the reader with attractive vagaries; it is, however, in no sense a dull or colorless work.

The following passage is worth quotation: "It is only within a few years that this branch [orthopedic surgery] has kept pace with other branches of surgery. Formerly, it was looked upon as an uninviting and comparatively unimportant part of surgery; uninviting, because as formerly practised the results were anything but satisfactory. Surgeons had not learned to drain joints, to do excisions and arthrectomies. He based his opinions upon false pathology, and was prone to turn the patient over to the physician, who in his turn lost sight of the diseased bone or joint, and many times as his patient was trying to overcome what he was pleased to call scrofula and a strumous diathesis. An early diagnosis was not made, and bone and joint diseases were set down, owing to their late discovery, as local manifestations of a constitutional disease, for which very little could be done. If the medical man thought the patient might be benefited by the application of an apparatus, he considered it beneath his dignity to apply it, and turned his helpless patient over to the tender mercies of an ignorant mechanic, and the result was that much of the mechanical treatment of the disease and deformity was placed in the hands of mechanics and the regular practitioners."

The writer recalls the fact, that it is to the Bellevue Hospital Medical College that we owe the foundation of the first chair in orthopedic surgery. It may be said that this work on orthopedic surgery, without pretending to be exhaustive, deserves a prominent place in the current medical literature.

Cutaneous Medicine: A Systematic Treatise on the Diseases of the Skin. By Louis A. Duhring, M.D. Part II. — Classification, Anæmias, Hyperæmias, Inflammations. Philadelphia: J. B. Lippincott Company. 1898.

The second part of Dr. Duhring's elaborate treatise on skin diseases amply justifies the expectations aroused by the first or introductory portions. In his scheme of classification the author has departed considerably from that adopted by him in his earlier works on cutaneous diseases and has elaborated a system in which the class of inflammations is made to comprise many affections never before grouped under that heading, and in this respect cannot fail to challenge criticism. The amount of matter contained under each subject is very large, and the care with which the material has been compiled is apparent on every page. The large number of references to original work that are to be found at the bottom of the pages will be of great value to both students and experts. Most of the illustrations, with which the book is plentifully provided, are most excellent, the recent photographs exhibiting a marked superiority over the prints taken from water-color drawings.

Eczema is dealt with at great length, and many valuable suggestions from the author's personal experience are found under Treatment. We look naturally with much interest to the chapter on dermatitis herpetiformis, the affection which the author has been the foremost one to separate from bulbous and multiform eruptions that had hitherto been loosely classed under other headings. His description of the different varieties is extremely good and the illustrations capital. In the chapter on pemphigus it seems to us that a little more restriction might have been properly exercised, although the difference of opinion that exists to-day among authorities as to the limitation of the term *pemphigus*, and the difficulty of establishing a fixed boundary line between many cases of that disease and of dermatitis herpetiformis, may be regarded as a sufficient justification. There are numerous drawings of microscopical specimens, mostly those of Dr. Gilchrist.

Sexual Neurasthenia; its Hygiene, Causes, Symptoms, and Treatment. By George M. Beard, A.M., M.D. Edited with notes and additions, by A. D. Rockwell, A.M., M.D. Fifth edition. Small 8vo, pp. xii, 308, with one illustration. New York: E. B. Treat & Co. 1898.

The previous editions of this work have been noticed in these columns, and the present edition contains little that is new, except a description of certain methods of applying electricity. The work, however, is not of sufficient merit to warrant the number of editions through which it has passed.

Skin Diseases of Children. By George Henry Fox, A.M., M.D. With 12 photogravure and chromographic plates, and 60 illustrations in the text. New York: William Wood & Co. 1897.

The improvement that modern photography has effected in the portrayal of affections of the skin is well illustrated by this small book by Dr. Fox. He had already demonstrated his ability to produce some of the best photographs that have ever been brought out and many of those included here rank very high, the photogravures especially. The book itself does not claim to be a complete treatise on the cutaneous diseases of children, but is simply a collection of articles that have appeared in the *American Journal of Obstetrics and Diseases of Women and Children.* It is intended as a practical guide to the family physician in those cutaneous diseases of children which he is most likely to meet with, and it may be said to fulfil its object. The formulary at the end, although good, adds nothing to the value of the book.

Diseases of the Skin. By John V. Shoemaker, M.D., LL.D. Third edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Co. 1897.

In this third edition of his treatise on diseases of the skin the author claims in his preface to have incorporated the latest investigations in the bacteriology and pathology of cutaneous disease together with the newer methods of treatment.

Wasted Records of Disease. By Charles E. Paget, Lecturer on Public Health in Owens College, etc. Pp. 92. London: Edward Arnold. 1897.

This treatise is intended to show the need of registration of *disease*, in contradistinction to the registration of *mortality*. The writer reviews the various attempts to secure registration of disease in England, including the more recent legislation for the compulsory notification of infectious diseases, and believes that the duties of the Registrar-General's office might be so extended as to include this work and to publish it at frequent intervals.

He concludes by saying: "The nation's toll of sickness is not made use of for the nation's service. It is locked up and boarded; it stands in the way of progress; it is uninvested capital; it is a standing reproach to enlightened government; it is waste, the sinfulness of which exceeds by far the waste of food, the waste of commerce, or the waste of war; and the neglect of it is nothing less than a violation of that law which, in its simplicity, stands first of all — *salus populi.*"

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THE SIGNIFICANCE OF THE FLAGELLA IN THE HUMAN ORGANISM.

The study of the manner of sexual reproduction among the plants and lower animals is at all times of the greatest interest and fascination, and together with the form and the manner of nutrition has limited to a great extent the horizon of the botanists and zoölogists, to the exclusion of the more important questions regarding the use and action of the lower plants and animals. This latter field has been developed of recent years by the physicians who have seen the need to get at the causes predisposing to disease and have built up the study of micro-organisms usually designated as ***bacteriology***, although the investigations have long since ceased to be confined to the study of schizomycetes and their relation to health and disease. It is not wonderful that, from the large body of investigators which has sprung up, our knowledge of the strictly morphological and physiological conditions of various organisms studied should be materially extended.

During the past year two observers have given us some new ideas in regard to the earliest forms of sexual reproduction in the lowest forms of animal parasites. MacCallum, of Johns Hopkins, in studying the hematozoa found in birds, and Simond, at the Pasteur Institute, studying the life history of the various coccidia, were both led to draw very similar conclusions, namely, that the flagellated stage found in the cycle of the development of both organisms was one of sexual activity, and that thus early among the monocellular organisms there is a distinct development into a male and female body.

In the earliest recognized attempts at a conjugation in plants the reproductive cells or gametes have no differentiation between the male and female, and the masses of protoplasm, free swimming and propelled by a flagellum simply, fuse together forming a new cell. Among the protozoa the earliest observed analogous process is seen in the subclass of flagellata of the infusoria.

MacCallum's observation, which has since been repeated on the parasite of estivo-autumnal type of malarial fever, is as follows: In the course of their studies of the Halteridium hematozoa he and Opie noticed that there were cells having two distinct characteristics. One was hyaline, put out flagella with a good deal of disturbance and a distinct loss of protoplasmic substance. The other cell was more granular, did not move about as much, and when flagellated did not seem to lose in volume. Also they made out that the actively moving vermicular bodies which had been described before were doubtless the flagella which had become separated from the parent cell. Then came the most fortunate observation. A granular and a hyaline cell were found in the same field of the microscope, and while watched the protoplasm of the hyaline cell became violently agitated and the flagella were thrust out. These soon detached themselves and swam over to the quiescent granular cell, swam about it and finally one made its way into the cell and became lost in protoplasm. The others, after ineffectual attempts to gain an entrance, soon lost their power of motion and disintergrated. Soon after having received the flagellum to itself the cell got rid of its granular material and was apparently ready for new work.

Simond, from a study of his specimens, was led to the same conclusion, although he was not able to see the whole process take place under his eye.

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MEDICAL NOTES.

A Congress of Gynecology, Obstetrics and Pediatrics will be held at Marseilles from October 8th to 15th, Professor Pinard, Professor Pozzi and Professor Broca respectively presiding over the three sections in the order named.

A Medical Marriage License. — A bill requiring applicants for a marriage-license to appear before a medical board, and forbidding the issue of a license to those afflicted with dipsomania, kleptomania, insanity, or tuberculosis, has been passed by the Ohio Senate.

Proffers of Medical Service. — Surgeon-General Van Reypen, of the navy, has received from physicians over three hundred offers of service as acting assistant surgeons in the navy. These offers cannot be accepted until Congress authorizes the temporary appointment of acting surgeons.

The Suicide of a Medical Woman. — According to the *Lyon Médical* for March 6th, Mlle. Elcueff, one of the externes of the Paris hospitals, committed suicide on account of remorse over her self-alleged neglect in the case of an immature infant that died of athrepsia, as the post-mortem showed, instead of burns from the heating appliances employed to revive it, as she supposed.

Röntgen and Lenard Honored. — The Paris Académie des Sciences not only awarded the La Caze prize of 10,000 francs to Röntgen, but also bestowed the same amount upon Professor Lenard, of Heidelberg, whose work on the cathode ray stimulated Röntgen to further research, and led to his great discovery.

The Appropriation for Johns Hopkins Hospital. — The bill to appropriate $100,000 per annum for two years to the Johns Hopkins University was defeated in the Maryland House of Delegates on March 16th. The Maryland State Senate, on March 22d, passed a bill to give the Johns Hopkins University $50,000 per annum for two years to tide it over the financial difficulties into which it has gotten by reason of the receivership of the Baltimore and Ohio Railroad Company.

Plague Riots in Bombay. — Serious rioting broke out in Bombay on March 8th among the low-caste Hindus and Mohammedans, originating in an attack upon a plague-search party. Two soldiers were killed, and the police fired on the mob, killing seven persons and wounding many others. The mob attacked one of the plague hospitals, burned the offices and stores, and savagely assaulted the doctors, killing one of the latter. Three soldiers on police duty were stoned to death by the rioters.

The German Balneological Society. — The German Balneological Society held its ninth public meeting on March 11th and following days in Berlin, under the presidency of Professor Liebreich. Among the communications were: "The Question of Contagiousness of Tuberculosis," by Dr. Römpler; the "Effect of the so-called Indifferent Mineral Waters," by Professor Liebreich; the "Hydrotherapy of Simple Ulcer of the Stomach," by Professor Winternitz, and "Vegetable Diet Cures," by Dr. Strosser.

Bursitis of the Retrocalcaneal Bursa. — "Acute cases may be cured, as a rule, by rest, compression, and inunctions of ichthyol, but they may require aspiration or even incision. Some chronic cases can be cured in the same manner; others require incision and drainage. If osteophytes exist, they must be removed. The side incision does not give free access. It is a better plan, if the bursa is to be exsected or osteophytes are to be removed, to split the tendon by a longitudinal posterior incision, or to cut it across by a zigzag incision, and afterwards suture it (Wiesinger's plan)." — *Da Costa, in Philadelphia Medical Journal.*

International Congress of Physiologists. — The fourth International Congress of Physiologists will be held at Cambridge, England, from August 23d to 27th. Prof. Michael Foster was at the last Congress elected president of the forthcoming Congress. On August 22d an exhibition of physiological and microscopical apparatus will be held. The exhibits will be contributed by members of the Congress, by directors of physiological laboratories, and by makers recommended by any member or director. The exhibition will remain open during the week of the Congress. The official languages of the Congress will be English, French and German.

Congenital Absence of a Pectoral Muscle. — At a meeting of the Section in Orthopedic Surgery of the New York Academy of Medicine, Dr. Henry Ling Taylor showed a boy, six weeks old, that had been brought to him on account of asymmetry of the upper part of the chest in front. There was normal fulness of the right side, but the left pectoralis major was wholly wanting. The child moved both arms equally well. It was its mother's fifth child, and the others were normally developed. — *New York Medical Journal.*

An Original Way of Doing a Vaginal Hysterectomy. — Dr. J. D. Arnold, before the California Academy of Medicine, October 16, 1897, reported a case in which a midwife, after having delivered a woman, thought she saw the head of a second child protruding from the vagina. She seized it with both hands, and violently delivered, as she supposed, a second child. What she did deliver was an inverted uterus, completely tearing it away from its attachments. The physician who was called in did nothing but tampon the vagina, and the woman made a complete recovery. No arteries were ligated, either *en masse* or singly. — *Medical Record.*

Medical Etiquette in China. — Chinese doctors are said to be even more scrupulous than their white brother practitioners in regard to the nice points of professional etiquette. Indeed, if report be true, this honorable custom is at times carried to very inconvenient lengths. The following amusing tale is related in an English journal, which, if not veracious, is at least *ben trovato:* "A Chinese gentleman was struck by an arrow, which remained fast in his body. A surgeon was sent for, and broke off the protruding bit of the arrow, leaving the point embedded. He refused to extract it, because the case was clearly one for a physician, the arrow being inside the body." — *Medical Record.*

The Difficulties of a Doctor in India. — A medical man writes from Bombay: "Often when we pay our visits of inspection to native homes we find the head of the household sharpening a huge knife, wherewith he has pledged his word with neighbors to stab the first doctor sahib who enters his household. In one village we visited, over three thousand of the inhabitants had disappeared and gone to various hiding-places, whence they emerged as soon as we had finished our tour. Of course we were helpless in the matter. We knew the population was missing, but could not scour the country and conduct our physical examinations by force. It would have been like an Afridi expedition. So we returned with our work only half done." — *Hospital.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, March 30, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 62, scarlet fever 35, measles 51, typhoid fever 10.

No Death from Diphtheria. — The week ending last Saturday was the first since July, 1891, in which there was no death from diphtheria in Boston.

NEW YORK.

A Dishonest Coroner. — Dr. E. B. Coombs, a former coroner of Kings County, was on March 21st convicted of malfeasance in office in the Supreme Court, Brooklyn, and sentenced to imprisonment in the penitentiary for one year and the payment of a fine of one thousand dollars. In his trial it was proved that during his term of office he had been paid for inquests he never held, put in claims signed by imaginary witnesses, and produced testimony of persons who were dead. In summing up for him the most that his counsel could offer in extenuation was the following plea: "If he violated the law that condition arose from his careless adherence to the customs which had grown up in the office, rather than any wilful intent on his part to commit a crime." For a long time it has been well known that frauds and abuses existed in connection with the antiquated system of coroners still retained in New York, but this is perhaps the first instance in which one of these officials has been convicted of a felony.

A Sterilizing Plant for the Infants' Hospital. — Mr. Nathan Strauss, who recently resigned the presidency of the Board of Health, has announced his intention of building for the Department of Charities a plant in which all the milk used in the infants' hospital on Randall's Island, where the mortality has always been excessive, can be sterilized. He proposes to do this in part with the salary which he received from the city, and will carry out the plans of Dr. H. G. Freeman in the contemplated project.

Bellevue Internes Ready for War. — On March 26th twenty-one of the thirty-two members of the medical and surgical house-staff of Bellevue Hospital, at the suggestion of Dr. G. Boling Lee, Senior Physician of the Fourth Medical Division of the Hospital, signed their names to a paper, offering their services to the government in case of war, which was sent to the Surgeon-General at Washington. Dr. Lee is said to be a nephew of Consul-General Fitzhugh Lee.

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Miscellany.

THE DUM-DUM BULLET.

In view of the interest which men, women and children are taking in all matters connected with warfare, an account of the latest evolution in bullets, taken from the *British Medical Journal*, may prove valuable to our readers and perhaps inhibitory to the warlike part of the population.

As some questions have recently been asked in Parliament with regard to the alleged "explosive" qualities of the Dum-Dum bullet, it may be well to explain what an explosive bullet really is, and the nature of the action of the Dum-Dum bullet. The Geneva Convention laid down a size, below which no missile which contained any compound which was intended to explode and break it up should be used. Anything above this size came within the definition of a shell, and could be used, but any missile below this size, constructed on a similar principle, was an explosive bullet, and could not be used. The diameter allowed was fixed above that of any rifle. The Dum-Dum bullet does not contain any explosive charge, and therefore does not come within the definition of an explosive bullet as laid down by the Geneva Convention. The evolution of the Dum-Dum bullet is very briefly the following: In the struggle to produce a rifle with the longest and most accurate range, the diameter of a bullet has been gradually reduced. To give it a greater penetrating power and a more accurate flight, its substance or outer coating has been made harder, until in the British army the pencil-like metal-coated Lee-Metford bullet, with a diameter of 0.303 inch, has been evolved. This bullet at short ranges may produce terrible effects if it strikes a hard bone, but passes clean through soft parts without causing any material shock to the system. It thus allows a wounded man to charge home, and has consequently been found to be ineffective in stopping rushes of such determined fighters as we have recently encountered in both India and Egypt. To meet this difficulty the Dum-Dum bullet was introduced; it is precisely similar to the Lee-Metford bullet, except that the cupro nickel covering is not continued over its pointed end. The consequence is that when it comes into contact with the body the softer lead and antimony core which is exposed "sets up" into a broader mushroom-like end, which inflicts greater damage than the hard metal-coated point of the Lee-Metford bullet. All the older bullets, including the Martini-Henry, which is still exclusively used by native troops in India, "set up" in precisely the same way as the Dum-Dum bullet, and the more severe injuries produced by the latter — if indeed they prove to be more severe — depend solely on their much greater muzzle velocity. The Dum-Dum bullet, therefore, does not contravene the present code of international law.

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A FICTITIOUS MICROBE.

As was recently noted in the Journal, the discovery of a microbe of baldness has been seriously reported before and discussed by the Paris Faculty of Medicine. The following comments of the editor of the *Medical Press and Circular* are of interest in this connection:

An ingenious Frenchman, of a commercial turn of mind, has created a sensation by proclaiming himself the discoverer of a microbe which is alleged to be the cause of baldness, as in spite of the resignation which people under forty affect when the hair thins to a perceptible degree there is unquestionably a very lively and general desire to preserve the capillary thatch. No better proof thereof can be required than the eagerness with which the victims of premature calvities give a trial to every new compound vaunted as a sure specific against the depilatory process. Now certain forms of baldness, especially of the local kind, are undoubtedly due to the ravages of microbes or fungi, but the usual form of baldness is determined by a readjustment of the peripheral circulation, in virtue whereof the scalp or certain parts thereof no longer receive the normal supply of blood. It is a curious fact that the incidence of this retrograde process is greatly influenced by hereditary proclivities. In some families the baldness proceeds from before backwards, the forehead becoming higher and higher until, so to speak, it reaches the back of the head. Others again, and these are probably the great majority, appear to grow through their hair, the denuded pate making its appearance at the apex of the human oval. Thence it extends antero-posteriorly, until the top of the head resembles a wide and glistening stream, with rushy margins, the long straggling rushes being carefully drawn along or over the vacant territory for the purpose of rendering the nakedness of the land more conspicuous. To talk of a microbe of baldness in connection with this general process is obviously ridiculous, and would not be worth refuting or even alluding to were it not for the fact that a number of lay journals of standing have lent their columns to the subject, foremost among which we may mention the *Contemporary Review*. All this is part of an ingenious scheme of advertisement, and the references ought properly to have been relegated to the columns *ad hoc*. Remedies for baldness are at least as numerous as cures for phthisis, and the efficacy of the one is about on a par with that of the other.

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A CONSULTATION.

The *University College Gazette* is responsible for the following skit:

An absolutely impossible consultation at U. C. H., and *not* reported in the *Clinical Journal*. Submitted with the humblest apologies.

Patient is an elderly man of weather-beaten appearance, who has a large swelling on the left side of the face.

Dr. B-rk-r. — Gentlemen: This is an interesting but somewhat obscure case that has been sent up to me by a distinguished medical friend of mine, a staff-surgeon upon one of the largest of Her Most Gracious Majesty's battleships. Having made a most careful and minute chemical, bacteriological and microscopical investigation of the brownish discharge that fills the patient's mouth, I have quite made up my mind that the growth is of a highly malignant character. I bring the case here that you may derive some amusement from the speculations of my colleagues concerning the nature of the malady. I need hardly say that my own opinion will not be the least disturbed by any contrary views they may be pleased to express.

Mr. P-l-rd. — As I do not take the remotest interest in either the case itself, or Mr. B's diagnosis of it, I shall not say anything more, but go and have a cigarette.

(*Exit Mr. P. rolling one.*)

Dr. Br-df-rd. — The moment one enters the room, one sees at once that this is a case of right-sided facial hemiatrophy of the fifth variety. I mean any other view is ridiculous upon the face of it — d'you see? Is that quite clear.

Mr. G-dl-e. — I always call to mind that famous remark of Sir William Jenner's, "that the tragedies of life are caused by following other people's advice, and listening to their opinions instead of ——" (*Indulges apologetically in humorous reminiscences of an unexciting character.*)

Mr. H-rsl-y. — The case is undoubtedly one of leontiasis ossea, beginning in the hamular process. I should operate at once, making an incision from the external occipital protuberance to the external angular process of the frontal bone, and turning down the flap over the left shoulder. Then sawing through the skull in the middle line, I should remove the whole of the left half of the cranium. To do anything less than this would be childish. Next new case, please.

Dr. M-rt-n. — If Mr. H. would kindly cut off the patient's head altogether I think I might deliver an interesting pathological discourse upon it. (*Mr. H. politely acquiesces, and they retire and discuss the matter together in an amicable manner.*)

Mr. J-hns n. — There can be absolutely no question that this is a case of chronic periosteo-myelitic necrotic caries of the lower jaw. (*Recites four chapters of Erichsen in support of this view.*)

Mr. C. H-th. — I think every one here, except myself, is an egregious ass. (*To patient.*) What are you?

Patient. — Sailor, sir.

Mr. H. — Thought so. Bring a brown pan, Sister. Now, take that beastly thing out. (*Patient removes an enormous quid of tobacco, weighing a quarter of a pound. After this the tumor quite disappears.*) There! Disgusting!! This is what all you smokers of filthy tobacco come to; you end by trying to live on it! (*Cheers and curtain.*)

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THERAPEUTIC NOTES.

Captol: A New Antiseborrheic.[1] — Eichhoff recommends captol, a condensation product of tannin and chloral, in seborrhea capitis and its complications; such as itching, scale formation and thinning of the hair. Captol has more rapid and definite effects than a mixture of the two drugs from which it is made, and is entirely harmless and unirritating. It forms a dark brown, hygroscopic powder which dissolves with difficulty in cold water, but more easily in a mixture of warm water and alcohol, is not affected by acids, but is decomposed by alkalies, and turns dark. Eichhoff employs it in a one to two per cent. alcoholic solution, and asserts that in every case in which he has employed it his results have been wonderfully good. In eight to fourteen days the scales have disappeared from the scalp, the hypersecretion of the sebaceous glands has ceased, and the falling out of the hair has stopped. He employs the preparation called "spiritus captoli compositus," which has the following formula:

℞	Captol Chloral hydrate Acid tartaric } āā	1.0 gm.
	Ol. recini	0.5
	Spirit vin (65 per cent.)	100.0
	Essent. flor. æth.	9.5

◆

Correspondence.

TREATMENT FOR TERTIARY SYPHILITIC ULCERS.

Boston, March 24, 1898.

Mr. Editor: — We are ofttimes at a loss to give a rapid relief to patients afflicted with large tertiary syphilitic ulcers, especially when the lesion is seated on the leg, and it is for this reason that I beg to submit a formula that I have employed lately in such cases, with most happy results. It is as follows:

℞	Hydrarg. sozoiodol. (Merck) Orthoform } āā	1.0
	Bismuth benzoat.	23.0

M. D. S. Apply as a dusting powder to parts.

The sozoiodol salt has appeared to me to act quite rapidly in causing a healthy change to take place in the tissues, while the recently discovered local anesthetic orthoform, gives the patient relief from the severe pain usually present in such cases. The benzoate of bismuth is simply as a base, as well as for its slight antiseptic properties.

The above powder is applied every second day and the ulcer dressed with subgallate of bismuth gauze, held in place by a roller bandage.

It is hardly necessary to add that the patients should be carefully observed, in order to avoid the occurrence of mercurial intoxication.

Yours very truly,

Charles G. Cumston, M.D.

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[1] Deutsche med. Woch., 1897, No. 41 and 45.

METEOROLOGICAL RECORD

For the week ending March 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A. M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S ..13	29.89	58	66	49	78	81	80	S.W.	S.W.	12	24	O.	O.	
M..14	30.07	48	54	41	60	57	58	S.W.	W.	12	12	C.	C.	
T ..15	30.33	37	41	33	45	72	58	N.	S.E.	16	8	C.	C.	
W..16	30.41	37	44	30	70	75	74	N.	S.	9	14	O.	O.	
T ..17	29.93	49	60	38	89	74	82	S.	W.	12	15	R.	C.	.02
F...18	30.24	48	58	38	62	60	61	W.	S.	10	7	C.	C.	
S...19	29.90	46	51	42	85	74	80	S.	S.E.	12	6	O.	O.	.38
☞	30.11		53	39			70							.40

* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, March 19, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1225	439	11.04	20.80	.72	.64	4.32
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	484	175	13.04	11.34	1.05	2.52	6.09
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	186	35	3.20	21.60	.54	.54	1.62
Baltimore . .	550,000	195	63	9.18	17.16	1.56	3.12	1.56
Boston . . .	517,732	180	49	8.25	15.40	—	2.20	3.85
Cincinnati . .	405,000	107	—	6.51	17.67	—	.93	.93
Cleveland . .	350,000	107	41	5.58	13.02	.93	—	.93
Pittsburg . .	285,000	125	51	12.00	22.40	—	.32	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	30	9	10.00	6.66	—	3.33	—
Nashville . .	87,754	37	10	5.40	16.20	—	—	2.70
Fall River . .	95,919	36	14	22.16	5.54	—	—	19.39
Lowell . . .	87,193	38	13	5.26	10.52	—	—	5.26
Cambridge . .	86,812	25	11	8.00	8.00	4.00	—	—
Lynn	65,220	—	—	—	—	—	—	—
Charleston . .	65,165	26	7	3.85	15.40	3.85	—	—
New Bedford .	62,416	20	9	—	20.00	—	—	—
Lawrence . .	55,510	19	9	10.52	15.78	—	—	5.26
Springfield . .	54,790	16	7	18.75	12.50	6.25	6.25	—
Holyoke . . .	42,364	10	6	40.00	30.00	—	—	10.00
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	8	4	—	12.50	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	7	1	28.56	14.28	—	—	—
Chelsea . . .	32,716	11	2	—	9.09	—	—	—
Haverhill . .	31,406	12	1	25.00	8.33	—	—	25.00
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	9	2	—	—	—	—	—
Fitchburg . .	28,392	4	1	—	25.00	—	—	—
Taunton . . .	27,812	14	0	—	21.42	—	—	—
Quincy . . .	22,562	9	5	11.11	11.11	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	7	1	—	14.28	—	—	—
Everett . . .	21,575	14	7	7.14	21.42	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	3	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 3,094; under five years of age 958; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 317, acute lung diseases 569, consumption 337, diphtheria and croup 107, measles 55, typhoid fever 40, diarrheal diseases 32, scarlet fever 28, whooping-cough 28, cerebro-spinal meningitis 23, erysipelas 5.

From measles New York 31, Philadelphia 13, Pittsburg 4, St. Louis, Baltimore, Cincinnati and Springfield 1 each. From scarlet fever New York 19, Philadelphia 4, Baltimore 3, Pittsburg and Fall River 1 each. From whooping-cough New York 10, Pittsburg 5, Philadelphia 3, Baltimore and Lynn 2 each, Cambridge 1. From cerebro-spinal meningitis New York 6, Boston and Somerville 3 each, Worcester, Holyoke and Malden 2 each, Philadelphia, Cleveland, Cambridge and Lawrence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending March 12th, the death-rate was 21.1. Deaths reported 4,535; acute diseases of the respiratory organs (London) 429, measles 258, whooping-cough 124, diphtheria 68, fever 40, diarrhea 31, scarlet fever 17.

The death-rates ranged from 13.8 in Burnley to 29.1 in Swansea; Birkenhead 15.7, Birmingham 21.6, Bradford 20.1, Cardiff 18.5, Gateshead 26.1, Hull 22.2, Leeds 18.3, Liverpool 25.1, London 21.5, Manchester 21.5, Nottingham 24.3, Salford 19.8, Sheffield 20.9, West Ham 17.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 19, 1898, TO MARCH 25, 1898.

Captain Robert J. Gibson, assistant surgeon, is relieved from duty at Fort Thomas, Ky., and ordered to Fort Meade, S. D., for duty.

Major Louis W. Crampton, surgeon, will be relieved from duty at Fort Meade, S. D., upon the arrival there of **Captain Gibson**, and is ordered to Fort McHenry, Md., to relieve **Major Charles K. Winne**, surgeon.

Major Henry McElderry, surgeon, now at Fort Leavenworth, Kan., will proceed to Hot Springs, Ark., and report to the commanding officer of the Army and Navy General Hospital for treatment therein.

Major George H. Torney, surgeon, will be relieved from duty at the U. S. Military Academy, West Point, N. Y., on or about June 1, 1898, and ordered to Fort Leavenworth, Kan., for duty.

Major John M. Banister, surgeon, will be relieved from duty at Fort Leavenworth, Kan., upon the arrival there of **Major Torney**, and ordered to the U. S. Military Academy, West Point, N. Y., for duty.

The order assigning **Major Egon A. Koerper**, surgeon, to duty as chief surgeon, Department of the Platte, is revoked.

First-Lieut. Charles Lynch, assistant surgeon, is relieved from duty at Fort Sheridan, Ill., to take effect upon the completion of his examination for promotion, and ordered to Galveston, Tex., for duty.

Major Henry McElderry, surgeon, is relieved from duty at Fort Leavenworth, Kan., and will proceed to Omaha, Neb., and report in person to the commanding general, Department of the Missouri, for assignment to duty as chief surgeon of that department.

First-Lieut. John H. Stone, assistant surgeon, is relieved from duty at Fort Riley, Kan., and ordered to Fort Leavenworth, Kan.

Captain Jefferson D. Poindexter, assistant surgeon, is relieved from duty at Willets Point, N. Y., and from temporary duty at Fort Hankiton, N. Y., and ordered to report to **Captain William C. Gorgas**, assistant surgeon, for the purpose of assisting him in examining recruits in that city, including the borough of Brooklyn.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING MARCH 24, 1898.

Banks, C. M., surgeon. Detailed as delegate to represent Service at Ninth International Congress of Hygiene and Demography, Madrid, Spain, April 10–17, 1898. March 15, 1898.

Woodward, R. M., passed assistant surgeon. To rejoin station at Reedy Island Quarantine, April 1, 1898. March 21, 1898.

Smith, A. C., passed assistant surgeon. To rejoin station at Gulf Quarantine. March 21, 1898.

Cumming, H. S., assistant surgeon. Assigned to Immigration Depot, New York, N. Y., for temporary duty. March 11, 1898. Granted leave of absence for one month upon being relieved from duty at Immigration Depot, New York, N. Y. March 16, 1898.

McMullen, John, assistant surgeon. To proceed to Philadelphia, Pa., and report to commanding officer for duty. March 21, 1898.

Lumsden, L. L., assistant surgeon. To proceed to Boston, Mass., and report to commanding officer for duty and assignment to quarters. March 15, 1898.

Anderson, J. F., assistant surgeon. To proceed to Mobile, Ala., and report to commanding officer for duty and assignment to quarters. March 15, 1898.

BOARD CONVENED.

The following Board was convened to meet at Washington, D. C., March 16, 1898, to revise quarantine regulations: Surgeon **H. W. Austin**, Chairman; Surgeon **H. R. Carter**; Passed

Assistant Surgeon J. H. White; Passed Assistant Surgeon J. J. Kinyoun; Passed Assistant Surgeon G. B. Young, Recorder.

APPOINTMENTS.

L. L. Lumsden and John F. Anderson, of Virginia, commissioned by the President as assistant surgeons.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 12, 1898.

L. B. Baldwin, surgeon, detached from the "Puritan," March 17th, and ordered home with two months' leave.

J. D. Gatewood, surgeon, detached from duty at the Naval Museum of Hygiene, Washington, D. C., March 15th, and ordered to the "Puritan," March 17th.

C. D. Kindleberger, assistant surgeon, detached from the "Olympia," and ordered home with two months' leave.

N. H. Drake, surgeon, detached from duty with the "Minneapolis" and "Columbia," and ordered to the "Minneapolis," March 15th.

C. G. Herndon, surgeon, ordered to the "Columbia," March 15th.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, April 4th, at 8 o'clock.

Dr. M. Prince will read a paper entitled: "Hysterical Neurasthenia."

Dr. F. G. Balch: "Papillomatous Urethritis."

Election of members.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

The Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, April 6, 1898, at 8 o'clock.

Papers: "Report of a Case of Intermittent Hydronephrosis, with Cure by Operation," by Dr. J. W. Elliot. Drs. A. T. Cabot, M. H. Richardson and F. S. Watson have been invited to discuss this paper.

"Orbital Injury from Contre-Coup," by Dr. F. E. Cheney. Drs. Myles Standish and G. L. Walton have been invited to discuss this paper.

"A Case of Actinomycosis," by Dr. E. A. Codman.

The presentation of pathological specimens, apparatus, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

ASSOCIATION OF AMERICAN PHYSICIANS.

The preliminary programme of the thirteenth annual meeting of the Association of American Physicians will be held in the Arlington Hotel, Washington, D. C., May 3, 4 and 5, 1898.

1. President's Address. F. C. Shattuck, Boston.
2. Discussion — Is a Uric-Acid Diathesis an Important Factor in Pathology? Referee representing Physiological Chemistry, V. C. Vaughan, Ann Arbor; Referee representing Clinical Medicine, Wm. H. Draper, New York; Co-Referee representing Clinical Medicine, Jas. Tyson, Philadelphia.
3. Bacillus Icteroides (Sanarelli) and Bacillus X (Sternberg). Geo. M. Sternberg, Washington.
4. Comparative Studies of Bovine Tubercle Bacilli and of Human (Sputum). Theobald Smith, Boston.
5. Actinomycotic Forms of the Bacillus Tuberculosis; An Experimental Study. Simon Flexner, Baltimore.
6. Gastric Syphilis with the Report of a Case of Perforating Syphilitic Ulcer of the Stomach. Simon Flexner, Baltimore.
7. Some Observations on Cardiac Syphilis. I. Adler, New York.
8. Danger of Error in Diagnosis between Chronic Syphilitic Fever and Tuberculosis. E. G. Janeway, New York.
9. Two Attacks of Temporary Hemiplegia Occurring in the Same Individual as the Result of the Use of Peroxide of Hydrogen in a Sacculated Empyema (Pleural). E. G. Janeway, New York.
10. Acute Interstitial Nephritis. Wm. T. Councilman, Boston.
11. Chronic Interstitial Nephritis (by title). I. N. Danforth, Chicago.
12. Acute Leucemia. M. H. Fussell and A. E. Taylor, Philadelphia.
13. Bacteriology of Cheese. V. C. Vaughan and Julian T. McClymonds, Ann Arbor.
14. A Chapter in Peripheral Pathology; the Circulation in the Feet. Morris Longstretch, Philadelphia.
15. A Case of Chronic Infective Endocarditis, with Streptococci found in the Blood before Death, Treated by Antistreptococcus Serum and Experimental Researches upon the Effects of Injections of Antitoxins upon the Kidneys. W. H. Thomson, New York.
16. Nephritis of Malarial Origin. W. S. Thayer, Baltimore.
17. Experiments upon the Localization of Micro-organisms in the Spleen and the Importance of a Lesion of an Organ for the Localization of Bacteria Within It. S. J. Meltzer and T. M. Cheesman, New York.
18. Congenital Stenosis of the Pylorus in Infants. S. J. Meltzer, New York.
19. Paralysis of the Left Recurrent Laryngeal Nerve in Mitral Stenosis. Wm. Osler, Baltimore.
20. Combined Symptoms of Myxedema and Exophthalmic Goitre. Wm. Osler, Baltimore.
21. The Renal Form of Enteric Fever. J. C. Wilson, Philadelphia.
22. Gastric Carcinoma Associated with Hyperchlorhydria. D. D. Stewart, Philadelphia.
23. The Diffuse Infiltrating Form of Secondary Melano-Sarcoma of the Liver (by title). L. Hektoen, Chicago.
24. Myxedema and Albumosuria, Treatment with Thyroid Extract, Death. R. H. Fitz, Boston.
25. Studies of Antitoxins for Tuberculosis (by title). Edward L. Trudeau, Saranac Lake.
26. Antitoxin Treatment of Pneumonia. Andrew H. Smith, New York.
27. Some Usually Overlooked Physical Signs in Chest Diseases. Norman Bridge, Los Angeles.
28. A Case of Mycetoma (Madura Foot). James H. Wright, Boston.

LECTURES ON CLIMATOLOGY.

Dr. S. E. Solly, of Colorado Springs, has consented to deliver a special course of lectures on Climatology, in the New York Post-Graduate Medical School and Hospital. The lectures will be on April 25th, 26th, 29th, May 2d, 4th, 6th, at 5 p. m. Admission will be by ticket only. Members of the profession not specially invited may secure tickets, without charge, on application, either personally or by note, to the superintendent, in the office of the School.

RECENT DEATH.

George Thomas Hough, M.D., M.M.S.S., died in New Bedford, March 24, 1898.

BOOKS AND PAMPHLETS RECEIVED.

Ophthalmia Neonatorum. Implantation of a Glass Ball for the Support of an Artificial Eye and Mules' Operation for the Substitution of Enucleation of an Eyeball. By L. Webster Fox, A M., M.D., Philadelphia, Pa. Reprints. 1898.

The Health Resorts of Europe, a Medical Guide to the Mineral Springs, Climatic Mountain and Seaside Resorts, Milk, Whey, Grape, Earth, Mud, Sand and Air Cures of Europe. By Thomas Linn, M.D. (of Nice and Paris). Fifth edition. London: Henry Kimpton. 1898.

Therapeutics of Infancy and Childhood. By A. Jacobi, M.D., Clinical Professor of the Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Late President of the Association of American Physicians, etc. Second edition. Philadelphia: J. B. Lippincott Co. 1898.

Fat and Blood; An Essay on the Treatment of Certain Forms of Neurasthenia and Hysteria. By S. Weir Mitchell, M D., LL.D., Harv., Member of National Academy of Sciences; Formerly President of the College of Physicians of Philadelphia, etc. Seventh edition. Philadelphia: J. B. Lippincott Co. 1898.

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger, Obermedicinalrat and Professor. Volume I. Circulatory, Respiratory and Digestive Apparatus, including the Liver, Bile Ducts and Pancreas. With 69 colored figures upon 60 plates and 18 illustrations in the text. New York: William Wood & Co. 1898.

A Case of Phlegmonous Gastritis following Ulcus Carcinomatosum of the Pylorus, Dilatation, Perforation and Peritonitis, A Clinical History of Fourteen Months with Chemical, Bacteriological and Histopathological Study. By John C. Hemmeter, M.B., Ph.D., M.D., and Delano Ames, A.B., M.D., Baltimore. Reprint. 1897.

Diseases of Women, a Clinical Guide to their Diagnosis and Treatment. By George Ernest Herman, M.B., Lond., F.R.C.P., Obstetric Physician to and Lecturer on Midwifery at the London Hospital; Examiner in Midwifery to the Universities of London, Oxford. With 252 illustrations. New York: William Wood & Co. 1898.

Diseases of Women, a Text-Book for Students and Practitioners. By J. C. Webster, B.A., M.D. (Edin.), F.R.C.P.Ed., Demonstrator of Gynecology, McGill University; Assistant Gynecologist, Royal Victoria Hospital, Montreal; Fellow of the Royal Society of Edinburgh, etc. Illustrated with 241 figures. Edinburgh and London: Young J. Pentland. New York: The Macmillan Co. 1898.

Original Articles.

HOSPITALS AND SANATORIA FOR CONSUMPTION ABROAD.[1]

BY EDWARD O. OTIS, M.D.,
President of the American Climatological Association.

(Concluded from No. 12, p. 268.)

In speaking of the German sanatoria it is well to state at the outset the leading motive upon which they are all conducted; it is the hygienic-dietetic method in all its scientific rigor. In comparison with this, climate seems to hold a secondary consideration; but, on the other hand, whatever the climate, the *Freiluft Kur* (free-air cure) is practised with an extreme insistence as we shall see, and partially or wholly by means of the *Ruheluft Kur* — rest in the open air.

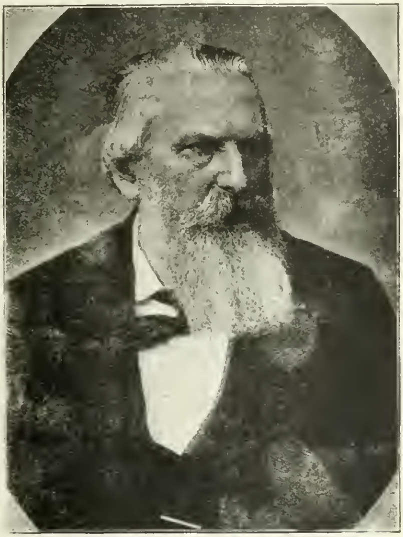
GÖRBERSDORF.

In the southwestern part of Germany, in the Silesian Mountains, is situated the little village of Görbersdorf, lying in a well-sheltered valley surrounded by wooded hillsides. Here, about forty years ago, Brehmer founded his famous sanatorium, the parent of all the others. Begun in a small way, it now consists of large and handsome buildings with several detached villas, surrounded by very extensive grounds. Meeting with much opposition at first, Brehmer, before he died in 1889, had the satisfaction of seeing his method adopted more or less closely in all systematic attempts to cure phthisis; other sanatoria established on the principles laid down by him; and more favorable results than had ever before been obtained in the treatment of the disease. To-day the Brehmer hygienic-dietetic treatment, with perhaps some modifications, is the best we have, when weighed by results.

Brehmer Sanatorium at Görbersdorf.

Brehmer's theory of the underlying cause of phthisis was a disproportion between the heart and lungs, the latter relatively voluminous, the former small, with thin, flabby, feeble walls. Consequently he considered that the most important object in the treatment was to strengthen this organ, and methodic hill-climbing the best means to obtain this. For this purpose in the park of about 300 acres surrounding the sanatorium, he constructed over nine miles of footpaths of gentle ascent, with frequent benches and pavilions for resting. Measured walks of measured steepness was then a fundamental principle of his treatment, and only the febrile cases and those with some contraindicating complication were exempt. The other sanatoria have modified this plan, and place the emphasis upon the *Ruheluft Kur*, rest in the open air. It is used, to be sure, at Görbersdorf, but not to the extent that it is at Falkenstein and Hohenhonnef. At these latter it is the striking feature of the treatment.

The climate at Görbersdorf is a mountain one, but not a high altitude one, it being 1,800 feet high. The sanatorium building is a large gothic structure of brick of very imposing appearance in the midst of a beautiful garden; and besides the old and new *Kur haus* there are three annexes or villas. The internal arrangements are very extensive, consisting of a winter garden, conversation and reading rooms, large dining halls, various reception rooms, an imposing gothic staircase, and bedchambers hygienically arranged. One notices various suggestive maxims painted on the walls, like the following: "Wolle nur eins, und das wolle von Herzen" (Desire but one thing and that with all the heart). "Die lohnendste Arbeit für einen Kranke ist: gesund zu werden" (The labor which repays a sick man the best is to get well).



Dr. Brehmer, founder of Görbersdorf Sanatorium.

Besides the sanatorium proper, there are two detached buildings of plainer construction, where patients are received at a reduced price. There is also a chemical and bacteriological laboratory, a meteorological observatory and a medical library. Prof. Rudolf Kobert, formerly director of the Pharmacological Institute at Dörpat, is the physician in charge, and he is assisted by five physicians of various nationalities. The clientage comes from Germany, Russia, Hungary,

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[1] Read before the Boston Society for Medical Improvement, December 13, 1897.

Poland; and I found two from America. The supervision of the patient's life is most exact and continuous; every two weeks he is examined anew by the professor, and is always under the observation of one or another of the physicians, all of whom except the director, take their meals with the patients. Each is individualized in his treatment. As an illustration of the painstaking care, I noticed in the little reading library certain starred books, and on inquiry found that they were of a rather exciting nature and were forbidden to those of nervous temperament as likely to produce a rise of temperament or some other unfavorable symptom. There are five meals a day reinforced by milk. Kefir is prepared on the premises in large quantities and is much used, especially in gastro-intestinal troubles and in conjunction with alcoholic drinks for night-sweats. Most of the patients use wine or beer. In fever milk is the principal diet, and as much as three litres in twenty-four hours is given a patient.

Hydro-therapeutics, as in the other sanatoria, is an important adjunct of the treatment in the form of simple bathing with acidulated water, the wet pack with massage and cold douches. I was interested in watching the method of giving the latter. In a room adjoining the douche sits a physician at a table, with a watch provided with a second hand, and with the names of those for whom the bath is prescribed. The attendant informs the physician through a speaking tube when the patient is ready, and the doctor turns on the water (which he alone manipulates) for the specified number of seconds, as indicated in his list. When through, the attendant throws a blanket about the patient and rubs him down. Only the stronger and convalescent patients are allowed this douche.

The sputum is deposited in shallow cuspidors scattered about the building, containing sawdust. Each patient also has a Dettweiler pocket spit-cup. The sputum is destroyed by burning.

A few minutes' walk from the Brehmer establishment brings one to Dr. Römpler's sanatorium, which is also extensive, accommodating about 100 patients. Although not as imposing as Brehmer's, it is equally comfortable and complete, and on account of the lighter character of the architecture, gives one a very pleasing and cheerful impression. In common with the other sanatoria, it possesses a fine winter garden, which is practically a great conservatory affording an extensive and beautiful view even to the horizon, and is the favorite lounging place for the inmates when the weather forbids outdoor life. The *Liegehalle* is in the second-story balcony with glass roof, which seemed to me preferable to those on the ground floor. The extensive park is laid out with pleasant paths of varying grades (some protected) extending up to the richly wooded mountain side, with seats, terraces and pavilions, affording comfortable and picturesque resting places. The method of treatment is similar to that of the larger establishment — abundant alimentation, outdoor air (rest in the reclining chairs and walking in the paths of gentle ascent) and hydro-therapeutics.

Dr. Römpler's personality is most pleasing, which doubtless has much to do with the success he attains. He is a great lover of nature and inspires his patients with his enthusiasm for outdoor life. In a few words he well sums up the conditions of cure: "Upon the ability of the organism to *resist* depends finally the possibility of cure. To increase this power of resistance through gradual blunting of the susceptibility to irritation (hardening); through the improvement of the nutrition and quality of the blood; and, finally, through the avoidance of hurtful influences, and through instruction and training for future guidance, is the principal problem of the phthisio-therapeutist."

The third sanatorium at Görbersdorf is that of Dr. Weicker, which is a small one, and, as Dr. Weicker says, on the plan of a home rather than that of a large institution, he and his wife living in the institution with his patients; and the method is essentially that of the others. It was originally founded by the Grafin Pückler, under whose name it still stands. Dr. Weicker also has charge of a people's large sanatorium in Görbersdorf, consisting of seven villas, which received 256 persons during the year 1896. It was established for working people who are members of the so-called insurance society for the disabled and aged; the expense being defrayed by the society, allowing each member a certain sum. The insurance societies of Germany of this nature are finding it for their interest to send their consumptive members to such an institution and have a certain proportion of them returned to their usual avocation, rather than support them indefinitely as invalids. Of 185 persons who were dismissed in 1896, 70.3 per cent. were capable of resuming their work: and for the three years from 1894 to 1896 inclusive, of those communicated with who were dismissed in these respective years as capable of resuming their work, 60, 71 and 89 per cent. respectively, still remained so at the beginning of 1897; so that from an economic point of view, this plan of people's sanatoria is a profitable venture for the insurance societies.

DAVOS.

In the upper Engadine Valley of Switzerland is the high altitude climatic station of Davos-Platz, where is situated the sanatorium of Dr. Turban. Davos first became known as a health resort for consumptives through Dr. Spengler, who was practising there and who communicated the fact of its immunity from phthisis to the German climatologist, Meyer-Ahrens. Through the publications of the latter, Dr. Unger, a consumptive, went to Davos and was cured; and through the exertions of Drs. Splenger and Unger the advantages of the climate for consumption began to be appreciated in Europe. It was a radical departure from the established ideas of a suitable climate for this disease, and it seemed a strange not to say dangerous experiment for a consumptive to pass the winter in the snows of the Alpine Mountains. As the favorable reports of those who had made the venture, however, became known, the fame of the place spread, and from eight in 1865, the number of consumptives who visited it increased yearly, until in 1890 they amounted to 1,511, of which 89 were Americans; and now it is the most popular high-altitude resort upon the Continent, the English coming next to the German in numbers. It is called a "winter resort," the climate at that season being considered the most favorable, although Dr. Turban told me that the seasons should make no difference, and one should remain continuously until he was cured. The climate is characterized by a cold, pure, dry air of great diathermancy, much sunshine and but little wind, resembling closely that of Colorado. The snow covers the ground deeply during the winter, but it is dry.

Davos itself is situated in a little valley a mile wide running from northeast to southwest. The majority of the patients who resort there occupy the numerous and large hotels which have sprung up, and although there is some sort of general medical supervision, they do not, of course, afford the constant and systematic care of a sanatorium.

Dr. Turban can accommodate about 70 persons in his establishment, which lies on the south side of Davos, protected by the mountain side on the north, and open to the south, upon which side of the building are most of the rooms, verandas and terraces for the rest treatment. The internal arrangements are good, and much like those of the other sanatoria. Each bedroom has a balcony, is heated by low-pressure steam indirectly, has a ventilating flue, hard floors, washable walls, and simple and easily cleaned furniture. There is a gymnasium, laboratory and the usual douche room. The method is the Brehmer-Dettweiler, with the emphasis upon exercise (walking) rather than upon rest, as the *jour médical* of an ordinary patient shows: First, cold friction or douche; 7.30 to 8.30, first breakfast; a walk until lunch at 10.30; a second walk until 11.30; from 11.30 until 1, rest in the reclining chairs; dinner at 1; afterwards rest again until 4; at 4, tea, and a walk until 6; rest from 6 to 7; supper at 7; after supper, rest in the reclining chairs until 10, which is bedtime. The greatest care is given to the matter of nutrition, and the food and its preparation receives the especial attention of the physician. Evidently Dr. Turban agrees with Dr. Dettweiler that his kitchen is his pharmacy.

Dr. Turban told me that his cured patients could return with safety to the climate of middle Europe, which was not always the case when they went to the south of Europe. He also mentioned the fact of the increased assimilation in this climate and the consequent rapid gain in flesh, patients gaining in a short time from ten to twenty pounds or more. Professor Kobert also called my attention to the same fact at Görbersdorf.

FALKENSTEIN.

Of all the sanatoria for the treatment of phthisis, that of Falkenstein is probably the most universally known, and its consulting physician Geheimer-Sänitatsrath Dr. Dettweiler, the most noted of phthsiotherapeutists. It is well to remember, however, that Brehmer, the father of the sanatorium treatment, was the teacher of Dettweiler.

Nine miles out of Frankfort is the picturesque village of Cronberg in the Taunus Hills, where resides the Dowager Empress of Germany for a good part of the year. A walk of about forty minutes up the hill from here brings one to the tiny village of Falkenstein, commanding an extended view over the valley of the Main with Frankfort in the distance. Here, in a location protected on the north, west and east is situated the sanatorium, 1,300 feet above sea-level. The institution consists of a main building with two wings joining it at an obtuse angle enclosing a large terrace, and two annexes united to the main building by covered promenade galleries. The terrace enclosed by the wings of the main building and looking towards the south, has a continuous broad veranda of glass, provided with sun blinds and curtains, where, upon cushioned reclining chairs one sees long rows of patients lying rolled in rugs, taking the rest cure, some reading or writing, others conversing, and a few sleeping. There are also, near by, pavilions, some revolving, affording further opportunity for the same treatment. The climate is that of central Germany, its principal characteristic being a pure atmosphere free from dust, which from Dettweiler's point of view, is the chief consideration in the climatic treatment of phthisis, provided it can be utilized continuously. Only about half the days in the month are sunny.

Falkenstein Sanatorium.

The internal arrangements are similar to those in the other large sanatoria: A large, well-ventilated dining-hall accommodating 200 persons; reading, music and billiard rooms; post and telegraph office; bacteriological and analytical laboratory; throat and douche rooms; various offices and consulting rooms. Each sleeping-room has a special ventilating flue and the usual simple furnishings; linoleum floors, washable walls; they are never swept but cleaned with damp or wet cloths. The windows are always open. Near by is the dairy and stable, gas-works, and a disinfecting apparatus. As in most of the other sanatoria the system of drainage is on the principle of chemical precipitation with cleansing basin. The large corridors for rest treatment (*Liegehallen*), which were first introduced as a means of treatment at Falkenstein, have a powerful gaslight between the heads of each two chairs permitting the patients to read as they lie out in the evening. Blue-glass spittoons containing water are distributed in the halls on brackets; smaller ones in the rooms, and white crockery ware ones on the grounds. Each patient is required to carry with him the Dettweiler pocket spit-cup, and expectoration except in these receptacles is absolutely prohibited — handkerchiefs or cloths not being allowed. The compliance with this law seemed to be perfect. The sputum is disposed of by throwing it in the waste water or burning.

Dr. Dettweiler, director of Falkenstein Sanatorium.

The *jour médical* for an average patient, as told by one of them, is as follows:

7 A. M. Rubbing — dry or wet — or a douche.

8. Breakfast, consisting of coffee, tea or chocolate, with rolls, butter, honey and milk.

Until 10, the rest treatment in the reclining chairs.

10. Second breakfast, of bread, butter, milk and soup, with wine or cognac. (Upon this latter Dr. Dettweiler places a high value.)

10.30 to 1 P. M. The rest treatment again.

1. Dinner: soup, fish, vegetables, several kinds of meat, fruit, dessert and coffee.

2 to 4.30. The rest cure again.

4. Milk.

4.30 to 7.30. Rest or walking.

7.30. Supper, consisting of soup, hot and cold meats, salad, preserves.

After supper the rest treatment until 10, with milk at 9.

10. Retire.

It will be seen from the above that the rest treatment (*Ruheluft Kur*) occupies most of the day, and herein is a marked difference between Görbersdorf and Falkenstein; Dettweiler lays great stress upon *rest* in the open air, while Brehmer put the emphasis upon methodical *hill-climbing*. Dettweiler so insists upon this system of rest treatment that the most of his patients spend from seven to eleven hours daily in the open air in spite of rain, fog or snow, and of cold, even to 12° below zero. As Ransom observes, "This form of treatment is almost independent of weather." Each patient on admission is carefully studied, not only his physical condition, but his temperament and will power, and his intelligent and willing co-operation with the physician is obtained. His plan of life is then arranged in all its details. He is constantly under the eye of the physicians, and always sees them at the principal meals. To this skilled watchfulness and care, the hygienic-dietetic measures, and the hyperaëration is due to the success attained in such an institution. Here, as at the other sanatoria, the treatment of fever is continued rest, physically and mentally, and this applies to all patients who have a temperature of 37 5° to 38° C. (99.5 to 100.4° F.) or over. At some, as at Hohenhonnef, the patient is not even allowed to lie out in the *Liegehallen*, for fear the moving and excitement may keep up or increase his fever, but is kept absolutely quiet in his room. Generally this treatment alone with some Hungarian wine or cognac suffices in a short time to reduce the temperature to normal. Knopf explains this disappearance of fever after a short sojourn at a sanatorium by the almost total absence of pathogenic microbes, especially the streptococci, in the pure atmosphere.

I was struck with the appearance of the patients as I saw them at dinner: they hardly differed from the persons one would see in the dining-room of an ordinary hotel; and presented but little, if any, the appearance one usually associates with a consumptive. During the entire meal I hardly heard a cough. Moreover it was as contented and happy a looking assemblage as one would see anywhere. The average length of residence is about three months.

The results at Falkenstein from 1876 to 1886, of the patients who have been kept under observation since their discharge, is 13.2 per cent. of complete cures, and 11 per cent. of relative (arrested), a total of 24.2 per cent.; 60 per cent. or more are improved. The expense here, as at most of the other sanatoria, is from $20 to $25 a week.

One cannot leave Falkenstein without carrying away a lasting impression of its founder and guiding genius, Dr. Dettweiler. It was my good fortune to ride up to the sanatorium with him from his modest home in Cronberg. It was a chilly, disagreeable morning in May, much like our March weather, which perhaps suggested his remark that it was not so much a climate as a method; tuberculosis could be cured in any climate. He told me of his early struggle with tuberculosis in his own case, when it seemed that he could not live. But the struggle was successful, and now he is a man of middle age or more, and has accomplished an immense amount of work, and is still the inspiration of his sanatorium. He is a man of great simplicity and sympathy, inspiring enthusiasm, and well illustrates the power of the personal factor in the success of the physician. He makes his patients love him, and in consequence they readily yield to his will and guidance. "In him," as Dr. Thorne says, "reason, science and long experience are correlated into action by discrimination, adaptability, sympathy and unbending will. In both of the senses in which the term can be employed, he is a presiding genius."

RUPPERTSHAIN.

About an hour's drive from Falkenstein is situated the people's new sanatorium (opened in 1895), containing about 80 beds, under the direction of Dr. Nahm, a former assistant of Dr. Dettweiler. It was almost entirely built by a wealthy lady of Frankfort, who disliking the proximity of the previous smaller one to her country home in Falkenstein, agreed to build one at Ruppertshain if this should be removed, a suggestion to neighbors of consumptive homes who dislike their presence. It is partially supported by the sanatorium at Falkenstein, all above five per cent. upon that investment being devoted to this purpose. Its situation is equally favorable with that of Falkenstein. Its internal arrangements are, of course, plainer but comfortable, and possessing all the facilities for carrying out the same method of treatment. Through the courtesy of the assistant physician I took dinner with the patients, which consisted of soup, with which many were served twice; meat with potatoes and beans, and beer. The women are kept entirely separate from the men, having their own dining-room and *Liegehalle.*

HOHENHONNEF.

Twenty-five miles south of Cologne, on the right bank of the Rhine, is the pretty village of Honnef, called the "Rhine Nice," and long known and visited for its mild and salubrious climate. About half an hour's walk up the hill from Honnef on the southwestern slope of the Siebengebirge is situated the new and luxurious sanatorium of Hohenhonnef, 774 feet above sea-level, commanding an extended and charming view of the valley of the Rhine with its vine-clad hills. It was opened in 1892, under the direction of Dr. Meissen who had been for ten years a pupil of Dettweiler. It accommodates about 90 persons, and possesses all the newest and most approved hygienic appliances; as Léon Petit says, it is almost too luxurious. In wandering through its various rooms I discovered a dentist's establishment even. The smallest room has not less than 70 cubic metres air space. Besides the large *Liegehalle* running along the southern side of the main building, there are other smaller ones among the trees. Each reclining chair has a table and an electric annunciator beside it and an electric light above. By means of screens any patient can isolate himself if he desires. In the *Liegehallen* one notices various mottos, as, for instance, *Verein Halbe Lunge* (the half-lungers' union). A large park and forest surrounds the building.

At dinner I was impressed with the healthy appearance and evident good spirits of the patients, and, as at Falkenstein, I hardly heard a cough. For pyrexia the rule is absolute, to remain in bed; and if any drug is considered necessary, lactophenin or phenacetin is used, with an ice-bag over the cardiac region if the heart is rapid. For the medicinal treatment of cough, peronin or codeia is used; and for night-sweats milk and cognac, and sponging with aromatic vinegar and water. Every morning each patient, before dressing, is bathed by an attendant with spirit and water to which is added a little sea salt, and he is then rubbed dry. Creosote is not used. The average length of residence is three months; and about 15 per cent. are considered cured, and 68 per cent. improved. The cost is about the same as at the other sanatoria, from $20 to $25 a week.

To the above list of sanatoria in Europe I want to add two in America which in their methods and management closely resemble those of their European *confrères* — the Adirondack Cottage Sanatorium at Saranac Lake, under the direction of Dr. E. L. Trudeau, and the "Winyah," Dr. von Ruck's at Asheville, N. C. The former, Dr. Trudeau's, seems to be almost better known in Europe than in this country.

THE ADIRONDACK COTTAGE SANATORIUM.

It differs from the construction of the German sanatoria in that it is upon the pavilion plan, consisting of a central building and fourteen small separate cottages. These cottages are of one story and accommodate from two to ten persons, the greater number having a capacity of from four to five. Each patient has his own room opening into a central sitting-room, and the partitions between the sleeping- and sitting-rooms reach but seven feet from the floor, an arrangement which gives the patient the benefit of the entire air space of the cottage; the walls which separate the sleeping rooms, however, reach to the ceiling. In the main building are the dining- and general sitting-rooms, and the various administrative offices, and on the upper floor large rooms for patients. There is also a library, chapel, recreation pavilion, and doctor's cottage, and probably one of the best equipped laboratories for the study of tuberculosis in this country, all in separate buildings.

Patients are received in the first stages of the disease, or whenever, in the opinion of the examining physician, they are likely to be benefited by the sanatorium treatment, and can afford to pay no more than five dollars a week, which includes medical attendance. This, of course, does not pay expenses, and the deficiency is met by subscriptions from those interested in the charity. "Thus is presented," as Dr. Trudeau truly says, "to the poor man, or at least the working class of people, an opportunity for recovery which cannot be had by the rich man at any price. The outdoor method is applied to all patients, but the details of the treatment, and above all, the amount of exercise allowed in carrying it out, are regulated by the activity of the patient's disease, his nutritive condition, and more especially, his temperature record."

Little stress is laid upon the administration of drugs. Absolute rest in the open air is relied upon to reduce the pyrexia. The results equal, if not surpass, those obtained in the European sanatoria; about 24 per cent. are cured, and 34 per cent. arrested.

An extract from a private letter to Dr. Trudeau from one who had spent some days in his institution indicates the spirit prevailing there: "Your patients there," it says, "are fortunate indeed; and I guess they all know it, for a happier set of invalids I never saw. At my table none looked ill, and were as intelligent, and refined and jolly a crowd as I have seen all summer. I have visited in my time many hospitals, asylums and homes, but none like this."

THE "WINYAH" SANATORIUM.

The Winyah Sanatorium, at Asheville, the excellence of whose climate for pulmonary diseases is generally acknowledged, is under the direction of Dr. Karl von Ruck, one of the leading phthisio-therapeutists of this country. The establishment consists of a large building accommodating about 100 persons, and connected therewith a bacteriological laboratory. The method of treatment is similar to that in the foreign sanatoria, and the results bear a favorable comparison. Tuberculin or its modified products are used in proper cases. This institution, like the German sanatoria, is for paying patients.

In conclusion, I desire to express my appreciation of all the courtesies extended to me by the gentlemen in the various hospitals and sanatoria I visited. I wish I could mention them all by name. Without their kind attentions, my visits would have been well-nigh fruitless. I cannot, however, forbear naming Professor Kobert, director of the Brehmer Sanatorium, who, with his assistant physicians left nothing undone to make my visit both instructive and enjoyable; also Drs. Römpler and Weicker at Görbersdorf; Drs. Dettweiler and Hess at Falkenstein; Dr. William Vanyzendyck at Hohenhonnef, and Dr. Paul Humbert of the Hospital Lariboisière, Paris.

One of the pleasures and privileges of the medical profession is the delightful interchange of courtesies which exists among its members in every land.

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OBSERVATIONS ON MENINGITIS IN INFANTS AND CHILDREN.[1]

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(Concluded from No. 13, p. 292.)

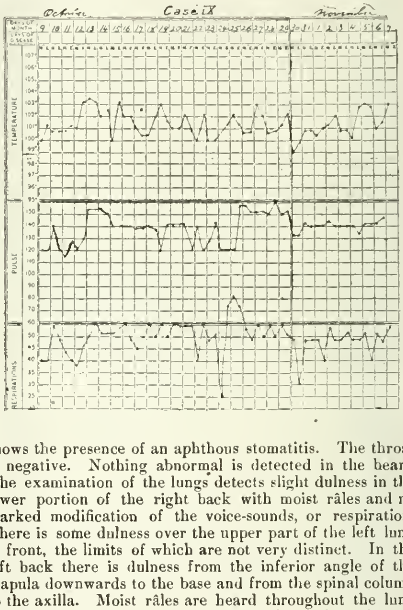
PNEUMOCOCCUS MENINGITIS.

The writer has had the opportunity of observing but three cases of meningitis due to the pneumococcus lanceolatus. Two of these cases were secondary to lesions in the lungs and pleura and the third was a case of primary pneumococcus meningitis. From such a limited number of cases it is impossible to deduce a clinical picture of the disease. It is fair to assume that in the secondary cases the clinical picture was modified by the original disease. In both of these cases cerebral symptoms did not appear until a day or two before death, and were quite insignificant at any time, considering the extent and character of the lesions in the meninges.

The case of primary meningitis was observed from the beginning, but the patient presented so few of the typical symptoms of meningitis that a diagnosis was not made during life.

It is impossible in a single case to determine how much the clinical picture was modified by the infant's age. From the literature on the subject it would seem as if primary infection of the meninges by the pneumococcus lanceolatus was infrequent. It is more than probable that the older descriptions of epidemics of cerebro-spinal meningitis due to the pneumococcus are erroneous, and that the organism in these cases was the intracellular diplococcus, which was not recognized at that time.

Case IX. Male, three years old. Entered the hospital on October 9th. The history was very incomplete. The child was said to have had measles at the age of one and one-half years and varicella and pertussis at two years of age. The present illness was said to have begun one month before he entered the hospital. During this month the patient was feverish, coughed more or less and showed symptoms of malaise. A physical examination made at the time of entrance into the hospital is as follows: "The child is very much emaciated and anemic. The respiration is rapid without much dyspnea. The expiration is accompanied by a grunt of pain. The expression of the face is anxious. The sensorium is clear. The mouth shows the presence of an aphthous stomatitis. The throat is negative. Nothing abnormal is detected in the heart. The examination of the lungs detects slight dulness in the lower portion of the right back with moist râles and no marked modification of the voice-sounds, or respiration. There is some dulness over the upper part of the left lung in front, the limits of which are not very distinct. In the left back there is dulness from the inferior angle of the scapula downwards to the base and from the spinal column to the axilla. Moist râles are heard throughout the lung and the respiration is harsh and vesicular with prolonged expiration. There is a small area between the inferior angle of the left scapula and the spinal column over which bronchial breathing and increased voice-sounds are heard. The spleen extends about one-half inch below the border of the ribs in the left axillary line. There is no albumin in the urine."



The condition remained about the same for three days and then the patient did not appear to be so well. The temperature and pulse were higher. There was dulness at the apex of the right lung and bronchial breathing over the right scapula. After several days the signs in the right apex were not so marked. The general condition remained about the same. The temperature was irregular and not very high. On October 28th, nineteen days after his entrance into the hospital, the child appeared to be somewhat better. He was brighter; his appetite improved and he seemed to have less discomfort.

The improvement continued until November 3d, when there was a marked change for the worse. The signs in the lungs were about the same as at entrance except that the dulness in the right back was more marked. It was difficult to make him take food and he was inclined to be drowsy and stupid. On the following day the temperature was higher. The pulse was very weak and stimulants were given subcutaneously. He vomited considerable mucus several times. The stupor increased.

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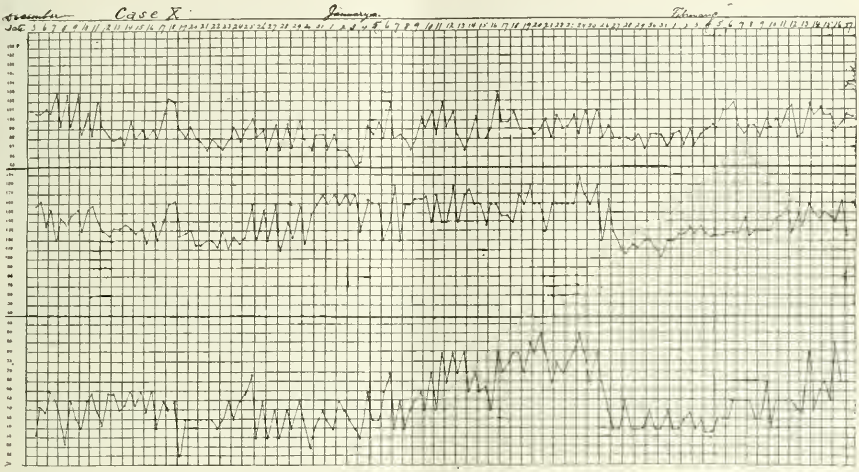
[1] From the Sears Pathological Laboratory of the Harvard Medical School.

On November 5th he became unconscious. There was no retraction of the head, or rigidity of the neck muscles. The respiration was labored. From this time he failed rapidly, and died quietly the next day. There were no symptoms of meningitis until three days before his death, and these symptoms were not at all marked until he became unconscious on the day before his death.

Autopsy (Dr. F. B. Mallory). The body is considerably emaciated but well formed. The heart is normal. Both lungs are adherent over their whole extent by not very firm fibrous adhesions. At the base of the right lung posteriorly there is a flat cavity in the pleura about five centimetres in diameter containing rather soft, cheesy material with a small quantity of opaque whitish thick fluid. The pleural surfaces on both sides of this cavity are considerably thickened. There is no odor in the fluid. The left lung shows several rather diffuse denser areas. The spleen is enlarged and softer than normal. The kidneys are pale, the glomeruli are not injected. The stomach and intestines are normal. The liver is pale.

Head. The dura is tense and considerable fluid escaped on incising it. The under surface of the dura is covered with a thin, watery, yellowish membrane, which can be readily rubbed off. The meshes of the pia all over the brain and extending down the cord are filled with a watery, yellowish-gray fibrino-purulent exudation. Coverglass preparations from the exudation in the pia and in the pleural cavity show numerous diplococci with capsules (diplococcus lanceolatus).



Case X. Female, nineteen months old. Entered the hospital December 5th. The history was very unsatisfactory. The infant was breast fed for two months, and was then given milk and barley for several months. She had had a general diet for several months. She was said to have had measles at nine months and to have had a cough for six weeks. During the last six weeks she was feverish at times. The patient was seen by the writer for the first time on January 1st.

A physical examination at that time is as follows: "The child is under-developed and is very much emaciated. The skin is dry and scaling. There is marked anemia. The glands in the groins are slightly enlarged. The intelligence is normal. The breath is very offensive. The nose and throat are negative. The tongue is coated. The mouth is negative. There are no evidences of rachitis. The heart's impulse is felt in the fourth space, just within the left mammary line. Dulness reaches to the sternum and begins in the third space above. Splenic dulness begins in the ninth space, left axillary line and the edge of the spleen is palpable a centimetre below the border of the ribs. Liver dulness begins in the fifth space, right mammary line, and the border and a portion of the upper smooth surface of the liver is palpable below the ribs. The abdomen is negative. Lungs: over the right front from the clavicle to the fourth rib and outwards to the axilla the percussion has a deeper and somewhat tympanitic tone than over the corresponding area on the other side. The respiration over this area is bronchial but diminished in intensity and of an amphoric character. The right back shows some dulness from the apex to the base with a tympanitic quality blended with it. The respiration over this area is diminished in intensity and absent in places. It is bronchial in character. Over the left lung the respiration is harsh both front and back. Examination of the ears shows infiltration and loss of lustre in both drum membranes with a cicatrix in the posterior part of the right one." On the following day the child vomited about an ounce of greenish-yellow pus which was very offensive.

On January 3d the patient was aspirated in the second intercostal space in the right mammary line. The trocar was directed inwards and backwards toward the median line and was thrust into solidified lung a distance varying from one to three inches. Nothing was withdrawn. A second aspiration was made in the back in the sixth space, scapular line. The trocar entered solidified lung. Some air which escaped was very offensive. Subcutaneous emphysema developed and extended round to the axilla. No rise of temperature followed aspiration.

On January 7th an examination showed less dulness over the right back. The respiration was bronchial and not so distant as before. The condition in front remained the same. The emphysema had practically disappeared.

On January 24th there was diminished respiration over the right back and dulness over the entire back below the inferior angle of the scapula and extending round into the axilla. There was no displacement of the heart or liver. The intercostal spaces were not obliterated, although not so evident as on the other side. There was a small abscess in the right axilla on a level with the fifth rib. There was no marked change in the physical signs except that the respiration was not so loud and the dulness was more evident. Aspiration was performed in the lower portion of the right back and a quantity of foul-smelling pus was withdrawn. The child was transferred to the surgical side and a portion of the sixth rib was resected. The cavity was irrigated and drained.

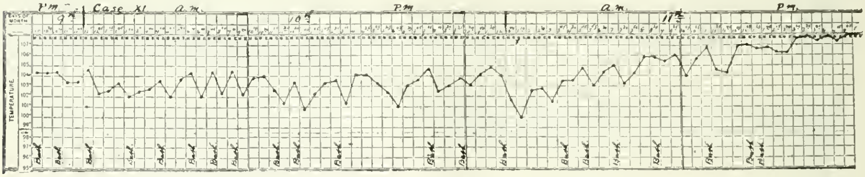
From January 25th until February 13th there was but little change in the general condition. The pus gradually lost its offensive character and diminished in quantity. The child took about the same quantity of food as before. On February 13th she appeared to be distressed. The respiration was more or less "grunting" in character. The temperature was 102° F. The abdomen was distended with gas. These symptoms subsided. On the 16th she vomited. The vomiting was repeated in the night and during the following day. On the morning of the 17th the pupils became dilated. The head was slightly retracted. The child was very weak but conscious. There was no rigidity of the extremities or hyperesthesia. No convulsions, no strabismus. The child died quietly about 9 o'clock in the evening.

Lumbar puncture was performed on February 17th and a very turbid fluid was withdrawn which contained numerous polymorphonuclear leucocytes and considerable fibrin. A cover-glass preparation stained with carbol-fuchsin showed numerous lancet-shaped diplococci surrounded by capsules.

Autopsy (Dr. Wentworth). The body is very much emaciated. The heart, liver, pancreas, left lung, stomach and intestines are normal. The spleen is slightly increased in size; the trabeculæ are distinct; the pulp is not much increased. The kidneys are normal in size; the capsules are not adherent; the cortex is opaque; the pyramids are dark red in color. The mesenteric glands are somewhat enlarged; in one of them there is a small calcified focus; the others are reddish-gray in color and translucent. The bronchial glands are enlarged; in one of them there is an abscess cavity about half a centimetre in diameter filled with pus. Cover-glass preparations of this pus show the presence of streptococci. One of the bronchial glands contain a small calcified focus. The pleura over the right lung is much thickened, in places fully two millimetres thick, and firmly adherent to the chest wall. At the lower portion there is an abscess cavity, the walls of which are covered with creamy pus. The lung is small and solid. On the outer and lower part of the lower lobe, corresponding to the axilla, there is an opening one and one-half millimetres in diameter, through which a probe passes into a bronchus. This opening connects with the abscess cavity in the pleura. The lung on section shows dense bands of fibrous tissue extending in from the thickened pleura and forming a coarse mesh work over the surface. In this mesh work the lung tissue is more or less well aërated and varies from pink to dark red in color. Many of the bronchi are surrounded by dense fibrous tissue.

Brain. The pia-arachnoid is edematous. The vessels are injected. Following the course of the vessels are streaks of yellow opaque exudation infiltrating the pia, but not on the surface. This condition is generally distributed over the vertex and base of the brain and extends down the cord. The general appearance of the brain is as if it were covered with a layer of translucent jelly in which are opaque yellow streaks following the course of the sulci. (The brain was preserved for the museum and the ventricles were not opened.) Cover-glass preparations and cultures from the exudation covering the brain and cord show the diplococcus lanceolatus to be the only organism present. Cultures from the liver, spleen and kidney are negative.

Microscopic Examination. The brain was hardened and preserved in formalin. Portions from various parts of the brain were mounted in parafin and stained with hematoxylin and eosin. There is intense purulent infiltration of the tissue of the pia-arachnoid. There is a small quantity of fibrin between the cells and about the vessels. The veins are dilated and many of them are occluded by red thrombi. The cells in the exudation are chiefly polynuclear leucocytes, with here and there a few lymphoid cells. The nuclei are in general well preserved, but in places there is some nuclear detritis. All of the arteries in the sections show accumulations of cells within the elastica. These cells are large, have vesicular nuclei; and appear to be derived from proliferation of the endothelium. Leucocytes are found here and there among these cells. Diplococci are scattered throughout the exudation. The cortical layer immediately beneath the membranes is edematous. There does not appear to be any marked increase in the neuroglia.



Case XI. Female, ten months old. The infant had been fed on modified milk and had gained steadily in weight. She had always been well, and was in all respects a normal and vigorous baby.

On December 24th she vomited, and it was found that she had taken several ounces of sour milk. On the following day she seemed well, but the dejections were not normal. During the next two weeks she appeared to feel perfectly well. Her appetite was good and she was playful and bright. The dejections during this time were not entirely normal. At times they were somewhat constipated.

On January 8th the infant was fussy and irritable, and did not take all of her food. On January 9th at 5 o'clock in the morning the baby vomited. The temperature was not taken, but she was not thought to have fever. The vomiting occurred again at 9 o'clock and again in the afternoon. The child took but little food during the day. The temperature was taken in the evening and was found to be 106° F.

A physical examination at this time is as follows: "The infant is well developed and plump. There is considerable stupor, from which the baby can be roused without difficulty. The skin is pale and gray. There is no efflorescence. The pupils are equal and react to light. The anterior fontanelle is two inches in diameter transversely and two and one-half inches antero-posteriorly, and pulsates. The tongue is slightly coated. The throat is negative. The lymph-glands are not enlarged. The respiration is rapid. The lungs are not abnormal. The heart-sounds are clear and strong. The heart's action is rapid and regular. The spleen is not palpable. The edge of the liver is palpable two inches below the border of the ribs in the right mammary line. The abdomen is soft and not distended. Palpation of the abdomen is negative."

On January 10th the stupor had deepened somewhat. The temperature remained high in spite of frequent baths. During the day the infant had five convulsions. The convulsions were tonic and clonic, and lasted about one or two minutes. There was no rigidity of the head, or tenderness in the neck, or elsewhere. The extremities were lax. The abdomen was slightly distended but not tense. The child roused from her stupor when handled. The pupils were equal and reacted to light. Nothing abnormal was detected in the heart or lungs. The ears were normal.

On January 11th the general condition was worse. The stupor was more marked. The extremities were somewhat rigid. There was no tenderness in the neck or spine. The head was not retracted. There was no recurrence of the convulsions. The pupils were equal and reacted to light. The lungs were not abnormal. A loud blowing systolic murmur was heard over the whole cardiac area, especially loud over the mitral area. The heart's action was regular and very rapid. The respirations were from eighty to ninety in a minute and assumed a Cheyne-Stokes type at times. The infant appeared unable to swallow. During the last few hours the infant moaned with expiration. The child died quietly at 5.15 P. M., January 11th.

Autopsy (Dr. F. B. Mallory). Heart. The valves and cavities are normal. The latter contain fluid blood.

Lungs. The lungs are downy to touch; pink in color; there are no areas of atelectasis or of consolidation; there is a little serous fluid in the right pleural cavity.

Spleen. About normal in size; dark in color; on section the follicles are distinct; apparently no increase in pulp; the surface is moist.

Kidneys. The kidneys are injected; on section the surface is moist; the glomeruli show as red points; uric acid infarction in the apices of some of the pyramids.

Peritoneal cavity. The small intestines are distended with gas, with here and there contractions of the gut; a moderate quantity of thin, greenish fluid in parts of the jejunum; a little semi-solid material in the cecum. The mesenteric lymph-glands are little if any enlarged. The lesser peritoneal cavity contains a small quantity of dirty brownish-black fluid surrounding the tail of the pancreas. No evidence of peritonitis is visible.

Esophagus. Just above the cardiac orifice on the right side the wall is softened in two longitudinal folds so as to be almost perforated; the adjoining mucous membrane is soft; there is no injection.

Stomach. One centimetre from the cardiac orifice, towards the fundus, there is a small perforation, three millimetres in diameter. The wall adjoining it is exceedingly thin and soft, consisting only of strands of muscular tissue. The remainder of the stomach walls appear to be fairly normal. The gastric contents resemble the fluid found in the lesser peritoneal cavity.

The intestinal mucous membrane is not abnormal.

Skull. The anterior fontanelle is open and large.

Brain. Over the convexities the meshes of the pia are distended and filled with a clear serous fluid, more or less separated into pockets by a yellow purulent infiltration especially of the upper layers of the pia. This infiltration extends in part diffusely through the pia but is especially noticeable accompanying each vessel of the pia in two parallel yellow lines, one on each side of the vessel. The infiltration extends on each side to the bottom of the longitudinal fissure, and into the fissure of Sylvius. At the base of the brain the exudation seems rather more serous in character and extends down the cord. The blood-vessels of the pia and of the brain are moderately injected. The brain tissue is quite soft and on section transparent and moist. The lateral ventricles are somewhat dilated.

Bacteriological Examination. Cover-glass preparations from the sero-purulent exudation of the pia show enormous numbers of lancet-shaped diplococci, often in short chains of four to eight, surrounded by perfectly definite capsules.

Cultures. Spleen negative. Kidneys negative. Liver: one colony of diplococcus lanceolatus. Lungs: numerous pin-point colonies of micrococcus lanceolatus and a few colonies of streptococcus, many large colonies of staphylococcus aureus. Brain: two tubes, thirty-six hours after inoculation, show the surface of each tube covered with innumerable minute, transparent colonies; in one tube a single large white colony; cover-glass preparations show lancet-shaped diplococci.

Anatomical Diagnosis. Acute cerebro-spinal meningitis due to the diplococcus lanceolatus; post-mortem softening of esophagus and stomach.

Microscopic Examination (Dr. Wentworth). Portions of the brain were hardened in alcohol, mounted in parafin, and stained with hematoxylin and eosin. Additional sections were stained by Weigert's fibrin stain and by Gram's method.

There is a marked purulent infiltration of the pia-arachnoid. Most of the cells are polymorphonuclear leucocytes, but there is in addition a certain number of large cells with considerable protoplasm and large vesicular nuclei. These cells are probably derived from proliferation of the endothelial and fixed connective-tissue cells. A variable quantity of fibrin is found especially about the vessels and to some extent between the cells. The cells of the exudation are all well preserved and stain sharply. Sections stained by Gram's and Weigert's methods show typical pneumococci in small numbers scattered irregularly throughout the exudation. Along the surface of the cortex a slight invasion with leucocytes has taken place. The most marked lesion in the brain tissue, however, is found along the blood-vessels entering from the pia. The perivascular lymph-spaces are dilated and often contain an abundant growth of pneumococci. In places leucocytes are found among the organisms, or in the tissue adjoining them. Occasionally small abscesses are present filled with more or less fragmented leucocytes, red blood globules and pneumococci; such foci have unquestionably arisen from extension of the organisms along the blood-vessels and the production of foci of necrosis and infiltration. Many of the small arteries show slight thickening of the elastica and an increase of cells between it and the lining endothelium; a condition already described in Case X, where it was more marked.

I desire to thank Dr. E. M. Buckingham for his kindness in permitting me to use several cases of epidemic cerebro-spinal meningitis for purposes of illustration, and for the opportunities which I had for studying the disease in the wards of the Children's Hospital during the epidemic of last spring.

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THE PROPERTIES OF SNAKE POISON.

A Review of the Work of Fraser and Calmette.

BY A. K. STONE, M.D.,

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Inspired by the results which have been obtained from the close study of bacteria and bacterial toxins, a number of observers have been led to turn their attention towards the interesting and fascinating subject of snake poisons. The similarity of their action to the bacterial poisons made it probable that similar methods of experimentation would give equally favorable results. Although the quantity of venom secreted by a given snake is much in excess of the amount to be obtained from many millions of bacteria, yet the difficulties are in many ways greater than those which beset the bacteriologist. The latter has to do with short-lived plants which can for the most part be grown easily under artificial conditions and reproduced at will for any number of generations; while the difficulties in the way of collecting venomous snakes from the jungles of India, the banks of the Nile, from Australia and tropical America are clear to all.

From a practical side the subject has a most important bearing. Such statistics as are at hand show that in British India alone about 20,000 persons lose their lives each year from the bites of snakes, and that the loss of cattle and other domestic animals is still more severe. Explorers and travellers in tropical regions are much annoyed, both by the loss of valuable camp-followers, pack animals or hunting dogs, as well as by the possibility of danger to themselves when going through the thick jungles. Furthermore, none of the cures for snake-bite have any very great value. Some of the observers and students upon the subject go so far as to say that alcohol, ammonia, strychnia, stimulants, and the diuretics and diaphoretics which produce rapid excretion through the skin and kidneys, have no effect whatever upon the action of the poison. Others are willing to allow that they all have some value, and that cases near the border-line of the minimal fatal dose are often saved by the action of these various remedies, but agree with the first-mentioned observers, that when the bite has been severe, and the dose has been a large one, the drugs have very little or no effect upon the fatal course of the poison. Still a third class insists that they get sure results from the administration of various remedies. For example, strychnia in enormous doses is being recommended by Müller, of Australia, and many cases are quoted to prove the efficacy of this drug. The following is generally accepted, as the best treatment: If an arm or leg has been bitten apply, first of all, a tourniquet, then wash the part at once with a solution of permanganate of potash or chromic acid, enlarging the wound to induce free bleeding, and aiding the removal of the poison by sucking; or freshly made chloride of lime (1–60) can be injected around the marks of the fangs. These measures, if undertaken early, are often effective in removing or oxidizing the venom so that life is saved. The native doctor and snake-charmer often seem to have found some methods of successful treatment or of producing immunity. Too many well-authenticated stories exist, showing immunity and cure, to make it at all doubtful that these persons have methods which are doubtless of value. In all of these the head or poison glands or gall or blood of snakes plays a prominent part.

One thing which makes it difficult to estimate the value of any given remedy is the impossibility of knowing how large a dose of venom has been introduced. When a snake strikes, if successful, ten to fifteen drops of the poison are usually discharged from the poison gland into the wound; or, as Calmette has found by experiment with snakes kept in confinement, that from 100 to 130 milligrammes of fluid poison, which would yield 20 to 50 milligrammes of dried poison, is discharged at a time. Whether this latter small amount is due to the fact that the snakes have been kept in confinement is not stated.

If a snake misses the first time it strikes the venom is nevertheless discharged; then on striking a second time there is much less poison in the gland which can be injected into the wound. Hence a person may be bitten by one of the most venomous snakes and yet have only a few drops introduced, enough to produce very unpleasant symptoms, but not enough to cause death and consequently many cures may appear to be effected by various drugs which are in reality due to the small dose of the poison.

A question of much dispute has arisen, as to the difference of the various poisons. It has been generally believed that there were several distinct varieties of poison, and that snakes should be divided by the peculiarities of their poisons; but Calmette has asserted boldly in the last few years that not only is the active principle of all snake poisons alike, but that it is identical in the poison of scorpions and lizards, and that the differences which have been noted in the action of the venom of various snakes was due to the presence of non-toxic albuminoid substances which are combined with the active poison in varying amounts. Thus the edema, the general hemorrhages and the hematuria which are observed for the most part as following wounds made by the less poisonous snakes are accounted for by the action of the practically inert albuminoids which can be removed by heat, leaving an active poison which can be dried and found to be of equal potency and similar action as similar products from the more poisonous snakes.

All the recent observers are agreed that an animal or person can be vaccinated against what would otherwise be a fatal dose by the subcutaneous introduction of small non-toxic doses of the poison. But the reasons therefore cause discussion. Fraser and Phisalix believe that antidotal properties reside in the venom along with the toxic. Fraser states his belief as follows: "that protection or immunity is chiefly due to the accumulation in the blood of an antidotal substance, which originates, at least in part, from the venom itself, and is normally one of the constituents of the venom." Calmette, on the other hand, denies this position entirely, believing that the antidotal properties are formed in the blood of the vaccinated animal by the organism itself. The experiments on this subject will be detailed later.

It has been found that the blood-serum of animals that had been vaccinated against snake venom had a certain antidotal power; though it was also observed that the blood-serum of several animals which were known to be immune to snake poison, the mongoose, for example, did not have antidotal properties. Fraser's experiments showed that the blood-serum of immunized animals gave him antitodal results and that the results were most marked when similar poison was employed and that in a less marked degree did the serum act to protect against the venom of other varieties of snakes. His method of experimentation was to mix the serum and the venom, having first determined what the minimal fatal dose might be, and then find out what was also the smallest amount of serum necessary to neutralize this dose of venom. *In vitro* he was able to get regular results, but when he turned from this thoroughly artificial method to an attempt at a practical working he found that it took a great deal more serum to save life; even if the serum was introduced half an hour before the venom. He was inclined to believe that too exaggerated an idea of the value of the serum might gain ground. According to his calculations, it would take at least 300 c. c. or 10 or 11 oz. of the strongest rabbit serum that he was able to produce to save the life of an average-sized man who had been bitten by a venomous serpent — an amount which would practically destroy the possibility of use.

By further experiments he found that the blood-serum of venomous serpents and their gall possessed antidotal properties, but to a much less degree than the blood-serum of immunized animals.

Fraser next turned toward the ingestion of poison through the stomach for the production of immunity. That snake poison was inert when taken into the stomach had been known for a long time. Some of us will remember the impression made upon us by the description of making arrow poison in one of Captain Mayne Read's books, when, after adding the poison sacs of several snakes to the mixture, it was tasted to see if it had the proper consistency. Also the old method of sucking the poison from the wound had demonstrated often that the venom was harmless when taken into the stomach, and some snake-charmers say that they have acquired their immunity by this means. The poison is not absorbed by the walls of the stomach, nor is it changed by the action of the gastric juice, but in the intestine it is rapidly decomposed and rendered inert before it can be absorbed. This fact pointed to a possible antidotal action in the bile and to a later series of experiments.

Fraser's experiments were as follows: A cat was fed upon cobra poison for a month and at the end of that period taking more than eighty times the fatal dose, had the poison been introduced subcutaneously. The cat was not made sick by this diet, and at the end of that period was found to be protected against one and one-half times the minimal fatal dose injected subcutaneously. White rats were fed 10, 50, 200, 500, 1,000 times the fatal dose of poison without harm. It was found that two hours were necessary to elapse in order to give protection and that when once acquired the animals would remain immune for five or six days. The results are of no practical value, as two hours is too long a time for the action of an antidote for such a rapidly working poison as snake venom.

From the consideration of the above facts and experiments, Fraser concluded that the antidotal powers of the blood-serum were due to a chemical reaction, because, for example, a certain amount of serum mixed with five times the fatal dose could not neutralize the poison, if they were left in contact but ten minutes, but would if the process was allowed to continue for twenty minutes, that is, a definite time must elapse for a reaction to take place. The power of the serum is not destroyed by drying, neither is it injured, but is rather increased in power by bacterial action (?). Finally, immunity cannot be due to phagocytosis, this process does not exist *in vitro* but is a living process.

During the past year Fraser has worked on the antidotal properties of the bile. He reasoned that the bile was what was poured over the poison as it passed unchanged from the stomach, and consequently it was probably the neutralizer of the poison. Also it was well known that bile of venomous snakes formed an important part of the medicines of the India snake-doctors, some of them even refusing to aid in the collection of bile on the ground that the English would learn too much. It was found that in the same way as blood-serum of immunized animals, the bile of poisonous serpents mixed with the poison prevented lethal doses from producing death, and the amount needed is only slightly more than the blood-serum. The bile of innocuous snakes was also tried. Most of these have rudimentary poison-glands and they are immune against the bites of the venomous snakes, and their bile was found, as would be expected, anti-venomous, but to a less extent than the poisonous varieties. Ox bile was found to have neutralizing power, but only about one-seventh the strength of that of the venomous snakes; while the bile from rabbits and guinea-pigs was still feebler. But a decided obstacle to the use of bile as an antidote is the fact that bile itself is poisonous when introduced subcutaneously, and some of the animals experimented upon, though saved from the snake poison, died after four days, with symptoms of bile poisoning rather than snake poison.

An attempt was made to get at the active principle of the bile, and for this purpose bile of a puff-adder was treated with absolute alcohol, and after further treatment it was found that the portions of the poison soluble in alcohol had little anti-venomous properties. The portion of the bile insoluble in alcohol was treated with water and a dark green residue was left on evaporation, weighing about one twenty-sixth of the original bile. White rats were used for experiments; and when it had been determined that the amount of crude bile of the puff-adder sufficient to neutralize the minimum lethal dose of cobra poison was .00025 mg. per kilo., the amount of the aqueous extract of the alcoholic precipitate necessary was but .00001 mg. per kilo. The proportion here to the quantitative result is very striking. These results, it is to be borne in mind, were *in vitro*, and the quantity necessary to act on the living organism Fraser calculates as 1,600 to 2,000 times greater.

Calmette, who is the head of the Pasteur Institute at Lille, has been at work for a number of years upon the subject of toxins, and especially those of snake venom. In July of 1896, before a committee of the Royal College of Physicians and Surgeons, of which Prof. Sims Woodhead was the chairman, Calmette made the following demonstration of the antidotal power of the serum of horses treated by repeated and increasing doses of snake venom:

(*a*) Six rabbits were taken and three cubic centimetres of the serum was introduced into the vein of the ear; five minutes later a dose of poison calculated to kill the animals in twenty minutes, if unprotected, was injected into these rabbits and also into two control animals. These latter died in sixteen and seventeen minutes respectively, while the six protected rabbits survived and remained well, though under observation for a number of months.

(*b*) Eight rabbits were taken, and each was injected with poison calculated to kill in about two hours time. One-half hour later three cubic centimetres of serum was introduced into the ear vein of two of them. At the end of an hour a similar amount was injected into a second pair, and at the end of an hour and a half a third pair were treated with five cubic centimetres of the protective serum. One of this last pair of rabbits died during the protective injection and the other about fifteen minutes later. The two control rabbits died in one hour and forty minutes, and one hour and forty-five minutes; those, however, that had been injected at the end of one-half and one hour lived.

(*c*) This experiment was to test the immunizing property of the serum. Three cubic centimetres were introduced intravenously, and fifteen minutes later a dose of poison which would be expected to kill the animal in twenty minutes was introduced and the animal lived.

(*d*) A dose of poison sufficient to kill in twenty minutes was introduced by the ear vein, and three minutes later three cubic centimetres of the protective serum was injected by the other ear vein; and the animal remained alive.

Convinced by these experiments, the committee recommended the use of the serum in India and Australia. And for more than a year the Institute at Lille has been sending out its serum to various parts of the world, and a number of favorable reports have begun to be received by Calmette, of which the following are examples:

Case I was a boy working in the laboratory at Lille. He incautiously opened a box which contained a newly arrived lot of snakes and was promptly and severely bitten on the index finger. Almost immediately the hand and forearm became swollen and edematous. An hour later there was insensibility of the forearm and hand, great pain in the upper arm and neck and axilla, and there was nausea. Twelve cubic centimetres were injected; and from that time the symptoms began to subside, and by the next day the sensibility in the hand had returned, the edema was less, and the boy was practically all right. A woman who chanced to be bitten by the same lot of snakes died in two hours, untreated.

Case II. A native camp-follower, a big man, was bitten in several places. One half-hour later he was seen, alarming symptoms having already set in. He was nearly comatose, with subnormal temperature and pulse of 140, which was weak and irregular. There was difficulty of respiration, and vomiting, spasm, pain in the legs and much edema. He was given an injection; the next morning was much better; and in two days returned to his work.

Case III. A girl of thirteen was bitten by an Egyptian cobra, the asp of Cleopatra. Three or four hours later she was brought to the hospital in Cairo in a state of complete collapse, apparently a most desperate case. She was insensible; there were no reflexes, and the pupils were dilated and did not react to light. Twenty cubic centimetres of the serum were given at 7.30, and by 11 o'clock she seemed better and could answer questions; the pulse was 140. A second dose of 10 cubic centimetres was given, and within twelve hours she appeared to be out of danger.

So far reports have been received showing favorable results from similar cases that have been bitten by the following venomous snakes: (1) the naja-tripudians or cobra of Indo-China, (2) the bungarus cæruleus of India, (3) the naja-haje or asp of Egypt, (4) the naja-noir of West Africa, (5) the bothrops lanceolatus of Central America.

These favorable results lend further credence to Calmette's position that the active toxic property of all venoms is the same. To those who are interested in methods by which such serum is obtained and its strength determined, a brief statement of Calmette's methods may not be out of place. First of all he determines the dose of poison which is required to kill a rabbit in twenty minutes. Next he injects either just before or within ten minutes of the time the dose of poison is given one-half, one, or two cubic centimetres of the serum. If he finds, for example, that one cubic centimetre of serum is sufficient to save a rabbit weighing two kilogrammes, he says that this serum contains 2,000 anti-venomous units. He makes and sells nothing less than serum containing 1,000 units, and for export to the countries where the most poisonous serpents are found he uses serum of the strength of 4,000 units. The dose therefore for a man of 75 kilogrammes is about 75 grammes or three ounces of the 1,000-unit serum. The serum appears to bear transportation and variations in temperature and to keep indefinitely in properly sealed bottles.

Incidentally, Calmette made a number of other interesting observations. He found, like Fraser, that his vaccinated rabbits remained immune for a considerable time; for example, one that had received finally a dose of 60 milligrammes of poison, or sufficient to cause death in 120 non-vaccinated rabbits, was able at the end of eight months to resist a dose which was capable of killing three rabbits. Also, animals which had become immunized rapidly lost their immunity within a few days. A female rabbit was found able to transmit her immunity providing the gestation took place during the height of the immunizing period, and the young retained this immunity for two months. On the other hand, an immunized male rabbit was unable to transmit his immunity to his offspring.

In attempting an analysis of the poison, Calmette, as has been said, agrees with certain observations made by various observers, but gives different interpretation to the facts. For example, he acknowledges that heat reduces the action of the poison. But he will not allow that there is any change brought about by the action of heat by which the poison is transposed into a vaccine, as Fraser and others have supposed, but that the toxic power is simply reduced and when injected into an animal the result is simply that of introducing a small dose of normal virulent poison — antidotal properties developing in the serum of the organism. Phisalix, of Paris, in 1896 published some researches, conducted by passing venom through an unglazed porcelain filter. He found that the filtrate may be injected into rabbits in doses three or four times as great as the normal fatal amount, and the animals do not die, but are made immune. From this Phisalix concludes that he removes the active toxic principle by the aid of the filter, while the antitoxic material passes through the porcelain. Calmette maintains that this deduction is not warranted, and that the results obtained are misleading. He makes a modification of the experiment as follows: A gramme of venom was taken, dissolved in water, heated to precipitate the albuminoids, and filtered to remove them. The precipitate collected from the filter was found to be harmless and it was possible to inject the whole amount of albuminoid material without producing death. The filtrate, on the other hand, was strongly toxic, and the fatal dose corresponded with the amount of the untreated poison. The filtrate was further dialyzed in order to remove all the salts. The residue was then evaporated to dryness over H_2SO_4, and he found that the material left was of great toxic power, as was shown by the fact that while the normal venom requires a dose of 0.6 of a milligramme to kill a 2,000-gramme rabbit in twenty minutes, the same result was brought about by a dose of this active toxic principle of .01 of a milligramme.

Comparing his results with those reported by Phisalix and confirmed by his own observation, he concludes that what takes place during the process of filtration is that the porcelain filter at first lets a small amount of the poison through its pores but quickly becomes coated by the albuminoid materials of the poison and as a result is transferred from a filter into a dialyzer and the toxic principle no longer passes through but only the salts of the poison; that the filtrate, so called, when injected, simply acts as a weak dose of poison.

The filtrate obtained after precipitation by heat gives the biuret and Millon's reactions, but does not give the reaction of xantho-proteids. From such imperfect data it is impossible to state exactly what sort of an organic compound is present as the active principle of the snake poison.

From the above meagre report of the painstaking work that has been done upon this subject, it will be seen that decided steps in advance have been made in the past few years in our knowledge of the nature of snake poison, the most important of which is the assertion that all poisons are alike, and second, that serum from horses made immune to snake poison by the venom of the most poisonous snakes has the effect of counteracting the poison of all varieties of snake venom, and that the serum can be obtained of such strength and concentration as to make it a practical remedy. The short time, a year and a half, that this serum has been in general use makes it impossible to speak definitely about the matter, but the number of favorable cases already received makes it probable that a real antidote to snake poison has at last been found; though whether it can be produced in sufficient quantities to supply the demands of the tropics is not as yet demonstrated.

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Clinical Department.

GLIOMA OF THE BRAIN.[1]

BY E. S. BOLAND, M.D.

J. W. P., forty-six years of age, married, had to give up work in September, 1896. He gave a history of fair general health, though never rugged physically and not very ambitious mentally, though he had a fair education and when younger had preached some, and up to the time of his break-down he sung a correct and acceptable tenor in a church choir. For the past seven years, until September last, he had been employed as general utility man in one of our large manufacturing houses, and was a faithful and efficient servant, well thought of by his employer. For some months before he broke down, his wife and daughters noticed that he was very forgetful, and also that he was more irritable though he would soon get over his annoyance and apologize if he, during the flurry, had spoken hastily. In addition, during most of the past seven months he complained more or less of head pains, which he located in the vertex and occipit. He would wet his pillow with cold water before retiring, in the fancied belief that it afforded belief to the cephalalgia.

When I was called to him it was near the end of September, 1896. He was sitting up, but complained of vertex pains and had a temperature of 101.5°, pulse 96. As there was anorexia and some coating of the tongue, I was on the lookout for typhoid. Under rest and antipyretics he improved so much that I gave up the typhoid theory, and he went back to work after three or four days, but only for a day or two. Any effort was too much for him, and extreme debility and his old head pains returned.

At this time, October 18, 1896, there was weak fast pulse, slightly elevated temperature, sluggish bowels, and much vertex heat and pain complained of. Mental state was almost normal; no localized paralysis or impairment of special senses; though his family thought his sight was not as good as formerly. There was more or less vomiting at this time. I inclined to the belief that he had cerebral meningitis, a view that Dr. C. F. Folsom, who saw him about the end of October, could not indorse.

He was admitted to the Boston City Hospital November 2d, where he remained eighteen days, admitted as suffering from hysteria, and discharged with diagnosis of cerebral tumor. No operation was advised fortunately, and he returned to his home about November 20th.

After his return from the hospital his symptoms grew rapidly worse, and he soon became totally blind and lost all sense of smell, though his hearing remained first-rate. His stomach grew more unstable, less and less food was retained, and morphia had to be given to relieve the cephalalgia and wakefulness.

About January 1st he was found with the left side totally paralyzed; there was incontinence of urine and feces, and no perception of light or odors. Bed-sores developed, and though still able to speak, he sank fast, and died January 26, 1897.

At the autopsy a clear cyst, as large as a dried date, lay on the floor of the right lateral ventricle just above the corpus striatum, whose surface, however, it did not depress or in any way give evidence of injurious pressure to the surrounding parts.

The left occipital lobe was occupied by a new growth that at the posterior extremity was so firmly adherent to the dura that it was somewhat torn and on removal the dura had to be removed with it.

Dr. W. F. Whitney's appended report will best describe it:

> An illy-defined mass, replacing and infiltrating the posterior part of the occipital lobe for a distance of about ten centimetres in length and the entire breadth. Its anterior edge was about the line of the parieto-occipital fissure. The outer surface was irregular and ragged, and at the posterior part was adherent to the dura mater. The section surface showed a soft, grayish mass, dotted with dark red (hemorrhagic) spots, and yellow opaque (necrotic) areas. (The brain was torn and lacerated when received, probably during removal, from the very soft character of the growth, so that a more exact localization was impossible.)
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> *Microscopic Examination.* — The structure was found to be a growth of small cells of irregular shape, with very fine prolongations associated with them, and which apparently passed between them, giving to the whole an aspect of very closely felted cells and fibres. An occasional ganglion cell could be found in the mass, and the transition into the intact brain tissue was perfectly gradual.
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> Diagnosis. — Small-cell glioma of the right occipital lobe.

I report this case for information. Why was this man blind and why did he lose the sense of smell while hearing was intact? Is it usual to find in cerebral pathology as large an amount of brain tissue involved and still giving so little evidence until so late in the disease?

The number of cases of, and deaths from, typhoid fever in Philadelphia greatly decreased last week.

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[1] Reported before the Boston Medico-Psychological Society, March 18, 1897.

Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D.

A CASE OF INNOMINATE ANEURISM TREATED BY ELECTROLYSIS THROUGH FINE GOLD WIRE.[1]

Stewart reports the autopsy on a case of a very large innominate aneurism, which had passed beyond the stage where operation or medical treatment could hope to effect a cure, and in which he had employed galvanism for one hour and a quarter forty-one months previously, a current of 85 milliampères being passed through ten feet of fine gold wire introduced into the tumor through a hollow needle. Death resulted from cerebral thrombosis, the result of advanced endarteritis. The aneurismal sac was approximately the size of a fetal head at term and was completely consolidated with organized coagula, in which the coils of wire lay. The sac itself was very firm and wholly solidified, and when cut into was found to be completely occupied by organized material in the interstices of which were found the coils of gold wire.

The writer has now treated two other successful cases in the same way; and these, in connection with a successful case under the care of Dr. Hershey of Colorado, show results which are sufficiently suggestive to engage the attention of the therapeutist.

CASE OF GASTRIC ULCER PERFORATING INTO THE PERICARDIUM.[2]

Fenwick reports a case of such rarity that a brief abstract is given:

The patient was a man, fifty-five years old, who had never complained ot any symptoms of gastric disease, and who was apparently in his usual health. Immediately after finishing a meal, which consisted of tea, fish, and bread and butter, he rose from the table complaining of pain and palpitation and died in about a minute.

The interesting point of the autopsy was that the pericardium was found to contain some particles of fish and several ounces of tea, which smelled of whiskey. On the lower surface of the pericardium a small aperture was discovered, admitting a stout probe which passed downward through the diaphragm into the abdominal cavity. The heart itself weighed thirteen ounces and was extensively infiltrated with fat. The anterior surface of the stomach was found to be firmly adherent to the under surface of the diaphragm. On opening the viscus a chronic ulcer, the size of a shilling, with indurated edges was seen to be situated about the centre of the lesser curvature. From the base of the ulcer a sinuous track led upwards and to the right through the substance of the pericardium. All the other organs were apparently healthy.

SURGICAL TREATMENT OF SUPPURATIVE PERICARDITIS.[3]

In a paper with this title, Roberts gives an epitome of 35 cases of purulent pericarditis treated by incision, the earliest of which is reported by Hilsmann, who operated in 1844 with success. He says that pericardotomy and provision for thorough drainage are always demanded by the presence of pus in the pericardial sac, the inutility of tapping, even if repeated, being shown by numerous recorded cases.

Puncture and aspiration may afford temporary relief, but free exit for the pus must be maintained for a varying length of time, until the internal surfaces of the cavity become modified or mutually adherent to insure cure. The prognosis under these circumstances is good provided the operation is done early and no serious complications have preceded or followed the surgical treatment, while the results obtained by incision and drainage in tubercular peritonitis suggest that the same treatment in tubercular pericarditis may lead to a permanent cure.

Of the 35 recorded cases 15 recovered and 20 died, a ratio of nearly 43 per cent., while, if those known to be septic are excluded, only 10 died.

Incision has the advantage over aspiration in reducing to a minimum the danger of wounding the heart, and the author is inclined to believe that incision is better than aspiration even in cases not supposed to be purulent.

He also recommends diagnostic incision in cases where it is impossible to distinguish between pericarditis with effusion and dilated heart.

He considers the best points for aspiration to be either close to the base of the ensiform cartilage in the fossa between it and the seventh left costal cartilage, or in the fifth left intercostal space from two to two and one-half inches to the left of the median line.

For the technique of the operation for free incision the reader is referred to the original paper.

HEMORRHAGIC PERICARDITIS.[4]

Ebstein reports two cases of hemorrhagic pericarditis, the first of which occurred in a man fifty-one years old, who had been ill two and a half months previously with a right-sided pneumonia. Four weeks before he had been taken with sudden pain in the middle of his chest. He failed gradually up to thirty-six hours before his death when he suddenly collapsed. Neither the symptoms nor signs of pericarditis were found and a diagnosis of dilatation of the heart with great muscular weakness was made.

At the autopsy the pericardium contained about 1,300 c. c. of bloody fluid, containing clots. The difficulty in diagnosis resulted in part from the fact that no etiological moment was discovered and that friction sounds were never present, while the absence of apex beat was readily accounted for by the cardiac weakness. Dulness in the cardio-hepatic angle, which has the greatest significance in the beginning of an accumulation of fluid in the pericardium, was unfortunately not sought for during the last two days, but had been previously absent.

Etiologically, Ebstein cannot rule out a connection with a previous pneumonia, while it is also probable that the fatty heart may have had some influence in its development. He considers it probable that the patient had suffered for some time from latent pericarditis and that the severe symptoms of sudden onset which terminated the disease were probably the result of a hemorrhage into the sac.

The second case was a man, fifty-nine years old, who had suffered for about nine months from thoracic symptoms. The signs showed retraction of the lung on the left side, with a pericardial effusion. Section showed a diffuse sarcoma of the left primary bronchus with metastatic nodules in various organs, of which the most interesting in this connection was the pericardium, which contained a hemorrhagic fluid. He says that in chronic, frequently recurring inflammation of the pericardium, as well as of other serous surfaces, the effusion is more apt to assume a hemorrhagic character than under other conditions, but individual peculiarities are not without influence, as hemorrhagic exudates are more common in old persons. Of special importance in the production of this characteristic is the nature of the illness in consequence of which pericarditis results, for apart from tuberculosis and malignant disease of the pericardium, it is more apt to accompany illnesses which are associated with a hemorrhagic diathesis, acquired as a result of a toxic or more frequently an infectious process. The latter is a much more potent factor than a congenital tendency to bleeding, as hemophilia apparently does not lead to the production of a bloody fluid in inflammation of any of the serous surfaces.

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[1] British Medical Journal, August 14, 1897.

[2] Lancet, August 14, 1897.

[3] American Journal Medical Sciences, December, 1897.

[4] Deut. Arch. f. klin. Med., Bd. lvi.

It seems probable that some special inflammatory irritation is needed, which is found less in the pathogenic organisms themselves than in their products. Those cases of traumatic pericarditis with bloody effusion, when foreign bodies have penetrated the pericardium, may be due to an infectious process or to bleeding into the pericardial sac. Chronic alcoholism appears also to have a special tendency toward the production of such hemorrhagic effusions, but in none of these cases does it follow that because a hemorrhagic pleurisy may be coincidently present that the fluid in the pericardium should be bloody, even when both rest on the same etiological basis.

Treatment by aspiration in these cases usually proves of little value, largely as a result of the underlying cause, while remedies directed toward the original disease are equally unsatisfactory. Prophylactic measures, he is inclined to think, may be useful in certain circumstances and in acute rheumatism, which is the most frequent cause of pericarditis, he believes, although unable to prove it mathematically or statistically; that the salicylates are of considerable value in warding off this complication and he is in the habit of giving them in small doses for long periods to patients who show a tendency to relapse.

NEUROPATHIC DYSPEPSIA AND ITS CORRELATIONS WITH DISTURBANCES OF THE RHYTHM OF THE HEART.[5]

Sansom, in a paper on this subject, which is too long for an abstract, reaches the following conclusions:

(1) Essential tachycardia is not accompanied by dyspepsia.

(2) Paroxysmal tachycardia and the forms of tachycardia accompanied by signs, even slight, of Basedow's disease are very frequently associated with crises of dyspepsia.

(3) Extreme cardiac arythmia often occurs without manifestations of dyspepsia.

(4) Gastro-intestinal irritations do not produce cardiac arythmia without the concurrence of predisposing causes.

(5) Cardiac arythmia often replaces tachycardia in Basedow's disease. In such cases paroxysmal dyspepsia is frequent.

(6) Well-marked bradycardia may exist without signs of dyspepsia.

(7) Paroxysmal bradycardia is associated with crises of dyspepsia, and these crises occur in some cases of persistent bradycardia.

(8) There is no defined relation between dyspepsia and the structural diseases of the heart which sometimes are manifested in cases of disturbed heart rhythm.

(9) It is most probable that all forms of disturbed rhythm of the heart are due to marked affections of the nerve-element at the origin or in the course of the vagi nerves, or the nerve mechanism of the cardiac reflex in the upper part of the spinal cord.

(10) The attendant dyspepsia is due to an extension of the disturbance to the areas of origin or course of the gastro-intestinal branches of the vagi nerves.

(11) All such alterations of the cardiac reflex nerve mechanism, as well as the various disturbances of digestion, may be due to the toxic agencies of influenza or allied forms of infectious disease.

BRADYDIASTOLE AS A PROGNOSTIC SYMPTOM IN AFFECTIONS OF THE HEART.[6]

Huchard calls attention to the peculiar rhythm of the heart which he calls bradydiastole, consisting of a considerable prolongation of the diastolic pause. The two first sounds are very near together, scarcely separated by the short silence, the duration of which is considerably diminished, while the long silence has gained in duration. Both sounds frequently present an abruptness which is very distinct in character, while the cardiac impulse has the appearance of strength.

It may be observed, though in slight degree, in comatose conditions, in grave cerebral hemorrhage, in uremia, etc., and is almost a normal occurrence in aortic insufficiency. It is not of great importance so long as the fibres of the myocardium are not very much altered, but when the cardiac muscle is invaded by sclerous tissue and can react only incompletely upon the mass of blood, it is allowed to dilate more and more, and under such conditions bradydiastole becomes a sign which is often premonitory of cardiectasis. Systole is performed abruptly and rapidly, and this abruptness becomes itself an indication of extreme weakness of the heart much more than the attenuation of the first sound, on which physicians have insisted too much, its prognostic importance being singularly exaggerated.

He has observed this peculiar rhythm at the approach of the death struggle and during its continuance, and is of the opinion that it is a premonitory symptom of approaching death in other affections as well as in heart troubles; but his observations are not yet sufficient in number to warrant him in making a positive and definite statement in this respect. He expressly affirms, however, that this symptom is of great gravity in digitalis poisoning and in the course of asystole. From many facts observed he deduces the following conclusions:

(1) When in the course of digitalis poisoning or in the last stage of asystole in heart affections the bradydiastolic rhythm is observed continuously for several hours, and especially for several days, it is the precursory symptom of a progressive and ultimate cardiac dilatation.

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[5] Lancet, August 28, 1897.

[6] Jour. des Pract., October 30; New York Medical Journal, November 20, 1897.

(2) In these conditions digitalis no longer realizes its anti-asystolic rôle; it becomes, for obvious reasons, inefficacious and even injurious, principally because it contributes to lengthen the diastolic pause still more.

He considers this symptom of the greatest importance by enabling the physician to foresee and sometimes prevent the progressive dilatation of the cardiac cavities. It shows that in these cases the heart really receives at each of its revolutions much more blood than it can throw out, and indicates that digitalis should be absolutely proscribed since it increases the length of diastole.

It shows, finally, that the two therapeutic indications consist in combating by early venesection the obstruction of blood in the ventricular cavities, and in exciting the myocardium, which is in danger of extreme weakness and of rapid dilatation, with large doses of strychnine and sparteine and by hypodermic injections of caffeine and camphorated oil.

SEROUS PLEURISY.[7]

Glaeser, in the course of a long and interesting article on this subject, gives a critical review of the various remedies which have been advocated for the treatment of pleurisy, and comes to the conclusion that, practically and theoretically, they are of doubtful value, both in the prevention of the accumulation of the exudate and in hastening its absorption.

He gives an analysis of 209 cases, of which 142 were discharged well, 19 relieved, 38 not relieved, while 10 died.

In 26 of the cases, in spite of high fever, the amount of urine was not diminished, and was even increased, while it was found that the absorption even of large amounts of fluid might occur with diuresis not above the normal or even below it, while in certain cases the fluid failed to be absorbed and even increased with a marked diuresis. In such cases the vascular system was probably so overfilled that a long period of diuresis was required to relieve it before the pleural fluid could be drawn upon.

Usually, the absorption of the fluid was closely connected with the fall in the temperature, but exceptions often occurred and not rarely absorption took place in spite of persistent fever. At other times, it began long after the fall of the fever, while in others in spite of a normal temperature, the exudate remained unaltered.

The first class has a distinct bearing on the question of puncture, which was performed in 39 of these cases, in 23 of which it was performed in the febrile period, while in four it had to be repeated. Of 14 cases without fever, so treated, repetition was required in two.

In practically all of his cases, puncture was done, if not because the patient was in immediate danger, at least for the relief of dyspnea.

He does not consider aspiration as indicated in serous cases. It is at least superfluous if not positively harmful, since it is the quantity of the effusion and not its quality which demands attention; as, if the pressure is negative, the presence of fluid is a matter of no great importance, since it can exercise no influence on neighboring organs, while if the pressure is positive, aspiration is unnecessary.

He uses a trocar, which is pushed through the blind end of a condom and fastened with thread, the walls of the condom, being wet, act as a valve in preventing the ingress of air and offer no obstacle to the flow of the fluid. He has treated five cases by permanent drainage, two of which died, but this was to be expected under any form of treatment. Two others recovered, one of which was apparently a hopeless case. The fifth died of empyema of the other side, which was unfortunately overlooked.

He does not now consider the prognosis in hemorrhagic pleurisy as bad as he once thought, as the presence of blood is often due to a simple process, analogous to a hemorrhagic pachymeningitis, or to a hemorrhagic diathesis, as well as to malignant processes. Of the nine cases in this series six were cured, although some of them had tubercle bacilli in the sputum.

THE DIAGNOSIS OF MALIGNANT DISEASE OF THE PLEURA FROM THE CHARACTER OF THE EXUDATE.

Warthin[8] says that, if we can judge from the literature on the subject, but few careful examinations have been reported of the cellular constituents of the exudate in cases where malignant tumors of the pleura and peritoneum were present, although much has been done with the chemistry of these fluids. He reports a case where the diagnosis of a spindle-cell sarcoma of the pleura was correctly made before death from the aspirated fluid. He says that from a histological study of the sediment of many cases of effusion into the peritoneal, pleural and pericardial cavities, the following points seem worthy of emphasis:

(1) In all cases of this kind where fluid can be obtained by exploratory puncture, cover-glass preparations should be made by fixing in alcohol and ether immediately after the withdrawal of the fluid from the body in order that the mitoses may be preserved.

(2) In the early stages of simple pleurisy the sediment contains endothelial cells and no fibroblasts. The endothelial cells may be desquamated in large pieces.

(3) In fibrinous pleurisy, tuberculous or septic, the sediment contains, in addition to endothelial cells, numerous fibroblastic forms. In later stages, when adhesions are forming, the endothelial cells may be entirely absent, and only fibroblasts be found.

(4) In the diagnosis of sarcoma of serous cavities, the character and number of the cells and the presence of numerous mitoses are the points upon which it must be based. It is, of course, evident that the quickly growing and soft forms of sarcomata are the ones most apt to lead to the presence of cells in the fluid. The tendency of all sarcomata to break down after reaching a certain growth makes it extremely likely that in most cases free cells will be found. The diagnosis of the spindle-celled sarcoma is easy, from the occurrence of large numbers of spindle cells of similar size and shape, showing fewer branching processes than fibroblasts, and containing more mitoses. In the round-cell forms, the tumor cells are to be distinguished from the endothelial cells by their size, character of nucleus, and the relation of the nucleus to the protoplasm. The presence of mitotic forms will again be the most important point; in the small round-cell sarcoma, these are not so easily seen. The greatest difficulty will be in the differentiation of the cells of a polymorphous-celled sarcoma from the fibroblastic forms found in fibrinous exudates. Aside from the general character of cell and nucleus, the presence of division forms

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[7] Therap. Monatsh., 1897.

[8] Medical News, October 16, 1897.

must in all cases be looked upon as the most important point.

In conclusion, therefore, the presence of numerous cell-division forms in the cells of the sediment of serous exudates may be taken as strong (perhaps conclusive) evidence that the effusion is due to the presence of a new growth, inasmuch as mitoses are but rarely found in the cells of purely inflammatory exudates.

THE SPUTUM IN CARCINOMA OF THE LUNGS.[9]

The classical symptoms of cancer of the lung consist in a unilateral consolidation of the lung leading either to dilatation or retraction of the thorax, in symptoms of irritation in the bronchi, as shown by cough and expectoration, in irritative phenomena in the pleuræ producing serous, fibrinous, hemorrhagic or purulent exudates, in pressure symptoms on neighboring organs, especially on nerves and veins, and finally in the progressive cachexia.

Such symptoms, however, do not develop during the earlier stages, and here, according to Hampeln, an examination of the sputum possesses much diagnostic value.

Bloody expectoration without being positively pathognomonic, since it occurs in such conditions as chronic tuberculosis, infarction of the lungs and croupous pneumonia, is a most important sign since other conditions are usually easily eliminated.

It consists most frequently of small amounts of blood which are expectorated from time to time, but these small transitory hemorrhages are so much the more suspicious as they occur but rarely in other conditions at the time of life when cancer is common. More rarely bloody expectoration, but not copious, is observed during a course of several months and even up to the time of death.

The bloody character of the expectoration, its tough consistency and its short duration, he considers as a very important diagnostic sign between cancer and other conditions, as he has noticed it in all but one of his own cases.

Microscopically the specimens of carcinomatous sputum which he examined contained, at certain times almost exclusively, pigment — free polygonal, polymorphous cells. In all other conditions the morphological elements of the sputum consisted, apart from a certain amount of pus and blood and flat epithelial and ciliated cells, solely of more or less markedly pigmented cells which were chiefly round or oval and only rarely polygonal in shape.

ETIOLOGY AND HISTOLOGY OF PNEUMONIA.[10]

Dürck has made a study, both bacteriological and histological, of the lungs of 41 children who had died of pneumonia, in order to determine whether the special form of inflammation was dependent on the presence of a particular organism. He found that in primary as well as the most diverse forms of secondary pneumonia many varieties of bacteria were always present, but that the diplococcus pneumoniæ was the most frequent, being present in 84 per cent. of his cases, but that special combinations of bacteria were without recognizable influence in the histological structure of a pneumonic exudate. He also found that histologically the separation of the lobular or pseudo-lobar form of pneumonia from the lobar is impracticable.

A similar examination of the lungs of patients who had died from some other disease than pneumonia showed the presence of the same mixed forms of bacteria and that here also the pneumoccus was the most common. As he also found that many forms of pathogenic bacteria (pneumobacillus Friedländer, staphylococcus pyogenes, streptococcus pyogenes, diplococcus pneumoniæ) were present in the lungs of freshly killed domestic animals, he therefore considers it safe to assume that the normal lungs of healthy individuals always contain mixed forms of bacteria, which differ at different times, but that their simple presence is not sufficient to induce a pneumonia, to the production of which some injury to the lung from outside influences is necessary.

As a result of some experiments on animals, he concludes that it is impossible to produce an artificial pneumonia in them by the intratracheal injection of pure cultures of any of these bacteria, unless simultaneously or within a short period irritating dust is also injected, but that insufflation of dust or the exposure of animals to chill without the injection of bacteria is sufficient to produce inflammation of the lungs having the character of a true lobar, fibrinous, mycotic pneumonia and due to an injury of the lung tissue which gives an opportunity for the development of the disease germs already here.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

(Report of Meeting of December 13, 1897. Concluded from No. 12, p. 281.)

Dr. E. O. Otis read a paper on

HOSPITALS AND SANATORIA FOR CONSUMPTION ABROAD,

illustrated by lantern slides.

Dr. F. I. Knight: It is so late that I will make only a few comments on Dr. Otis's paper, for which we certainly ought to feel very much indebted. The question of hospitals of course we need not say much about. The more hospitals for the segregation of consumptive patients there are in the world the more rapidly shall we be able to diminish the mortality from tuberculosis.

In regard to sanatoria a great deal ought to be said, because we in this country know very little about them, at least we seem to know very little about them. In balneology, the use of waters in the way of baths and other ways for the treatment of disease and in sanatoria for the treatment of tuberculosis, the Germans have been always far ahead of us. They began years and years ago to appreciate the fact that the treatment of tuberculosis was a serious and long affair and not only that, but one which repaid proper treatment when it was given. Why the Germans were first successful perhaps is due to the character of the German patient. Whatever "der Herr Professor" says, he will do, and if he tells him the first week of his cough that he is seriously affected and must take a year to get well, he believes him and will submit to whatever is required, and it is this discipline which accomplishes so much. The change in the spirit of the Germans when they appreciated the necessity of the situation is shown very well by two mottos, one under the old *régimé* in the hall of the Kurhaus at Davos was "Be merry and you will soon be well," and later when they saw it was serious business getting well, the motto in the hall of Brehmer's establishment at Görbersdorf read, "Patients come here not to be amused, but to be cured."

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[9] Zeitsch. f. klin. Med., 1897, Bd. xxxi.
[10] Deut. Arch. f. klin. Med., June, 1897.
[1] See page 313 of the Journal.

Tuberculosis requires this long treatment and watchfulness on account of the many complications which may arise at any time and it is only constant watchfulness which will perhaps guide the patient safely through them. Niemeyer used to say: "The great danger of a consumptive patient is that he will become tuberculous." Now we know the great danger of a tubercular patient is that he will become consumptive, become subject to the secondary infections, after which his chances for an arrest of the disease are very much diminished or taken away entirely.

Now what are the aspects of the disease which require such watchfulness that a man should go into a sanatorium instead of being treated at home? for it certainly is true that the average results of sanatorium treatment are better than the treatment of patients at large in the same climate. The regulation of exercise is everything, and it is almost impossible to regulate a man's exercise unless you know his condition from day to day, the febrile condition for instance, and I know many of my patients have set themselves back months and months by one day's imprudence in exercise. So in the matter of food and digestion the most important thing next to pure air, the patient needs constant watchfulness to see that he gets food he can assimilate and that nothing interferes with it. How often does a patient return after a long absence complaining of no appetite? You find his tongue coated and perhaps that he is taking cod-liver oil or creosote, on the advice of some friend, and that his digestion is perhaps ruined past repair. So in this question of fever, especially of secondary infections, it is most important to have the patient under the constant control of the physician. So in the minor things, like dressing, etc. In regard to fresh air, you can seldom keep a private patient living at home out in the fresh air eight to ten hours a day, as they do in a sanatorium. We are moving in the right direction, and the sanatorium at Saranac Lake and other smaller ones, like those at Sharon, Mass., and Aiken, S. C., are on the right lines. I am happy to say Massachusetts has taken a step in the right direction in establishing a public institution of this kind at Rutland. I think we are the first to do so. The hospital is now nearly completed. Two of the trustees of the institution are here and I have no doubt we shall hear from them on the subject. The pavilion plan, which has been adopted in the American sanatoria just alluded to, seems to me to be best adapted to the purpose.

Dr. V. Y. Bowditch: I am very much interested in Dr. Otis's paper. In 1889 I had the pleasure of visiting Görsbersdorf just before Brehmer died and that visit of twenty-four hours was an inspiration. It is really a grand thought, when one recalls how that man's work has grown since he first advanced the idea of sanatorium treatment of consumption forty years ago. His new idea met with the usual treatment. It was ridiculed by every one, but he lived to see his theories proved and his example followed steadily and surely. Especially in the last few years has the idea spread throughout not only Germany but the whole medical world as being the best method, on the whole, for treating consumption.

As Dr. Knight has said, the chief benefit of sanatorium treatment lies in the absolute control of the patient's daily life at a time when such control is a paramount necessity — in the incipient stage of the disease.

It goes almost without saying that if such treatment can be carried on in especially salubrious climates we can expect the best results, and yet what can be accomplished in less favorable regions is astonishing. No one who has passed a winter in North Germany can fail to recall the chilly, raw, sunless days which mark the chief portion of that season and at Dettweiler's Sanatorium at Falkenstein near Frankfort, among the mountains, some of the most satisfactory results have been accomplished.

Referring again to the importance of control of patients, I can speak from personal observation at the Sharon Sanitarium. Not infrequently it has occurred that a patient has transgressed the rules as to the amount of exercise to be taken each day and has come home after taking a much longer walk than was prescribed, exhausted. Almost in every case this has been followed by rise of temperature and malaise for several days. For the same reason, they are very rarely allowed to go to town during their stay except for the most urgent reasons, the excursions being followed usually by uncomfortable symptoms and consequent discouragement.

I have on previous occasions alluded to the not unnatural prejudice that, at first, exists in the minds of some against putting patients with consumption in the same institution, but practically in the experience of every one who has had knowledge of the matter, the depressing effect amounts to *nil* compared with the benefit to be gained. They may be homesick at first, but this feeling usually wears off quickly; they become accustomed to their surroundings and over and over again when depression occurs I have found it to be due to some outside cause and not because of the presence of other sick people.

Dr. Otis has spoken of the singular lack of coughing among the patients during meal-time at Falkenstein. I remember Dr. Dettweiler speaking of this very point. He talks with each patient and tells them they must endeavor to control the desire to cough, and if a paroxysm of coughing comes on it is a rule that they shall leave the table. He says "If you are in public and the skin itches you do not scratch. Coughing is a scratching of the throat!" It is remarkable how much can be accomplished by such advice, which is always kindly given.

As to the matter of contagion among the surrounding inhabitants of a locality from *properly regulated* sanatoria (I emphasize the adjective), it seems to me ridiculous to talk of it. It is against acknowledged facts. Statistics have shown that the number of deaths from phthisis has decreased in the villages of Falkenstein and Görbersdorf among the inhabitants since the establishment of the institutions there, doubtless due to the fact of the improved hygienic conditions, the result of the teachings of the two sanatoria.

Dr. Percy: It seems to me there is very little for us to say at this time. You realize fully the effort made in the legislature some two years ago which resulted in the appropriation of money for building a sanatorium for consumptives and tubercular patients. The problem was not an easy one to solve and the trustees felt that among the most important things was the choice of a location, and in order that there should be no mistake, no harsh or adverse criticisms, there was sent to every member of the medical profession in the State a request for his personal opinion as to the valuable places for that purpose. This was considered, and then still more the observation or the report of men whose opinions were considered of unquestioned value. A personal visit at a most unseasonable time of the year to Rutland left in the minds of the medical members of the board the feeling that if a certain tract of land there could be obtained, with an abundance of sunshine and fresh air, this institution should be erected at Rutland. It has been built and shortly will be open to the public inspection. It is not yet possible for us to say positively anything definite in regard to the plans for carrying on the hospital. The pavilion plan has been carried out, and I think I can say from personal visits to hospitals in this country and abroad, I never have seen an institution which seemingly is so well adapted to its uses. It is protected on the northeast, northwest and west from cold winds and lies basking in sun and the rooms are flooded with sunshine. Arrangements have been made for sun-rooms, and out-of-door life and rest-cure will be possible under most favorable conditions. In regard to the other matters which every one admits are of the utmost consequence it is in the minds of the trustees that there shall be no loop-hole. As to the advisability of such institutions it seems to me there is nothing to be said.

Dr. A. Worcester: It is very late and I shall not take advantage of your courtesy for more than a few minutes. It is a most tempting theme on which to speak and I cannot say how thankful I am to Dr. Otis for this evening's pleasure and profit and also for many of his previous attempts to interest the profession in the treatment of tuberculosis. I hoped he would include in his description of sanatoria for tuberculous patients the one which I think leads the world, — that at Berlin, in the old sheds hastily erected for Koch's use six years ago and used for consumptive patients ever since. My interest in the treatment of tuberculosis is entirely due to the fact that in those old sheds connected with the Charité in Berlin, patients are evidently being cured of tuberculosis. When the enthusiasm in that band of men working on steadily and splendidly is contrasted with the work at Brompton, where the resident physician himself, when I asked him if he believed in the curability of tuberculosis, laughed and said "No," and his pessimism was reflected in the disconsolate condition of the patients from one end of the hospital to the other — when I contrasted that with the hopeful, enthusiastic condition at Berlin I was convinced there was something at Berlin which has not yet been brought to bear in London. I cannot help thinking one of the problems we have to face which is soluble, one of the difficulties which is surmountable, is the application of proper nursing in the cure of consumptives. I am certain no physician, however devoted he is in his private practice, can bring to bear that personal observation and oversight which is necessary; we cannot do it except through nurses. We can train nurses to do it. And if physicians had more generally had their own nurses especially trained in the care of consumptives there would be more consumptives saved than are now saved. I think that is one of the ways in which the hospital at Rutland can help, for we hope to make arrangements with the training-schools for nurses throughout New England to take their student nurses for three to six months and train them in the care of consumptives, so that when they graduate from their different institutions they will be able to do better work than now. I hope we shall be able in this institution to impress the idea that Dr. Knight has so well put, — the difference between the consumptive and the tuberculous patient. If we can only get it into our heads that tuberculosis is not such a bad thing after all, that more get well of it than die of it, whether they have treatment or not, and if we can keep in mind, too, that the danger of tuberculosis is in making some little hole in the body into which some germ which is deadly can easily find its way, we can pull together a little more; and if the profession will help the Rutland Hospital by sending patients there who are tuberculous rather than patients who have been tuberculous and now have something else and are about to die, we shall, of course, be able to do a great deal more, and there will be other hospitals like it formed in this State and in other States. Whereas up till very recent times the profession might have been excused for not making the diagnosis of tuberculosis early enough so that there was a chance for doing some good, there is now no excuse. We have in tuberculosis with the aid of the microscope a diagnostic test of great value, and besides we have that extra means of diagnosis with tuberculin. If we can have that diagnosis made early and have the patients sent to Rutland at the beginning of their downward career who are merely tuberculous, that hospital can do a great deal for the patients and I believe a great deal for the State and country.

Dr. Otis: It is fair to state that the reason given by the Germans why they prefer a single large building to the pavilion system of small detached buildings is that they retain a better control of their patients and keep them more constantly under observation.

It is a question in my mind whether a State hospital for consumptives should be restricted to incipient cases. At least it seems to me quite as important and, indeed, a more pressing need, that provision should be made for the large class of advanced cases. A poor consumptive in the advanced stage of the disease is a most pathetic object. No hospital cares to take him. And the almshouse seems to be the only place where he can end his days. Moreover, it is just in this stage that he is the most dangerous to the community. It is to be devoutly desired that not only the State but the cities should make some adequate provision for this unfortunate class, either by setting apart certain wards in a general hospital, or, better, establishing especial institutions in or near the cities.

The Patient and the Bicycle. — Last week a curious Nemesis restored a bicycle to its owner, a medical man, at Portsmouth. The doctor, while making a call, left his machine resting against the curb outside. On his coming out the cycle had disappeared, but an hour or two later a man was brought to his surgery suffering severely from a fall from a bicycle, which turned out to be that of the doctor. — *Medical Press and Circular.*

Recent Literature.

Epidemic Diphtheria. A Research on the Origin and Spread of the Disease, from an International Standpoint. By Arthur Newsholme, M.D. Lond., M.R.C.P. Lond. London: Swan, Sonnenschein & Co. 1898.

This extremely valuable work by the Medical Officer of Health of Brighton, England, constitutes one of the most important additions to the study of diphtheria yet published. The author has endeavored by means of a careful analysis of the reports of all civilized countries to arrive at definite conclusions as to the determining conditions with reference to the spread of the disease.

Facts are presented from America (chiefly the United States), Great Britain, the continent of Europe, and from all places from which definite information could be obtained.

He agrees with Mr. Murphy, the Health Officer of London, that school attendance is a means of its spread.

In the large cities of America and of Europe, and especially in the former, there is a large mass of diphtheria constantly endemic.

The highest death-rate in England from this cause is not much more than half the lowest death-rate from the same cause in Massachusetts.

The relation of rainfall and the influence of soil are treated, but the author returns to the reasonable conclusion that personal infection is the chief means by which diphtheria is spread.

The work is illustrated with sixty carefully prepared diagrams which have the merit of comparability, being plotted upon a uniform scale.

Wounds in War: The Mechanism of their Production and their Treatment. By Surgeon-Colonel W. F. Stevenson (Army Medical Staff), A.B., M.B., M.D., M.Ch., Dublin University; Professor of Military Surgery, Army Medical School, Netley. Four hundred and nineteen pages and 86 illustrations. London, New York and Bombay: Longmans, Green & Co. 1897.

Dr. Stevenson has prepared a very interesting book. It is well and carefully written. The first two chapters discuss the manner in which wounds in war occur, the mechanics of projectiles and their effect on the human body. The main part of the book is devoted to the treatment of these injuries in general and in detail. The concluding chapters state the probable effects of the modern small calibre arms in the wars of the future and the origin, purposes and principal regulations of the Geneva Convention. The volume is well published, of convenient size and contains excellent illustrations. It contains much information relating to gunshot wounds which is of importance in civil as well as military surgery. There are few works in the English language which treat of the subject as it exists to-day. The present methods of warfare, modern weapons and the great difference between former and present medical science have revolutionized military surgery. The change is a recent one and has created a want in surgical literature which works like the author's excellently well supplies. Its perusal is recommended to those interested in traumatic surgery.

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PHYSIOLOGICAL CHEMISTRY AND ITS RELATION TO MEDICAL PRACTICE.

The advancement in medicine which has come as a direct result of the investigation of recent years in the field of physiological and pathological chemistry cannot be overestimated. The observations in this field, made in laboratory analyses, and in experiments upon man and beast, have given us a scientific basis for the understanding of the chemical changes which are associated with, or underlie the conditions of health, and many conditions of disease, in the human organism.

Many of the results obtained in these investigations have not only added to our store of medical knowledge, but have proven of direct value in the field of practical medicine. It rests with the physician to familiarize himself with these results and to study their application to practical work, that he may avail himself, as far as is possible, of a scientific basis for the diagnosis and treatment of his cases.

The most important investigations of physiological chemistry from the point of view of practical medicine are those upon the general body metabolism in conditions of health and disease. The practical application of the knowledge which has been gained as the result of the extended investigations in regard to the fate of the different food principles in the body, and their influence upon nutrition and growth, to the doctrine of diet in conditions of health and disease, has been thoroughly reviewed by Van Noorden.

As the result of this long series of investigations, we have had computed and recorded: (1) The total metabolism per weight of the individual in the various conditions of health, as rest, and work; also the metabolism of individuals afflicted with certain definite diseases, as diabetes, gout, myxedema, etc. (2) The part played in the metabolism by each of the three classes of food substances — proteid, carbohydrate and fat. (3) The capacity or value of the separate foods, as beef, wheat, eggs, milk, etc., for purposes of metabolism.

With these records at hand it is possible for the physician, with an understanding of the conditions of physiological chemistry which underlie a given pathological condition, to estimate the probable metabolism of his patient, calculate the proportions of the proteids, carbohydrate and fat necessary to meet this demand most efficiently, and prescribe a diet fulfilling these requirements of metabolic value and proportion, from the various food-stuffs at his command.

The calculation of the values of the different food-stuffs for purposes of metabolism has been much simplified by the introduction of the conception of calories into the doctrines of nutrition. To quote Van Noorden: "Formerly observers said, 'a healthy man needs so many grammes of proteid, so many grammes of carbohydrate, so many grammes of fat.' It was inconvenient to reckon with three magnitudes and to bring them into correct relation with the requisites of the individual organism. To-day we compute the values of food-stuffs according to the physiological (kinetic) energy liberated in their oxydation. This degree of energy is expressed in terms of heat and represents the value of the food when it is burned in the process of metabolism. The unit for the measurement of this heat energy of the food is the calorie. The calorie signifies the amount of heat which is necessary to raise one kilogramme of water 1° C. The calorie value of a food is determined from the amount of heat which is liberated when this particular food is transformed from its original composition when it entered the body, by oxidation, into those chemical combinations in which it leaves the organism."

Thus one gramme of proteid furnishes 4.1 calories, one gramme carbohydrate 4.1 calories, one gramme fat 9.3 calories.

Investigations on metabolism show that a healthy adult uses up material of 30 to 34 calories value per kilogramme weight of body when at rest, of 40 to 45 calories value when at moderate work, and of 45 to 60 calories value when at hard work. That is, a healthy man of average weight at moderate work requires a food-supply of about 3,000 calories value.

Further analysis shows that to preserve the equilibrium of the tissues a certain proportion of the food must be nitrogenous; the remaining value may be made up from carbohydrate and fat, either or both. A suitable diet for this man may then be made up by giving, say, proteid to 400 calories value, carbohydrate to 1,660 calories value, and fat to 940 calories value — a total of 3,000 calories. If the calculation of the calories per kilogramme weight be correct, and the supply maintained accordingly, the individual will maintain his weight; if the supply of calories in the food be greater, he will gain weight; if less, he will lose.

The application of these results to the practice of dietetic treatment in conditions of health and disease is, we think, evident. An example of this application may be seen in the practice of forced or extra feeding, so useful in conditions of malnutrition accompanying neurasthenia, overwork, chronic dyspepsia, and in acute febrile affections. In these conditions the patient, from lack of appetite, or from the association of malaise with the taking of food, or from poor advice, is taking a supply of food of a calories value insufficient to fulfil the needs of the body metabolism. He needs a food-supply of at least the normal calories value, and in many cases, owing to previous loss or to an abnormal oxidation of tissue consequent upon the disease present, a supply of supranormal calories value.

The questions which the physician must answer to himself in prescribing this treatment are:

(1) If more food be given than is required for the metabolism, will the patient assimilate it, or will it simply burn up in the body and pass off in the excretions?

(2) How much food is required for the creation of a reserve over the metabolism demands?

(3) What kind of food is best used?

In answer to the first question, investigation has proven that if more food than necessary for the metabolism is taken in by the organism, it will accumulate in the body principally as fat, not, as formerly supposed, be burned up in extra combustion.

The second question may be answered by a reference to our records of the investigations on metabolism in health and disease. Thirty to forty calories per kilogramme weight represents the daily need of the normal individual at rest. To insure the increase in weight which is indicated, the patient must therefore take a supply of greater calories value than the above, even where the metabolism is normal in amount. In diseases in which the metabolism is proportionately greater than in the normal condition, as for instance those associated with fever, an increased food-supply over normal is necessary merely to satisfy the needs of metabolism.

In regard to the third question, what kind of food is best given, it has been proven by investigation, that of all food assimilated over that necessary for metabolism, whether proteid, carbohydrate or fat, nine-tenths to nineteen-twentieths is transformed to body fat. These figures refer to the normal adult. In growing children and convalescents from disease, the proportion of proteid which is to be built up in the body is greater, and thus a larger proportion of the superfluous food goes to proteid structure. So that provided the necessary amount of nitrogenous food, enough to hold the equilibrium of the proteid tissue, be included in the supply, and provided the food can be digested and absorbed, it makes no difference what kind of food you give to increase the nutrition, if only you give a supply of a calories value above the needs of metabolism. The important factor is the sufficient quantity.

Van Noorden has pointed out the special importance of these facts in the treatment of febrile conditions. Investigation has shown that there is an increased nitrogen excretion associated with febrile conditions. The cause of this increase is twofold: first, the intoxication which causes destruction of protoplasmic tissue;

second, the inanition from lack of food. The first cause we cannot check by diet, the second we can. The proteid tissues are being used for combustion, because, owing to poor appetite or poor treatment, a sufficient supply of food is not taken to satisfy the needs for metabolism.

The indication is therefore to supply food sufficient to provide for the normal *plus* the extra combustion, that the nitrogenous tissues may be spared as much as possible from this process.

A second example of the application of these results in physiological and pathological chemistry to practical medicine is found in the treatment of diabetes mellitus. In this disease the metabolism has been proven to be at fault in respect to one class of food, the carbohydrate. The proteid and fat are transformed with their regular equivalent of energy, but the carbohydrate is excreted to a greater or less extent unused. To nourish the organism, therefore, a diet of a normal calories value, consisting of proteid and fat alone, must be given.

The investigations upon the chemistry of the functions of digestion have opened the way to a scientific method of diagnosis and treatment of the disorders of the digestive tract. Experimental research has revealed the character of the secretions which take part in the process of digestion, and the nature of the action of these secretions upon the ingested food.

In regard to the gastric functions we possess practical methods by which we can ascertain the character and quantity of the secretions and the vigor of the digestive function in a given individual. We have, then, in a given case to ascertain the condition of the secretions and of the digestive function by the application of our clinical methods, to determine the normality or abnormality of the condition found by a comparison with the results of investigation on the normal individual, and if abnormality exist to rectify it by treatment. If an abnormality in the amount of some particular constituent of the digestive secretion be determined, we may treat it either by adapting our diet to the existing condition of this secretion, or by supplying the constituent in artificial form, or by stimulating the natural secretion.

To aid us in these methods of treatment, we possess tables of the digestibility of the different food substances in the gastric juice, and in the acid constituent of this juice, based upon exhaustive investigations. If the analysis of the gastric contents show a diminution in digestive activity, the diet is made up of those articles which the reference tables record as easily digestible. If a diminution in the hydrochloric acid of the gastric secretion be present, that food is chosen which requires for digestion a less quantity of HCl, and in addition free hydrochloric acid given with the food. If an excess of acid be present, foods which combine with large amounts of HCl are given, and, if desired, alkalies given to neutralize the acid.

A most important result of these investigations of the chemistry of the gastric functions is the conclusion which has been attained that the vital factor of the gastric digestive function is the motility.

Experimental investigation and clinical experience both tend to prove that the nutritional disorder necessarily consequent upon an abnormality of the gastric function is, as a rule, in proportion to the extent to which this abnormality affects or is associated with a disorder of the motility of the stomach. Investigation has determined that whether the food reach the intestine digested or unchanged, that is, whether the function of gastric digestion be active or not, a sufficient quantity can be digested and assimilated to support the needs of the organism; also, that practically the total absorption of the food products takes place in the intestine.

Whether, therefore, the food be acted upon in the stomach or not, the absolutely essential point is that it shall reach the intestine and in proper time; and this function rests with the motor power of the stomach.

The knowledge of the chemistry of intestinal digestion in health and disease, though less intimate than of the gastric digestion, has been much advanced as a result of the investigations of recent years. It is now known that the digestion of fats is dependent upon the proper secretion of bile and of pancreatic juice. In the absence of bile, but one-fifth of the fats ingested in a normal diet are absorbed. If the pancreatic secretion be excluded from the intestine, one-third of the fat fails of absorption. The bearing of this knowledge upon the treatment of conditions in which these secretions are lacking in the intestine is clear. The neutral fats must be diminished in the diet. And, in addition, the failing biliary secretion may be to some extent supplied artificially.

In connection with this subject of the digestion of fat, recent investigations have tended to prove that a large proportion of the fat of the food may be absorbed in the form of fatty acids in solution in the bile acids. Following this indication, therefore, it is reasonable, where the pancreatic secretion with its fat-splitting ferment is absent, to obtain our fat radicle in the diet as fatty acids instead of as neutral fats.

Direct indications for the treatment of intestinal disorders have come from investigations of the intestinal digestion in patients with fistulæ of the lower ileum or cecum. These investigations show that in a diet of normal calories value, even where the proportion of fat or carbohydrate is high, these latter food elements are digested and absorbed in practically their total quantity before reaching the large intestine, while the absorption of proteids up to this point amounts to but 80 to 90 per cent. of the total absorption. These results suggest the use of a diet consisting largely of fats and carbohydrates in conditions of inflammation of the large intestine.

The results of the investigations on the internal glandular secretions have proved of much practical benefit in the case of the thyroid secretions. The influence of this secretion on conditions of health and disease, especially the diseases of myxedema, cretinism and parenchymatous goitre have been carefully studied, and the use of preparations of the secretion for therapeutic purposes firmly established.

The insight into the conditions of the organism which has come as a result of the investigation of the urine in conditions of health and disease is familiar to all. The routine examination of this excretion as an index of the conditions of metabolism, as well as of the condition of the renal function, is or should be the practice of every physician.

We have touched upon a few of many instances of the direct application of the results of the investigations in physiological chemistry to practical medicine. Of equal if not greater interest and value is the indirect application to medicine of the chemical investigations involved in the study of the biology of bacterial organisms and in the preparation of their nutrient media, which serve as the basis of bacteriological and antitoxin research.

In practice these results of scientific investigation should govern us in the formation of general rules of procedure. In the application of the rules to special cases we must bear in mind the possibility of individual idiosyncrasy. One man may attain, as far as we can determine, perfect health upon a food-supply which is totally insufficient for another individual of the same weight and habits. One patient may suffer from symptoms of hyperacidity of the gastric juice, with a secretion of acid such as causes no trouble in another.

The influence of the nervous system, the capacity of reserve force, and the power of vicarious function, upon which these variations in individual function depend, are forces which we cannot as yet determine in scientific data. The existence of this element of individual idiosyncracy does not, however, vitiate the value of the general scientific results.

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MEDICAL NOTES.

A BEQUEST TO THE PENNSYLVANIA HOSPITAL. — It is said that by the will of the late William J. Headlam, the hoardings of a lifetime of parsimony and self-denial, amounting to between $50,000 and $75,000 are to go to the Pennsylvania Hospital.

DR. MILLS PROFESSOR OF NEUROPATHOLOGY. — Dr. Charles K. Mills has resigned from the chair of diseases of the nervous system in the Philadelphia Polyclinic and has been elected to a new chair of neuropathology. Dr. Mills was one of the founders of the institution.

BOILED ANTITOXIN! — A physician wrote to a manufacturer of antitoxin, inquiring whether the syringe or the antitoxin was to be boiled before using. It need hardly be said that boiling, of course, destroys the albuminous material, and yet the manufacturer writes us that he has on hand something like thirteen dollars' worth of boiled antitoxin returned by physicians who gained wisdom by expensive experience. — *Philadelphia Medical Journal.*

BRITISH MEDICAL ASSOCIATION. — The sixty-seventh annual meeting of the British Medical Association will be held at Edinburgh, July 26, 27 and 28, 1898, under the presidency of Sir Thomas Grainger Stewart. The Address in Medicine will be delivered by Dr. Thomas R. Fraser; the Address in Surgery by Mr. Thomas Annandale; the Address in Psychological Medicine by Sir John Battey Tuke. The scientific business of the meeting will be conducted in sixteen sections.

WHERE CO-EDUCATION FAILED. — Last year the lady medicals eagerly availed themselves of Dr. Clouston's course of lectures on mental diseases at Edinburgh University. At one of these a lunatic patient in the clinic told a somewhat stout student that she "was like a clucking hen," to the no small amusement of the class. The lady did not appear again, nor will female students be allowed the privilege of attending Dr. Clouston's course this year, as the mental clinic has been found somewhat embarrassing with a mixed audience. — *Medical Press and Circular.*

THE CONSERVATIVE TREATMENT OF GUNSHOT INJURIES OF THE BRAIN. — At a Berlin medical society in February, von Bergmann showed two patients with bullets in the brain. In both the wounds were healed and the patients presented very few symptoms at the time of demonstration. At first, however, there had been in one case, hemiplegia, hemianesthesia, one side deafness and total blindness, which had all passed away, leaving finally a slight paralysis only of the left leg. The projectiles were photographed with the x-rays. Notwithstanding the urgent wishes of both patients to have the bullets extracted, v. Bergmann had refused to operate, as there was no indication for such interference.

THE RAVAGES OF PLAGUE. — During March the mortality from plague in Bombay reached the highest point yet known. During the week ending March 23d, there were 1,259 deaths from this cause in and around Bombay. On March 17th, 265 deaths occurred in the city. This mortality surpasses anything that has been published, and it would seem that there is but slight evidence of any real abatement. Five Europeans died during the week, and previous experience has shown that Europeans are most liable to suffer during a recrudescence. Meanwhile, according to the *British Medical Journal*, the vigilance of the medical authorities all over the infected districts is keenly on the alert, and everything that can be done in the way of dealing with the sick and healthy is being energetically carried out. Not one system of prevention only is being followed, but every expedient measure is being employed.

SKIN-GRAFTING EXTRAORDINARY. — A curious case was tried recently at Sydney, where a woman brought an action for damages against a doctor who had removed fifty-two square inches of skin to graft on a patient who had been severely burned. It must be admitted that this was a rather large draft on any one's abnegation, and the good lady seems to have regretted her generosity when it was too late. Unfortunately for her, the fact that she was a consenting party was held by the jury to exonerate the doctor, so she is minus both skin and damages. Possibly a claim would lie against the beneficiary, though even a committee of experts would find it difficult to appraise the value of skin per square inch. On any future occasion we would suggest that she should stipulate beforehand how much skin she was prepared to "shed." Seriously, however, the plaintiff appeared to have had just cause for complaint, and we are quite unable to approve the conduct of a surgeon who, even by consent, partially flays one person in the interest of another. — *Medical Press and Circular.*

NEW YORK.

PTOMAINE POISONING AND TUBERCULAR MENINGITIS. — Since the sudden death of Herr Anton Seidl there have been in the newspapers reports of a number of deaths which have been alleged to be due to the action of ptomaines. In no instance, however, has the statement thus far been substantiated by scientific investigation. In the case of a German child nine years old, on upper Third Avenue, who was supposed to have died of ptomaine poisoning from eating canned salmon, the autopsy, made by Dr. Donlin, coroner's physician, showed that the cause of death was in reality tubercular meningitis.

DEATH OF DR. GEORGE S. LITTLE. — Dr. George S. Little, a well-known practitioner of Brooklyn, died at his home in that borough on March 31st, of renal and cardiac disease. He served throughout the late war in the medical division of the army, first as assistant surgeon of the 19th Regiment New York Volunteers, afterwards as assistant surgeon of the 97th Regiment, and finally as surgeon of the latter regiment.

A BLOW AT "FACE SPECIALISTS." — According to the *Medical News*, a bill has been introduced in the New York Assembly to put a stop to the work of unprincipled persons who make a business of removing facial blemishes and making dimples. The bill provides that such work may not be done by any but practising physicians. A fine of $250 and imprisonment for six months will be the penalty for the first offence, a fine of $500, and a year's imprisonment for a subsequent conviction.

CROZER-GRIFFITH LECTURES AT BELLEVUE. — Prof. J. P. Crozer-Griffith, of the University of Pennsylvania, Department of Diseases of Children, lectured by invitation of the Faculty before the Bellevue Hospital Medical College on March 22d. The subject of the lecture was "Typhoid Fever in Infants and Children."

NEW HOSPITAL FOR NEW YORK. — The New York State Board of Charities has been requested to approve the incorporation of "The Storrs Memorial Hospital" of New York City. The hospital is intended as a memorial to the late Richard A. Storrs, Deputy Comptroller of the City of New York, and for nearly forty years connected with the comptroller's office.

ASTORIA HOSPITAL TO CLOSE. — The Astoria (L. I.) Hospital, which was established by the women of Astoria section of Long Island City, is to close its doors as soon as the patients now in the institution are well enough to be removed. Under the new charter the city authorities cannot send public patients to the institution, and it cannot be successfully conducted without the income derived from them.

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Miscellany.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

A CIRCULAR letter has been issued by F. W. Putnam, for twenty-five years the permanent Secretary of the Association, calling attention to the Fiftieth Anniversary of the Association, which is to be celebrated in Boston, August 22–27, 1898.

Early in the year 1897 the Boston Society of Natural History appointed a committee to take the initiative in extending an invitation to the Association to hold its Jubilee Meeting in Boston. Later, the Governor of Massachusetts and the Mayor of the City of Boston united with the various scientific and educational institutions of Boston and vicinity in a cordial invitation to the Association to hold its anniversary meeting in the city of its birth. This invitation was accepted at the Detroit Meeting.

The Boston Local Committee is now organized; everything will be done to make the meeting a successful one, both in its scientific and its social aspects. This anniversary gives promise of being the most important scientific gathering ever held in the United States, and the celebration of fifty years of science in America is an occasion worthy of the best efforts of the city.

Many foreign scientists will be invited to take part, and many foreign educational and scientific institutions will undoubtedly send delegates, thus giving to the meeting an international character.

During the Association week and the days immediately preceding a number of affiliated societies will meet in Boston, including the American Forestry Association, the American Geological Society, the American Chemical Society, the Society of Economic Entomologists, the Society for Promoting Engineering Education, the Society for the Promotion of Agricultural Science, the American Mathematical Society and several other important bodies.

The officers of the Massachusetts Institute of Technology and of the Boston Society of Natural History have generously placed their halls and rooms at the disposal of the Association; and thus accommodations will be furnished for all the Sections and for the General Sessions in the three closely adjoining buildings.

The Corporation of Harvard University has invited the Association to be its guest for a day in Cambridge; and the Essex Institute has arranged for a day in Salem. There will also be an excursion in the harbor, and after the meeting, trips to the White Mountains and to Cape Cod.

THE PASSING OF CHLOROFORM IN ENGLAND.

Dr. Frederic W. Hewitt, anesthetist to the London Hospital, states in a recent article in *The Lancet* that chloroform was administered in only 677 cases out of the 6,657 cases anesthetized at that institution during 1897. He further says: "Several years ago this anesthetic was in routine use; but experience has tended to somewhat shake our confidence in it for general employment."

When such a report is made, coming as it does from a large and important hospital, it seems very significant. A better example of medical conservatism cannot, perhaps, be found than in the use of the two great anesthetics. For a long time it has been very evident that ether is the generally safer anesthetic; but convenience, the fact that chloroform is pleasanter to administer and less disagreeable in its after-effects, and, above all, habit, seemed for years to blind the eyes of our English brethren to that most important consideration, the greater danger to human life. What though the danger be but slightly greater, is any man justified in risking his patient's life? The gradual change in favor of ether is coming, not alone in England, but on the continent of Europe. In several of the large German and French clinics ether is the usual anesthetic, and in spite of the shockingly large number of chloroform-fatalities annually reported in the *British Medical Journal* and in *The Lancet*, we believe that there is greater need of this change on the Continent; for what American who has visited the clinics of Europe has not been amazed and disgusted at the careless administration of chloroform in some of the most celebrated clinics? It should in justice be stated that there has been in certain parts of our own country almost as much prejudice against chloroform as has been shown in favor of it on the other side of the Atlantic. At present it is generally recognized, however, even in Boston, that although ether is the anesthetic to be chosen in the vast majority of cases, chloroform is very definitely indicated under certain conditions, and this, we believe, is the proper solution of the matter. — *Philadelphia Medical Journal.*

ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

As we have already noted, the preparations for the forty-ninth annual session of this Association to be held in Denver, Col., Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, 1898, are well under way and give promise of a most successful meeting. According to a circular letter recently issued by the officers of the Society, in future each delegate or permanent member when registering must also record the name of the Section, if any, which he will attend, and in which he will cast his vote for Section officers. An amendment to the constitution and by-laws of the Association will be presented favoring greater liberality in the matter of membership, and providing that "Any State or local medical society or other organized institution whose rules, regulations and code of ethics agree in principle with those of this Association, may be entitled to representation on the advice or agreement of the Judicial Council." The general addresses will be as follows: Presidential Address, George M. Sternberg, Washington, D. C.; Address in Surgery, J. B. Murphy, Chicago; Address in Medicine, J. H. Musser; Address in State Medicine, not yet determined. The officers of the various Sections are as follows:

Practice of Medicine. — S. A. Fisk, Denver, Col., Chairman; A. A. Jones, Buffalo, N. Y., Secretary.

Surgery and Anatomy — W. L. Rodman, Louisville, Ky., Chairman; Clayton Parkhill, Denver, Col., Secretary.

Obstetrics and Diseases of Women. — Joseph Price, Philadelphia, Pa., Chairman; C. Lester Hall, Kansas City, Mo., Secretary.

Ophthalmology. — Harold Gifford, Omaha, Neb., Chairman; Robert L. Randolph, Baltimore, Md., Secretary.

Laryngology and Otology. — B. Alexander Randall, Philadelphia, Pa., Chairman; S. E. Solly, Colorado Springs, Col., Secretary.

Diseases of Children. — J. P. Crozer-Griffith, Philadelphia, Pa., Chairman; Edwin Rosenthal, Philadelphia, Pa., Secretary.

Materia Medica, Pharmacy and Therapeutics. — John V. Shoemaker, Philadelphia, Pa., Chairman; C. C. Fite, New York, N. Y., Secretary.

Physiology and Dietetics. — Randall Hunt, Shreveport, La., Chairman; A. H. Tuttle, Cambridge, Mass., Secretary.

Neurology and Medical Jurisprudence. — Charles H. Hughes, St. Louis, Mo., Chairman; Hugh T. Patrick, Chicago, Ill., Secretary.

Cutaneous Medicine and Surgery. — A. W. Brayton, Indianapolis, Ind., Chairman; T. C. Gilchrist, Baltimore, Md., Secretary.

State Medicine. — I. N. Quimby, Jersey City, N. J., Chairman; Arthur R. Reynolds, Chicago, Ill., Secretary.

Stomatology. — G. V. I. Brown, Duluth, Minn., Chairman; Eugene S. Talbot, Chicago, Ill., Secretary.

Permanent Secretary. — Wm. B. Atkinson.

INSECT COOKERY.

A **subscriber**, says *The Caterer*, has sent us a little pamphlet which propounds on its cover — embellished with drawings of creeping things — the rather startling question "Why not Eat Insects." The author, Mr. Vincent M. Holt, has the courage of his opinions, and appears to have actually experimented gastronomically upon cockchafers, caterpillars, woodlice, slugs and such-like "dainties" (save the mark!). It is only fair to say he draws a sharp line of demarcation between vegetable-feeding insects and those of carnivorous instincts, such, for example, as the common fly, carrion beetle and churchyard beetle (*Blaps Mortisaga*). These latter are not considered eligible for culinary treatment, although as "foul feeders" they are considered by Mr. Holt to be not much lower in the scale of animal creation than the lobster and the pig. He writes: "*My* insects are all vegetable-feeders, clean, palatable, wholesome, and decidedly more particular in their feeding than ourselves. While I am confident they will never condescend to eat *us*, I am equally confident that, in finding out how good they are, we shall some day right gladly cook and eat *them*."

As a curiosity, we may reprint a couple of insect menus suggested by the author of this most curious and uncanny addition to the literature of the kitchen.

I.

FRENCH.	ENGLISH.
Potage aux Limaces à la Chinoise.	Slug Soup.
Morue Bouillie à l'Anglasse, Sauce aux Limaçons.	Boiled Cod, with Snail Sauce.
Larves de Guêpes frites au Rayon.	Wasp Grubs fried in the Comb.
Phalènes à l'Hottentot.	Moths Sautés in Butter.
Bœuf aux Chenilles.	Braised Beef, with Caterpillars.
Petites Carottes, Sauce Blanche aux Rougets.	New Carrots, with Wireworm Sauce.
Crême de Groseilles aux Némales.	Gooseberry Cream, with Sawflies.
Larves de Hanneton Grillées.	Devilled Chafer Grubs.
Cerfs-Volants à la Gru Gru.	Stag Beetle Larvæ on Toast.

II.

FRENCH.	ENGLISH.
Potages aux Limaçons à la Française.	Snail Soup.
Soles Frites, Sauce aux Cloportes.	Fried Soles, with Woodlouse Sauce.
Hannetons à la Sauterelle des Indes.	Curried Cockchafers.
Fricassée de Poulets aux Chrysalides.	Fricassée of Chicken, with Chrysalids.
Carré de Mouton, Sauce aux Rougets.	Boiled Neck of Mutton, with Wireworm Sauce.
Canetons aux Petits Pois.	Ducklings, with Green Peas.
Choufleurs garnies de Chenilles.	Cauliflowers Garnished with Caterpillars.
Phalènes au Parmesan.	Moths on Toast.

— *Food and Sanitation.*

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GASTROPTOSIS.

Kuttner and Dyer[1] call attention to the frequency of gastroptosis in comparison with ptosis of the other viscera. Morgagni, as early as the middle of the last century, called attention to it under the name of "sinking of the stomach." The anatomist Meckel, in 1815, quoted in later text-books of anatomy, noted that in female subjects the stomach not infrequently took a vertical direction. The changes in the position of the stomach have not even to-day been given the consideration by clinicians which is warranted by their practical importance, this fact being due to the circumstance that they are regarded as entirely indifferent conditions and therefore unworthy of notice. Their diagnosis also requires time-consuming and complex methods of examination.

Recent observers Glenard, Ewald, Kuttner, Meinert, Dujardin-Beaumetz and others have recognized gastroptosis as an important part of general enteroptosis. Recognizing the importance of an investigation of gastroptosis in its relation to enteroptosis, and with regard to its effect on the general system, Kuttner and Dyer have made a large number of examinations of the form and position of the stomach, in the polyclinic of the Augusta Hospital at Berlin, the results of which are embodied in this paper.

Gastroptosis was ascribed by Glenard chiefly to the dragging upon the stomach of the prolapsed colon in enteroptosis. Later writers, Meinert, Dickinson and others, have ascribed it chiefly to tight lacing. It may be due to overloading with food, or in rare cases to an abnormally low position of the diaphragm.

Kuttner and Dyer consider overloading with food the most important cause of gastroptosis, and also maintain that a congenital disposition to gastroptosis exists as a factor. This congenital disposition is present in individuals with weak, ill-balanced, nervous systems, and defective circulation and nutrition, such as are frequently the subjects of digestive neurasthenia. Stiller has found abnormal mobility of the tenth rib to be present in a large number of patients suffering from neurasthenia and enteroptosis, and considers this costa fluctuans an important physical sign of enteroptosis. Kuttner and Dyer were able to confirm this assertion of Stiller, after examination of a very large number of cases.

By the examination of 100 children, 100 women and 100 men, who came to be treated for various diseases at the polyclinic with regard to the position of the stomach, an attempt was made to determine the frequency of dislocation of the stomach at different ages, and its comparative frequency in the male and female. Of the 300 cases examined, 42 of the women and girls and only 4 of the men and boys showed pronounced gastroptosis, showing that the female sex furnishes by far the greater number of cases. With regard to age, gastroptosis was found most frequently between the fifteenth and fortieth years. Pregnancy and repeated child-bearing were found to be important only as contributory causes. Dyspeptic disorders which were to be referred entirely to the gastroptosis were observed 16 times. In 10 cases which also presented dyspeptic symptoms these were due to coincident disease of the stomach. In 20 cases no dyspeptic symptoms were present.

The fact that gastroptosis is in by far the larger number of cases a part of a general enteroptosis is shown by the fact that in 15 of the 42 cases double movable kidney, and in 15 movable right kidney, was coincident. The liver was found dislocated 10 times, and the spleen 4 times.

The symptoms which are chiefly the general group classed as dyspepsia may be attributed partly to disturbance in the motility of the organ, and partly to stretching of the ligamentous attachments and dragging upon the nerves. The writers' investigations lead them to the view that muscular atony may in some cases be the cause, as in others it is probably the consequence of the ptosis.

The frequency with which gastroptosis as well as enteroptosis may exist without being accompanied by symptoms is commented upon at great length.

A study of the blood in 19 cases who were subjects of gastroptosis and a corresponding number in which the position of the stomach was normal showed that no marked diminution in the amount of hemoglobin was present in these cases.

The remainder of the paper is occupied with a discussion of the diagnosis and treatment of the disease, to which nothing of especial note is contributed.

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RUPTURE OF AORTIC ANEURISM INTO THE BRONCHUS.

At a meeting of the Edinburgh Medico-Chirurgical Society, held on January 19th, Dr. Bruce showed a specimen of great interest and rarity — the rupture of an aortic aneurism into the bronchus. The aneurism occupied the transverse part of the aorta and the first part of the descending aorta. There was a small secondary sac also, which was directed toward and into the left bronchus, compressing it entirely. In the corresponding lung a condition of "aneurism phthisis" was set up. The lung was completely consolidated and contained many small caseous nodules. There was also complete pleural adhesion. The patient had been much exposed, and on admission presented the symptoms of acute pneumonia; his temperature was high; the lung was extremely dull below and presented the Skodaic note at the apex. So dull was the basal note that four aspirations were made with negative results. This consolidation extended up the lung toward the apex. The patient's temperature remained irregular, but he was thought to be improving; when coughing, he was seized with bleeding and almost immediately died. The diagnosis was rendered obscure by there being no displacement of the heart and no abnormal heart sounds. — *Lancet.*

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[1] Berliner klin. Woch., 1897, vol. xxxiv, pp. 420, 452 and 471.

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Correspondence.

THE AFTER-CARE OF THE INSANE.

"Woodbourne," Boston, Mass., April 2, 1898.

Mr. Editor: — Mr. F. B. Sanborn's letter in the Journal of March 24th, *apropos* of the report of the Committee on the After-Care of the Insane which had elicited our editorial, affords me a welcome opportunity of expressing the gratification of that committee at your advocacy of the measure. It gives fresh evidence of the interest in "after-care" which is being awakened in helpful quarters throughout the country.

In reply to Mr. Sanborn's intimation of defects in the historical portion of the report regarding the "after-care" movement, I may say that no attempt was made to give the history of its development. The Committee was instructed, as it states, simply "to investigate and report upon some feasible plan of practical 'after-care.'" Accordingly, the account of similar protective societies abroad was purposely made as brief as was possible without sacrificing any really necessary information as to precedents. Further, the origin of such societies in France is not, as Mr. Sanborn asserts, ascribed to Falret in the report. The words are: "'These considerations led in France to the founding by Falret in 1841 of an association," etc. A full history of the movement has been left to another and more suitable occasion, when I hope to avail myself of Mr. Sanborn's reminder of the work done in Germany. I am inclined to believe that for practical results Switzerland bears the palm.

In regard to Mr. Sanborn's criticism of oversight on our part in not pointing out that the boarding-out system in Scotland and elsewhere gives one of the best opportunities for "after-care," I may say that all mention of this system was purposely avoided in the report, lest in the minds of some this provision for chronic, harmless and presumably incurable insane, who, although boarded-out in families, remain under permanent supervision and control by the State, might be confounded with the real "after-care" project, which is intended to afford only temporary protection and relief — preferably through private associations — to the recovered and convalescent insane on their discharge from State institutions, and for whom public custody and control is no longer necessary or legal. In short, the boarding-out or family system, to which Mr. Sanborn refers, provides for the permanent care in private families of patients who are *still insane*, while "after-care" in its true sense is intended to provide only temporary relief and protection for those who have been discharged from public care and supervision *as recovered or convalescent.*

I myself have long and earnestly upheld the boarding-out or family system as an admirable accessory provision for our dependent insane, and know of no earlier public advocate of its adoption in Massachusetts. It is of great value to certain of the chronic insane as a means of comfort, self-support and, in occasional cases, as Mr. Sanborn says, of restoration to health, but should not be mistaken for "after-care," which benefits quite another but equally deserving class. Very truly yours,

Henry R. Stedman, M.D.

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A FIRST-CLASS FRAUD.

Boston, April 4, 1898.

Mr. Editor: — A man—short, thick, well-dressed, with stick in hand, about forty years old — has been "operating" Boston for several weeks, till two weeks ago, when, with wife and baggage, he left by the Providence Railroad. He presented his card as Dr. C. C. Perry, putting out his sign at 94 Compton Street, corner of Tremont, and stated that he had just returned from a visit to Europe. The janitor where he stopped says about forty people have come inquiring after him, some for money borrowed, others for goods furnished on instalments, etc. He is evidently a first-class fraud. Very truly yours,

E. Chenery, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, March 26, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diphtheria and croup.	Typhoid fever.	Measles.
New York . .	3,438,899	—	—	—	—	—	—	—
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	504	192	15.20	13.30	6.46	1.14	1.14
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	213	73	10.58	14.26	5.06	1.84	.46
Boston . . .	517,732	216	57	5.52	20.70	—	1.38	.92
Cincinnati . .	405,000	117	—	4.25	11.05	1.70	.85	—
Cleveland . .	350,000	114	—	2.64	2.64	.88	1.76	—
Pittsburg . .	285,000	99	43	6.06	24.24	—	1.01	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	32	12	15.65	15.65	3.13	—	—
Nashville . .	87,754	28	9	—	14.28	—	—	—
Fall River . .	95,919	28	13	10.71	25.00	—	—	—
Lowell . . .	87,193	27	5	—	18.50	—	—	—
Cambridge . .	86,812	25	13	8.00	16.00	—	4.00	—
Lynn	65,220	17	4	11.76	23.52	—	5.88	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	20	13	—	20.00	—	—	—
Lawrence . .	55,510	13	5	—	—	—	—	—
Springfield . .	54,790	20	5	10.00	5.00	—	—	—
Holyoke . . .	42,364	7	2	—	—	—	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	17	4	—	11.76	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	10	3	20.00	—	—	—	—
Chelsea . . .	32,716	14	4	—	7.14	—	—	—
Haverhill . .	31,406	8	2	—	25.00	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	9	4	11.11	11.11	—	11.11	—
Fitchburg . .	28,392	6	4	—	16.66	—	—	—
Taunton . . .	27,812	14	3	—	—	—	—	—
Quincy . . .	22,562	7	3	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	1	—	—	—	—	—
Everett . . .	21,575	6	1	16.66	—	—	16.66	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	4	0	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 1,579; under five years of age 503; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 151, acute lung diseases 260, consumption 197, diphtheria and croup 48, measles 31, typhoid fever 21, diarrheal diseases 16, cerebro-spinal meningitis 15, whooping-cough 10, scarlet fever 8, erysipelas 5.

From diarrheal diseases Philadelphia 6, Fall River 3, Boston and Providence 2 each, Pittsburg, Springfield and Melrose 1 each. From cerebro-spinal meningitis Baltimore, Boston and Worcester 3 each, Holyoke and Malden 2 each, Cleveland and Springfield 1 each. From whooping-cough Pittsburg 3, Baltimore and Boston 2 each, Philadelphia, Cincinnati and Cambridge

1 each. From scarlet fever Philadelphia 6, Baltimore and Cincinnati 1 each. From erysipelas Philadelphia 2, Baltimore, Worcester and Holyoke 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending March 19th, the death-rate was 21.8. Deaths reported 4,693; acute diseases of the respiratory organs (London) 430, measles 251, whooping-cough 124, diphtheria 60, diarrhea 59, fever 31, scarlet fever 29.

The death-rates ranged from 13.8 in Croydon to 30.9 in Oldham; Birmingham, 23.8, Bradford 23.4, Derby 23.9, Gateshead 15.6, Hull 25.0, Leeds 18.8, Liverpool 25.7, London 21.6, Manchester 24.6, Newcastle-on-Tyne 19.2, Nottingham 22.7, Portsmouth 15.6, Sheffield 22.8, Sunderland 20.7.

METEOROLOGICAL RECORD

For the week ending March 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

•	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S ..20	29.92	51	60	42	65	43	54	W.	W.	16	16	O.	F.	.07
M..21	30.21	42	47	38	53	75	64	W.	S.E.	6	5	O.	O.	
T ..22	30.22	41	49	33	88	96	92	E.	S.	6	14	O.	O.	
W..23	29.78	50	62	37	87	53	70	S.W.	N.W.	12	14	O.	O.	.08
T ..24	30.22	36	39	32	53	73	63	N.	S.E.	8	11	O.	C.	
F...25	30.50	39	43	35	75	72	74	S.	S.	3	8	C.	C.	
S...26	30.79	40	43	36	78	88	83	E.	E.	12	10	F.	C.	
☞														.15

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 26, 1898, TO ARPIL 1, 1898.

The leave of absence on surgeon's certificate of disability granted Major Charles K. Winne, surgeon, is further extended six months on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE TWO WEEKS ENDING MARCH 26, 1898.

L. G. Heneberger, surgeon, detached from the "Maine," and ordered home to wait orders.

S. H. Griffith, surgeon, detached from the Museum of Hygiene, Washington, and ordered to the "Mayflower."

APPOINTMENT.

Dr. Rockwell A. Coffin has been appointed assistant to the physicians for diseases of the nose and throat at the Boston City Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Roentgen Ray Skiagraphy. By DeForest Willard, M.D., Philadelphia, Pa. Reprint. 1897.

Solution of the Proprietary-Medicine Question. By C. C. Fite, M.D., New York City. Reprint. 1898.

The Suture-Clamp Operation for Hemorrhoids. By Llewellyn Eliot, M.D., Washington, D. C. Reprint. 1897.

Some of the Therapeutic Properties of the Thyreoid Gland. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1898.

Equilibration and Its Relation to Vertigo. By Frank K. Hallock, A.M., M.D., Cromwell, Conn. Reprint. 1898.

Diagnosis in Abdominal Disorders. The Question of Pelvic Support. By Joseph Eastman, M.D., LL.D., Indianapolis, Ind. Reprints. 1898.

Amblyopia from Suppression, Congenital Imperfection or Disuse; Which or All? By Leartus Connor, A.M., M.D., Detroit, Mich. Reprint. 1898.

Tumor of the Spine; Compression-Myelitis; Operation; Death on the Ninth Day. By J. T. Eskridge, M.D., and Edmund J. A. Rogers, M.D., Denver, Col. Reprint. 1898.

The International Medical Annual and Practitioner's Index; A Work of Reference for Medical Practitioners. Contributions by thirty-five English and American authors. Sixteenth year. New York: E. B. Treat & Co. 1898.

Memorial of R. B. Leach, M.D., of Minneapolis, Minn., Praying that a Test be made of the Arsenization Method of Treating the Disease of Cholera. Referred to the Committee on Public Health and National Quarantine of the U. S. Senate, February 2, 1898, and ordered to be printed.

A Compendium of Insanity. By John B. Chapin, M.D., LL.D., Physician-in-Chief, Pennsylvania Hospital for the Insane; late Physician-Superintendent of Willard State Hospital, New York; Honorary Member of the Medico-Psychological Society of Great Britain and of the Society of Mental Medicine, Belgium, etc. Illustrated. Philadelphia: W. B. Saunders. 1898.

Some of the Inefficiencies of the Methods Ordinarily Employed by Railway Surgeons for the Detection of Subnormal Color-Perception (Color-Blindness). Clinical History of a Series of Operative Procedures for the Cure of Cicatricial Ectropium from Antral Disease. A Perfected Series of Test-Type. By Charles A. Oliver, A.M., M.D., Philadelphia. Reprints. 1896–97.

Researches on Tuberculosis, the Weber-Parkes Prize Essay, 1897. By Arthur Ransome, M.D., M.A. (Cantab.), F.R.S., Honorary Fellow of Gonville and Caius College, Cambridge; Consulting Physician to the Manchester Hospital for Consumption and Diseases of the Chest and Throat; Late Examiner in Sanitary Science at Cambridge and Victoria Universities. London: Smith, Elder & Co. 1898.

Atlas of Methods of Clinical Investigation, with an Epitome of Clinical Diagnosis and of Special Pathology and Treatment of Internal Diseases By Dr Christfried Jakob, formerly First Assistant in the Medical Clinic at Erlangen. Authorized translation from the German. Edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital, etc. With 182 colored illustrations upon 68 plates and 64 illustrations in the text. Philadelphia: W. B. Saunders. 1898.

Introduction to Chemical Methods of Clinical Diagnosis. By Dr. H. Tappeiner, Professor of Pharmacology and Principal of the Pharmacological Institute of the University of Munich. Translated from the sixth German edition, with an appendix on Micro-Biological Methods of Diagnosis. By Edmond J. McWerny, M.A., M.D., Royal University of Ireland, L.R.C.P.I., Professor of Pathology and Bacteriology, C. U. Medical School; Pathologist to the Mater Misericordiæ Hospital, Dublin. London, New York and Bombay: Longmans, Green & Co. 1898.

Mammalian Anatomy; A Preparation for Human and Comparative Anatomy. By Horace Jayne, M.D., Ph.D., Director of the Wistar Institute of Anatomy and Biology; Professor of Zoölogy in the University of Pennsylvania; Fellow of the College of Physicians of Philadelphia, of the American Association for the Advancement of Science, etc. Part I. The Skeleton of the Cat; Its Muscular Attachments, Growth and Variations compared with the Skeleton of Man. With over 500 original illustrations and many tables. Philadelphia: J. B. Lippincott Co. 1898.

The Surgical Complications and Sequels of Typhoid Fever. By William W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; Vice-President of the College of Physicians of Philadelphia, etc. Based upon tables of 1,700 cases compiled by the author and by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania; Visiting Physician to the Methodist Episcopal Hospital, Philadelphia. With a chapter on the Ocular Complications of Typhoid Fever. By George E. de Schweinitz, A.M., M.D., Professor of Ophthalmology, Jefferson Medical College; Professor of Diseases of the Eye, Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia and Orthopedic Hospitals, and as an appendix, The Tower Lecture No. V. Philadelphia: W. B. Saunders. 1898.

International Clinics, a Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynecology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and specially prepared articles on Treatment. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M.D. (Univ. of Penna.), Philadelphia, Instructor in Clinical Medicine and Lecturer on Physical Diagnosis in the University of Pennsylvania, etc.; J. Mitchell Bruce, M.D., F.R.C.P., London, Eng., Physician to and Lecturer on the Principles and Practice of Medicine in Charing Cross Hospital; David W. Finlay, M D, F.R.C.P., Aberdeen, Scotland, Professor of Practice in Medicine in the University of Aberdeen, etc. Volume IV, Seventh series. Philadelphia: J. B. Lippincott Co. 1898.

Original Articles.

THE CLINICAL COURSE OF PNEUMONIAS IN WHICH THERE IS AN INFECTION WITH STREPTOCOCCI.[1]

BY FRANCIS P. DENNY, M.D., BROOKLINE, MASS.

Pneumonias caused by the streptococcus are diagnosed in Germany, but I am not aware that they are recognized clinically in this country. As there is practically nothing written in English in regard to these cases, I have thought that it might be well to bring the subject briefly to your attention.

It is well known that other forms of bacteria than the pneumococcus of Fraenkel and Weichselbaum are found in the sputum and lungs of individuals with pneumonia. Chief among these may be mentioned, Friedländer's bacillus, Pfeiffer's influenza bacillus, the Klebs-Löffler and typhoid bacillus, the staphylococcus pyogenes and the streptococcus.

It is also well known by every practitioner that a comparatively large number of cases of pneumonia do not run a typical course. In Osler's "Practice of Medicine" we find a division of the chapter on pneumonia with the heading *Clinical Varieties.* Here he speaks of an "Adynamic Form," and of a "Typhoid Pneumonia" where there is an irregular temperature and a course resembling typhoid, although there is no process in the intestines. He also mentions the "Creeping" or "Migratory" form, where the process seems to wander from one lobe to another. There is the "Apex Pneumonia," which he says is associated with adynamic features and *runs a very long course.* Probably the most common abnormality is "delayed resolution," which, to quote this author's words, "may be postponed till the fourth, eighth or even the tenth week," and "causes much anxiety to the physician."

Several years ago the opinion was expressed that many of these variations in the clinical symptoms and course of pneumonia would be found to depend on an infection with some other organisms than the pneumococcus. That this was not sooner shown to be true probably lies in the fact that the most reliable bacteriological investigations have been made on autopsy cases. Here the death of the patient has prevented an observation of the typical course of the disease in those cases where there has been an infection with some of the other bacteria. I only propose to report a few of the observations which have been made in regard to those cases where there has been an infection with streptococci.

In regard to the frequency with which streptococci are found at autopsy in pneumonia we find 129 cases reported by Weichselbaum[1] in which streptococci were present in 21, all of these, with two exceptions, being of the lobular form. Pearce,[2] at the Boston City Hospital, reported streptococci eight times in a series of 121 autopsies of lobar pneumonia; while in broncho-pneumonias — mostly secondary to the acute infectious diseases of children — streptococci were present in about one-half of the cases. These autopsy reports as well as the clinical observations of Neusser and Wasserman[8] would go to show that the streptococcus pneumonias are more frequently of the lobular type, although Weismayr[4] believed all of his five cases were of the lobar form.

Finkler[5] was one of the first to make observations on the clinical course of pneumonias with a streptococcus infection. He has reported several series of cases during the past ten years. He described forms where the clinical picture was that of typhoid fever. At another time he reported cases which seemed to occur in epidemics, having an acute and very fatal course. Harbitz[6] also has reported a similar epidemic form.

That we thus find the streptococci causing several types of pneumonia is not surprising, when we consider the variety of lesions produced by the streptococci in other organs of the body, especially in the skin and subcutaneous tissues, where at one time it causes an erysipelas, at another a deep phlegmonous inflammation, while again, from an apparently similar wound infection, the streptococci enter the circulation and quickly cause a fatal septicemia. Recent investigations, notably those of Petruschky,[7] go to show that, in the majority of cases at least, these variations in the lesions produced by the streptococci depend on varying degrees of virulence of the organism, and, to a less extent, on varying powers of resistance in the tissues.

The description of streptococcus pneumonias by recent observers corresponds closely with those cases of Finkler which ran a course resembling typhoid. It is to this form that I wish especially to call your attention. Among the recent contributions are those of Wasserman[8] and Weismayr.[4] Neusser, also, in his clinical lectures in Vienna last spring showed two of these cases. The clinical picture according to these three men is somewhat as follows:

The onset may be like that of an ordinary pneumonia; often it is less brusque. Malaise, feverish and chilly sensations, pain in the side and cough are usually found. The sputum is more purulent and is less often described as "rusty." Besides the streptococci, pneumococci also are often found in the sputum. The appearance of the patient is characteristic. There is less flushing of the face and the patient has a peculiar septic look. The appearance of two cases which I saw in Vienna was strongly suggestive of a uterine sepsis. The temperature is irregular. There is no crisis, but the temperature comes down by lysis often after a course of three or four weeks. The physical signs in the lungs are usually late in appearing. The upper lobes are more frequently involved than in ordinary pneumonia. There is a tendency for the local process to wander; so marked is this that it has been spoken of as an "erysipelas of the lungs." The most characteristic feature of all is the long duration of the physical signs. Dulness, bronchial breathing, and moist râles may sometimes be heard six or seven weeks after the onset of the disease. As the cough is apt to be troublesome until the resolution is complete the convalescence is fatiguing as well as long. There may be great prostration. Wasserman says it is often months before the patient has recovered from the effects of the severe sepsis.

A series of 39 cases of croupous pneumonia reported by Weismayr[4] illustrate very well the chief points in the above description. In 34 of these pneumococci alone were found; in five there were streptococci, twice together with the pneumococci, and three times alone.

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[1] Read at a meeting of the Norfolk District Medical Society, February 22, 1898.

Of the 34 pneumococcus cases, 27 ended by crisis, four by lysis and three were fatal. Crisis was never later than the ninth day, and with lysis the temperature was normal at latest on the eleventh day. In the fatal cases death occurred on the seventh, tenth and twelfth days. Resolution always took place promptly, never later than the twelfth day excepting in one case when it was on the fifteenth.

In marked contrast to these are the five streptococcus cases. Of these one died on the nineteenth day (this was complicated with diabetes). The other four had an irregular remittent fever lasting in one case until the thirty-seventh day; the signs of consolidation remained until the nineteenth, twenty-second, twenty-fifth and fortieth days. Thus, while the pneumococcus pneumonias had all with one exception run their course by the twelfth day, in these five streptococcus cases the symptoms had not in a single instance disappeared before the nineteenth and were present in others even up to the fortieth day.

The long persistence of the physical signs is the striking feature in these five cases. There is no evidence to show that this delayed resolution depends on a greater firmness of the infiltration as has been suggested by Leyden,[8] nor had these cases anything in common such as age, sex or physical condition. The only feature in common is the presence of the streptococci. Pneumococci may also be found, and according to some authors the original infection may always be with the pneumococci, but it is the streptococci which modify the course of the disease and give it its characteristic features. Pneumococci are very short-lived, whether growing on media outside the body or in animals after experimental inoculation. Also in the pleural exudation of man they live only a short time. In those cases of empyema where pneumococci alone are found absorption of the exudation will often take place. We have reason to believe that the conditions in the lung are similar, and where there is an active process going on there for a period of more than two weeks we can feel fairly certain that we have to do with some other organism than the pneumococcus — probably it is the streptococcus.

The *diagnosis* of a streptococcus pneumonia must be based on the sputum examination. Given a case which has an irregular course or which presents any of the abnormal features which we have mentioned, one should examine the sputum in order to determine whether streptococci are present. Typhoid fever, the influenza and pulmonary tuberculosis must be excluded. Phthisis is strongly suggested by the remittent fever, the involvement of the upper lobe, and the long persistence of the signs of consolidation, and can often only be ruled out after repeated examinations for tubercle bacilli. In one of Wasserman's cases where there was no sputum to be obtained, a differential diagnosis could only be made with the aid of Koch's tuberculin.

It is in relation to *prognosis* that the recognition of this form of pneumonia has its greatest interest for us at present. For enough evidence has been given to show that where we find streptococci in pneumonic sputum we have strong reason to expect a long and severe course. The family and friends always want to know when the crisis will come; and to be able to say in a case that there will be no crisis, but that the course will be a long and severe one, would certainly be of practical value to the physician. As regards life, the prognosis seems to be somewhat better than in the ordinary pneumonia. I refer now to those cases of the type which I have been describing, but it must be remembered that streptococcus pneumonias probably also occur in a very fatal epidemic form.

Inasmuch as at present the only *treatment* which we have for pneumonia is an expectant and symptomatic one, the treatment of this particular form will not differ essentially. What naturally suggests itself is the use of an antistreptococcus serum. I have not, however, been able to find any reference to its use for such purposes. In the future when we have an effective serum-therapy in pneumonia — an antipneumococcus and an antistreptococcus serum — the early differentiation of these two forms will be of the greatest importance.

Let me now briefly summarize. German observers have found that when in pneumonia there is an infection with streptococci the disease does not follow the typical course. The chief characteristics are the tendency of the local process to wander, the involvement of the upper lobe, the long and irregular type of the fever and the much delayed resolution. These symptoms are the same as those which we have seen stated by Osler to be the common clinical variations in pneumonia. The question therefore suggests itself, *Are not many of our atypical pneumonias to be explained by an infection with streptococci?* There is much which seems to point to an affirmative answer to this question, but further investigation is necessary.

REFERENCES.

1. Weichselbaum. Wiener med. Jahrbücher, 1886.
2. Pearce. Boston Medical and Surgical Journal, vol. cxxxvii, p. 561.
3. Wasserman. "Ueber Diff. Diagnostik von Lungenentzundungen." Deutsch. med. Woch., 1893.
4. Weismayr. Zeitschrift f. klin. Med., vol. xxxii.
5. Finkler. "Die Verschiedenen Formen der Croupösen Pneumonien." Congress f. Inn. Med., 1888.
   "Ueber Streptococcen Pneumonie." Congress f. inn. Med., 1889.
   "Infectionen der Lunge durch streptococcen und influenza Bacillen," Bonn, 1895.
6. Harbitz. "Atypische Croupöse Pneumonie." Centralblatt f. Bacterologie, 1895, p. 593.
7. Petruschky. Zeitschrift f. Hyg., xvii, 59; xviii, 413; xxiii, 142.
8. Leyden. Berlin klin. Woch., 1879.

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THE EXPERIMENTAL PRODUCTION OF FAT NECROSIS.

BY HERBERT U. WILLIAMS, M.D.,
From the Pathological Laboratory of the University of Buffalo.

In a paper by the writer, published in the *Boston Medical and Surgical Journal* for April 15, 1897, an account was given of certain experiments which sought to discover the cause of the fat necrosis so often seen associated with acute disease of the pancreas. Briefly, the results were as follows: a ligature was placed about the pancreas, with a view to preventing the outflow of pancreatic juice through the duct, but permitting it to escape into the structures about it, and to allow the fat-splitting ferment to act upon the peritoneal adipose tissues. In a part of the cases some of the veins leaving the pancreas were ligated as well, and a solution of continuity in its substance was effected. Among twenty animals, mostly cats, twelve negative and three doubtful results were obtained, while in five cases fat necrosis of a marked type ensued. Inasmuch as an accidental infection with micrococci also occurred in three of the five successful cases, it was not considered warrantable to attribute the fat necrosis exclusively to the action of the fat-splitting ferment of the pancreas.

In order to ascertain whether or not the result was sensibly affected by the action of bacteria, operations of the same sort have since been made upon three other cats, with the addition that in two of them the surface of the pancreas was smeared with a quantity of a fresh culture on agar of the staphylococcus pyogenes aureus, and in the third of the streptococcus pyogenes. In all three animals fat necrosis and pancreatitis ensued. In one case the fat necrosis was trifling in amount; in the other two it was present to a marked degree, although the post-mortem was performed upon one animal only twenty-four hours after the operation. These experiments yielded, therefore, a larger percentage of positive results than those in which bacteria were not added. However, their number was too small to allow far-reaching conclusions to be made, nor did continued research along these lines seem likely to settle the point in doubt.

In the article already mentioned an account was given of an experiment in which a large piece of pancreas was introduced into the abdominal cavity, resulting in accidental infection, and showing the great difficulties lying in the way of securing conditions of sterility by that plan of procedure.

It was next attempted, therefore, to introduce portions of fresh pancreas into the subcutaneous adipose tissues of cats. Numerous efforts to demonstrate bacteria in the freshly excised, healthy cat's pancreas placed on agar in the incubator found it sterile in every instance. Owing to the instability of the fat-splitting ferment, and the dangers of contamination, it was considered best to employ the substance of the pancreas itself, rather than an extract. Using every precaution to ensure sterility, pieces of cat's pancreas two to four millimetres in diameter were placed directly in the subcutaneous adipose tissues through small incisions in the skin. Bits of sterile black silk were introduced with the pancreas to mark the spot. The incisions were closed with sutures and collodion. The inguinal regions and a point a little below the sternum were the situations selected. This plan was employed in seven places upon four cats. Suppuration always occurred in from four to five days, and the results, as far as fat necrosis was concerned, were negative or indecisive, though it appeared to have occurred in some instances. Cultures were not made from the abscesses, but it was evident that they proceeded from infection. It was impossible to determine how far the alterations in the tissues were to be attributed to bacteria and how far to the working of the pancreatic ferments. In order to observe the effect of perfectly sterile pancreas upon the adipose tissues, the following technique was devised: A canula made of glass tubing was sterilized in a Petri dish, and a piece of freshly excised cat's pancreas one to two millimetres in diameter was placed in the large end of the canula with a bit of sterile black silk. It was forced along to the small end with a stiff platinum wire. The skin of the cat to be operated upon, which was also anesthetized, having been shaved, cleaned and rendered aseptic as far as possible, a small incision was made through it. The adipose tissues underlying it were nicked with a knife. The small end of the canula was then forced into the adipose tissue three or four centimetres. The pancreas and bit of silk were pushed out of the canula by the wire, depositing them in the desired locality, when the canula was withdrawn. The surface was closed with one or two sutures, and covered with collodion.

The success of this plan was very gratifying. In seventeen experiments made according to it upon nine animals, eleven were successful in avoiding infection, two were doubtful in that respect, while infection occurred with certainty but four times. The piece of black silk served admirably to identify the point of introduction. In each of the experiments the result was tested for by an inoculation made on agar from this point. Alterations in the fat cells similar to those seen in fat necrosis, and described in the article above mentioned, were detected in the region where the pancreas was introduced in six of the eleven cases where infection was avoided, as well as in the two that were regarded as doubtful. The same alterations were observed in some of those where suppuration took place, but it seemed best to discard these results entirely. It appears probable, therefore, that some substance contained in the tissues of the pancreas, doubtless the fat-splitting ferment, is capable of producing changes in fat cells similar to those seen in fat necrosis.

It is the writer's intention to publish hereafter a detailed account of these experiments, and a more minute description of the changes produced in the adipose tissues.

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Clinical Department.

REPORT OF FOUR CASES OF HYSTERECTOMY FOR FIBROIDS.[1]

BY SARAH E. PALMER, M.D.,

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Fibroid tumors of the uterus are composed of increased growth of the fibrous and muscular structure of the organ. The tumor, then, consists of a variable quantity of fibrous and muscular tissues derived from the parenchyma of the uterus.

The tumor may become cystic. It may degenerate and become calcareous, as in the case reported by Dr. M. L. Harris, calcified uterine fibroid removed from woman of seventy years, in whom it had been known to exist forty years. The weight of opinion is that fibroids do not become malignant, although malignant growths may be associated.

They may be of any size and the symptoms caused by the neoplasm is not dependent upon the size, but rather on the position. All growths are probably at first interstitial, and then pushed in one direction or the other. The course is usually quiet, but progressive, though rarely rapid and fatal.

The cause of danger then is found in the relation to the other structures rather than in the nature of the growth itself. Hemorrhage, so often and commonly the most serious symptom, is caused by the increased growth of the uterine mucosa, due to the presence of the fibroid. It is always to be remembered that the initial hemorrhage may be nearly fatal, as in the case shown to-night.

Pressure on the ureters and a general disturbance of abdominal circulation may cause nephritis, and correspondingly increased vascular pressure result in heart lesion. Hofmeier, in 1884, collected 18 cases of sudden death from heart failure, due to fibroids. Pressure on neighboring organs often causes functional disturbance. For instance, on the bladder, causing disturbance of urination; on the rectum, constipation, often obstinate.

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[1] Read before the Suffolk District Medical Society, December 22, 1897.

Pregnancy may exist in a fibroid uterus and present a variable course. Premature delivery is sometimes caused by irritation, or the tumor may be lifted out of the pelvis and give very little discomfort. There may or may not be mechanical interference of labor. Tumor may disappear after delivery, as in four cases reported by Dr. Balerei in 1896. Or the growth may be stimulated, or it may slough from pressure and cause death from septic absorption, as in a series of cases recently reported with death from septicemia after labor, from sloughing fibroids.

At the menopause the neoplasm often undergoes atrophy, but it may increase in growth and long defer the climacteric.

Many cases of fibro-myoma are undiscovered until the autopsy after death from some other cause. Others give rise to no symptoms and are discovered accidentally. Still others cause serious and sometimes fatal results.

Treatment may be divided into medical and surgical. Under medical, use of astringents to check hemorrhage and of hydrastis and ergot to stimulate contraction, in the hope of causing absorption or expulsion through the cervix and vagina. Of late, experiments have been made with the thyroid gland with not very flattering results. Ergot or its derivatives, given hypodermically or by the mouth, is the drug which has given most encouraging results. The electrical treatment has been of varying kinds. The best known is the method developed and so successfully carried on by Apostoli, of Paris, which in hemorrhagic cases has often done good service, but the ultimate results in decreasing the size and causing the disappearance of the tumor have not fulfilled the early promise.

Under surgical measures we have both conservative and radical. Under conservative operations tying the uterine arteries, decreasing the blood supply. The results are, however, uncertain. Goelet has reported some successful cases without incident. The failures, however, are estimated at 10 per cent., and the operation is open to the danger of injury to the ureters, hemorrhage and shock. Vineburg reports sloughing of the cervix in three cases with increased growth and hysterectomy ultimately.

Salpingo-oöphorectomy to artificially hasten the menopause and by lessening the nervous stimulus to check the growth.

Myomectomy originated by Martin of enucleating the tumors through the vagina by morcellation, or by the abdominal route.

Hysterectomy, vaginal or abdominal, is resorted to in those cases in which the more conservative methods of treatment, medicinal or operative, are inapplicable.

Of late the wider knowledge of the rôle of microorganisms in disease and the practical application of the knowledge in improved methods to promote aseptic conditions has greatly lowered the mortality. In 1891, Pozzi gives a mortality of over 21.2 per cent. Keith with a mortality of 8 per cent., yet considered it too large to justify operation, except in extreme cases.

The social state undoubtedly largely affects the question of operation, as in Case II, where a patient was unable to make her living.

The following reports comprise a series of four successive cases of abdominal hysterectomy, all recovered and the three working women are able to resume their occupations in comfort.

All the cases were prepared, with the exception of the fourth, an emergency case, with a surgical bath on the night preceding the operation, a soap poultice over the abdomen, after a thorough scrubbing, a second scrubbing with sterile water, alcohol and corrosive followed by a corrosive pad until the time of operation. The bowels had been thoroughly moved two days preceding and kept liquid. The bowel was irrigated the night preceding and the morning of the operation. No food, save a cup of black coffee, was given for eight hours preceding. One ounce of whiskey by the rectum and one-hundredth of a grain of atropia under the skin one-half hour before the administration of ether.

Ether was the anesthetic, and a quart of normal salt solution was given by the rectum before the patient was returned to bed. The vagina was thoroughly disinfected. In all cases the cervix was left, canal cauterized from above, and the stump closed over with catgut, the peritoneum being closed over that, after the manner suggested by Goffe, making the stump extraperitoneal. Catgut was the suture material employed and silver wire for the fascia. Wound was closed in layers, the skin by buried suture, fascia by buried silver wire.

The catgut, obtained from Baltimore, was prepared by the method of Dr. F. W. Johnson, soaked in ether for one week, in absolute alcohol for twenty-four hours, stretched and cut in thirty-inch pieces, wound in coil, folded in parafine paper, baked in dry oven at 60° C. one hour, and the next day at 130° C. for one hour and 140° C. for three hours, and examined by Dr. E. A. Darling, of Harvard bacteriological laboratory, and found sterile.

Case I. R. N., married, forty years of age. Complains of bearing down, of pain in back and side; dysmenorrhea followed by weakness, amounting of late to prostration. Patient is extremely nervous, and on examination had hysterical convulsions. She had married at seventeen; four children; no miscarriage. Menstruation established at sixteen, regular and painful.

Physical examination showed complete laceration of the perineum through the sphincter ani into the rectum. Uterus enlarged, fibroid in posterior wall adhered to rectum, and acts as a ball-valve closing the lower bowel. Patient entered the hospital April 19, 1896, prepared for operation after the manner indicated above. Vagina cleansed and cervix closed with silk.

Operation, April 21st. The fibroid uterus torn out of the adhesions to the rectum; ovarian arteries tied on either side; broad ligaments cut and clamped down to the uterine artery, which was tied; bladder separated in the front; uterus separated from the cervix about the vaginal junction; canal seared with thermocautery; cervix sewed over; broad ligament on left side closed with a whip-stitch; peritoneum brought together over the cervix, extending up in the same manner over the right side.

The patient stood the operation very well; codeia (one and one-half grains) given for pain, and repeated in two hours; strychnia (one twenty-fifth grain) every two hours for four doses.

Convalescence complicated by great difficulty in feeding. The thought of milk, or indeed any form of liquid food, was abhorrent to her. On the second day patient seemed likely to fail from starvation; nourished through the rectum, which was somewhat difficult because of the lacerated sphincter. She told me at this time she thought she would go home, she liked the cabbage and beef so much better than the milk they gave her. Nervous and slept poorly. At the end of a week temperature rose to 103°, pulse 120; and staid three days, evidently from the silk used in the vagina.

Discharged May 18th, well.

July 14th she came in, free from her nervous disturbance, and begged me to take her to the hospital for repair of the sphincter ani, which I did, July 24th, by Tait's method with perfect result.

This patient I have seen to-day in splendid condition, free from her old symptoms.

Case II. J. Q., thirty-nine, widow for fourteen years. Menstruation always profuse; has increased during the past nine months, accompanied by severe pain in the left side, recurring at intervals of two or three weeks; lasts about a week. The profuse flow and accompanying pain has kept her in bed much of the time. She has, therefore, been obliged to give up her occupation of detective in one of the large stores. Patient was strong in early life. Menstruation at first regular. Married at twenty-four; husband died in nine months. Five years ago had severe hemorrhage.

Physical examination showed the uterus irregularly enlarged, hard, drawn to the left side. Diagnosis, fibroid with adhesions.

Operation, December 21, 1896, assisted by Dr. Grace Walcott. Uterus with two interstitial fibroids. Operated as before, with the exception of the silk in the vagina. Recovery uneventful. Patient discharged well at the end of three weeks. She came to the office this week in perfect health.

Case III. M. E. P., single, forty-seven; works in a straw factory. Patient complains of pain in the left groin and back, of constipation, of frequent and painful urination; appetite capricious; marked mental depression. Menstruation established at sixteen; somewhat too frequent and profuse from the first. For the past few years, interval between the flow, of two or three weeks. Flow very profuse, and accompanied by discomfort rather than pain. Father died at thirty-four, from typhoid fever; mother at sixty-four, from cancer.

Patient entered the Deaconess Hospital, May 30th, and the operation was done two days later.

Physical examination showed tumor and uterus in one mass about the size of a child's head.

Slight edema of feet and legs reported when patient was at work; none noticed at the time of examination. Examination of urine negative.

Hysterectomy was done as in Case II, assisted by Dr. F. W. Johnson. Patient did well for a few days; then a slight rise of temperature. Wound was examined, and found to have suppurated superficially. However, she made a fine recovery. After a long investigation by the superintendent of nurses and myself, it was proved with little question that the towels supplied had been used in a case of mastoid abscess and had not been thoroughly boiled. The Arnold sterilizer was used, and, as is well known, the heat and pressure is not sufficient to kill germs already present. The trouble began superficially; the towels were freely used about the wound. Patient reports at the office this week in fine condition. Returned to her work in the straw-shop, and says that the awful depression of her mind has gone, and that she no longer wants to die.

The occulist finds that she can dispense with distance glasses, from the improved muscular condition of the eye. Two of the silver stitches have come out this past month.

Case IV. L. H., single, twenty-six, feather-curler by trade. With the exception of infantile paralysis, which left her very lame, patient was well until 1893. Menstruation established at fourteen. Regular and not profuse at first. In 1893, when twenty-three years of age, the flow became irregular. Through that year the history was of amenorrhea of two or three months, each time followed by profuse flow. She came to the dispensary, and a fibroid tumor about the size of a three months' pregnancy was found. She improved somewhat under medical treatment. In August of 1894, hemorrhage from the uterus; curetted under ether, and afterward, in absence of the author from the city, she was put in the care of another doctor. All palliative measures failing, she was sent to the New England Hospital, and salpingo-oöphorectomy performed. Patient was thought too weak for a more radical operation.

The tumor seemed to decrease somewhat in size after this; but the result was as before; amenorrhea for two or three months, followed by profuse flow. Called to see her in December, 1896. Flow amounted to hemorrhage. Curetting under ether. Patient too far exsanguinated to be moved or bear further interference. No flow for fourteen weeks, save a slight discharge. She rapidly gained health, strength and flesh.

May 21st, the flow began again; and, contrary to advice, she waited for hemorrhage before sending. Was removed at once to the Deaconess Hospital.

Admitted to the hospital May 28th. Temperature 99°; pulse 88. Loud anemic murmurs over base of heart. Next morning pulse had increased to 104, and temperature to 101°. Flow continued in spite of palliative measures, and patient was now exsanguinated. Immediate hysterectomy decided upon, in view of her past history. During the operation patient's pulse was very rapid and weak; she was kept alive with strychnia and digitalis and other stimulants; (four quarts of normal salt solution was given into the tissues). Uterus and tumor delivered with difficulty on account of former operation which had shortened pelvic ligaments and formed adhesions. The omentum was especially troublesome, large vessels were tied off. Bladder — adhered in a very curious manner — high upon the tumor, the right side extending up on to the broad ligament. At the sides and in the ligament a large plexus of veins above the uterine artery showed a condition in which it would have proved very difficult to control hemorrhage by the vaginal route.

Operation as before, assisted by Dr. Clara Alexander.

Convalescence was complicated by an irritable stomach, and a profuse watery discharge from the vagina, of which Baldy speaks in some of his cases. She, however, went home June 17th, three weeks after the operation. Is now well and able to work nights as never before since the first symptoms, in 1893.

The writer would not be understood to advise hysterectomy where myomectomy is applicable.

In the cases reported the relation of the uterus to the growths was such that hysterectomy seemed the wiser course, with less shock to the patient.

In all the cases an earlier operation would have conserved both time and strength. In all, great improvement in the nervous condition is marked.

Of late the writer has modified the closing of wounds, using silkworm-gut and the Noble stitch for the fascia, the muscle being united by interrupted catgut, the fat and skin by through-and-through silkworm-gut.

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CÆSAREAN SECTION.[1]

BY THEODORE C. ERB, M.D.,
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The spirit of the obstetrician to day is conservative. His duty is to serve the mother and patient and to save and not destroy fetal life. Craniotomy upon the living fetus is in direct violation of all principles of surgery, unjustifiable from any standpoint whatever. The craniotomist in a case where the mother's pelvis does not permit the child's birth in the natural way defends his position by saying, "If craniotomy is not performed both mother and child must die, while if this operation be done on the fetus, the mother at least will survive." But a living fetus need not be sacrificed, for a Cæsarean section comes to its rescue. The field of operation for embryotomy cannot be rendered fully aseptic and should incidental lacerations of tissues occur, which are very likely in a diminished parturient canal, we may have sepsis, peritonitis, salpingitis, ovaritis, etc., not knowing whether the mother's life is to be ended by one or all of these together. The defenceless fetus *in utero* has rights which must be respected and the wilful and premeditated destruction of the child's life has long ago ceased to be a justifiable procedure. Aseptic surgery and an improved operative technique have established the Cæsarean section as a rational and scientific procedure. I will briefly mention a case.

Mrs. G., thirty-eight years of age, seventh pregnancy, was seen August 31st, with Dr. J. J. Cronin. She had been in labor about thirty hours, the membranes having ruptured spontaneously nearly twenty-four hours before. The os was nearly fully dilated; position of fetus, O. L. A., and fetal heart 140 per minute.

The history of former pregnancies was as follows: At the first delivery the child was born dead. The second and third children were delivered alive. The remaining three pregnancies all resulted in the death of the children during the delivery. Forceps or version were done each time at five of the deliveries and once embryotomy. All six confinements occurred in Philadelphia.

Measurement of pelvis showed the distance between the anterior superior spines to be 9 inches; crests, 10 inches; external conjugate, 7 inches; and conjugate vera, about $2\frac{1}{5}$ inches.

Full surgical anesthesia was given, and dilatation of the os completed. The occiput had not fully engaged, and forceps with axis traction were applied three times, each time slipping, and once tearing the cervix slightly. Version was not tried because of the dry uterus and justo-minor pelvis.

Taking into consideration the existing conditions with the child's head at the brim of a small pelvis, with a conjugate vera of about three inches, the performance of Cæsarean section offered the best chance for the life of the mother and the only chance for the preservation of the life of the child. There was a chance of non-union and perhaps the addition of forceps or version were symphyseotomy tried. Just before patient was prepared for the laparotomy the fetal heart was found to have increased to 176. The patient was antiseptically prepared for the operation. Vagina was washed with soap and water and douched with solution corrosive sublimate, 1 to 3,000. The abdominal wall was scrubbed with green soap and water, followed by permanganate and oxalic solutions, corrosive 1 to 1,000, ether and absolute alcohol.

The incision, about four inches long in the median line, between umbilicus and pubes, was enlarged upwards to allow removal of uterus from the abdominal cavity. The placenta was located on right of median line. A rubber ligature was placed about cervix ready to draw taut should the hemorrhage become uncontrollable. The incision in the uterus came over the child's back and admitted easy extraction of the child. The cord was immediately tied, and the child was handed to Dr. H. J. Keenan, for resuscitation. After removal of placenta, the uterus immediately contracted. About three or four ounces of blood were lost. A subcutaneous injection of ergotin (two grains) was given.

A vaginal laceration was produced in the right lateral cul-de-sac of sufficient size to exhibit a full view of the os when the fundus was tilted backwards. This rent was immediately sutured with kangaroo tendon. Two layers of kangaroo-tendon sutures were placed in the uterus, and the abdominal wall closed with silkworm-gut. Time of operation about thirty-two minutes. Maternal pulse 120. Salt solution was given by rectum.

Dr. Cronin said the temperature ranged from 100° to 103.5° during first few days following operation. The pulse never rose above 120. Considerable distention accompanied this; but after a few doses of saturated solution of epsom salts, it disappeared, and the patient made a good recovery in four weeks. The child, a female, weighed eight and a half pounds, and showed one forcep mark on her head, which soon disappeared.

The patient was etherized by Dr. T. J. Reardon, and Dr. J. B. Lyons assisted during the operation.

Cæsarean section was first done on the living mother about 1498. In the earliest cases the uterine wound was not closed because the contractions and retractions were thought to tear out the stitches. It was in this century that sutures were introduced, but the death-rate remained high until Porro, in 1876, introduced his method of amputating the uterus and including the stump in the abdominal suture. The greatest advance was made in 1882, by Sänger, of Leipsic. He introduced a strict antiseptic technique, closure of the uterine wound by a largely increased number of interrupted sutures to get early union of peritoneal surfaces, and lastly, deliberation in selecting the operation of abdominal section for the case in hand and before onset of labor, and the performance of the operation before the patient's strength had been exhausted by repeated examinations or vain attempts to deliver by forceps or version.

In elective cases it is better to perform the section just at or before labor commences, because the patient can have better preparations for a laparotomy. The objections often urged against performing the operation before labor begins, that is that hemorrhage might occur on account of imperfect uterine contractions and that sepsis might occur because of retention of lochia, are theoretical. Experience has proved both of these objections to be wrong, for the uterus does contract well when emptied so prematurely. The dilatation of the os before commencing the section will overcome the second objection.

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[1] Read before the Suffolk District Medical Society, Dec. 22, 1897.

After forceps or version fail in the attempts at delivery, the child being still alive, the question arises whether to perform a Cæsarean section, a Porro, or a symphyseotomy, and thereby place craniotomy in the position it should occupy — an operation to empty the uterus of its dead fetus. Induced labor in contracted pelvis in days of modern surgery should be avoided. The uterus serves the physician as the best incubator, and the patient should be allowed to go to full term, and it should be decided which of the three operations seems best to perform.

In deciding between Cæsarean section and symphyseotomy in a pelvis of eight centimetres with a well-formed or large-sized child, the rule is, that symphyseotomy is indicated. With a conjugate of seven centimetres or less, with the same conditions, the Cæsarean operation should be chosen. Symphyseotomy, then, comes in to limit the Cæsarean section. If called in due time to such a case, careful measurements should be made, the relation between the size of the fetal head and the pelvis carefully noted, also the degree of ossification of the fetal head. The history of previous confinements should be considered. Only through the deliberate election in a given case, of an operative procedure, can the obstetrician plead he has done his whole duty by the two beings whose life depends on his skill. Oftentimes forceps or version must be added to the symphyseotomy, thereby diminishing the chance of a living child.

The possibility of a living child is greatly increased in the Cæsarean section, and as a whole the section seems better, since in some of the latest reports 234 symphyseotomies performed in Germany give a maternal death-rate of 10.5 per cent. and child's mortality of 20 per cent. In Germany, Shauta operated on 15 cases by Cæsarean section without a death; Leopold on 17 cases with 3 deaths; and Zweifel on 29 cases with 1 death. If we have an operation, which is especially done to save the life of the child and yet gives a death-rate of 20 per cent., the more strongly we adhere to Cæsarean section the better.

Comparisons of the statistics of the Cæsarean section and the Porro-Cæsarean operations are misleading because of the widely different conditions under which they are performed. The Porro, no doubt, produces the most shock; but in either Porro or Cæsarean, the patient ought to recover when the operation is performed skilfully and expeditiously. At first the mortality for Porro was 57 per cent. diminishing to 50 per cent. and, according to the latest reports, to 25–38 per cent. The Porro is indicated in pelvic tumors obstructing the parturient canal, carcinoma of uterus (especially when the disease is located in cervix), uncontrollable uterine hemorrhage presenting itself during Cæsarean section, and lastly and by far the most frequent indication in uteri where *sepsis* is suspected.

In dealing with an infected uterus it is perfectly justifiable to do a total hysterectomy instead of attempting to do the impossible, to cure the patient by a Cæsarean section. It does not seem justifiable to remove healthy uteri, healthy tubes and ovaries in performing abdominal section. The patient may become pregnant again. That does not concern us. Statistics show that repeated Cæsarean sections may be done with as much safety as the first. The question of removal of tubes and ovaries to prevent further conception should be decided between patient and operator. The mother has the right to decide about her relations to her husband and her power of bearing children. That is an ethical point the physician has no right to decide. It seems right then for a *woman*, who is in a condition where natural delivery is impossible, to *make* the choice, if the risk of stopping procreation be no greater than the risk of continuing it. Should she decide in the affirmative, it seems it ought to be done in a safer way than by removing the uterus — simple removal of ovaries.

In conclusion: There is no operation in obstetrics where decision plays a more conspicuous part in the prognosis than in Cæsarean section. When it is performed after the mother and child are exhausted the mortality is necessarily high; but the elective Cæsarean section, on the contrary, subjects the mother to about one risk — septic infection — while the child's chances are almost nothing. Faulty technique or sepsis has been the cause of such a high mortality in the past. To day the death-rate has been lowered to about the same rate which accompanies difficult embryotomy.

In 13 cases operated upon before labor had begun, 10 women and 13 children recovered. Two mothers died of sepsis and one of hemorrhage. Of 6 cases operated upon at the beginning of labor, 6 women and 6 children recovered. Of 12 cases, where the women had been in labor from two to six hours, 10 mothers and 11 children survived. Of 18 cases where the mothers had been in labor from nine to twelve hours, 8 mothers and 13 children were saved. These statistics speak well for elective Cæsarean section. The figures of individual operators give a mortality from 0 to 10 per cent., and a saving among children of 90 to 95 per cent.

Cæsarean section is the rational procedure in conservative modern surgery, because by its successful performance two lives are saved. It is evidently the scientific procedure, because in the latest statistics the maternal death-rate is as low as other obstetric operations, and because the loss of children is much less.

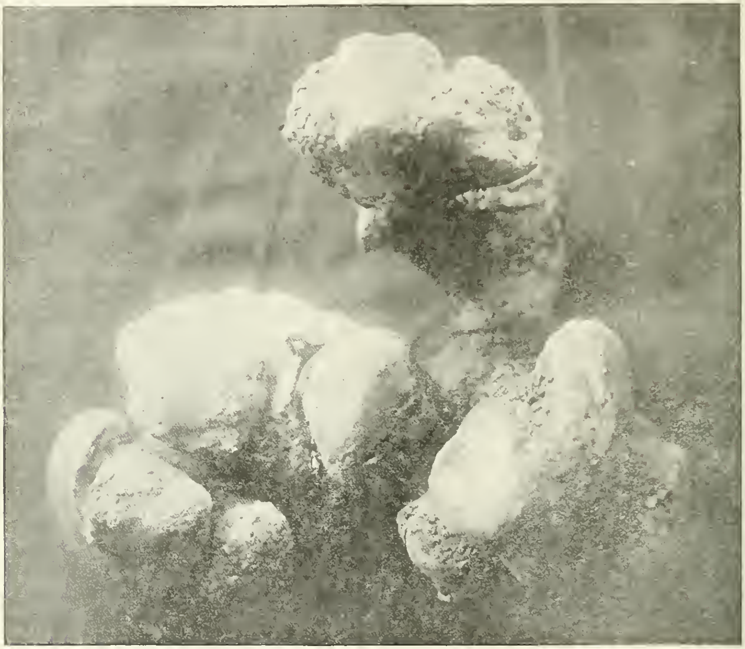
Senn states that Cæsarean section will always hold a permanent place in obstetric practice as a legitimate procedure and that at no distant date it will limit the Porro to cases in which the uterus itself constitutes a source of immediate or remote danger. The maternal mortality diminishing during the last thirty years from 56 per cent. to from nothing to 10 per cent. is surely a result of which modern abdominal surgery and obstetrics may be justly proud.

Increase of Physicians in Germany. — According to the *Deutsche Medicinal Kalender* there were 24,873 physicians in the German Empire in the year 1897, a ratio of 4.5 physicians to 10,000 inhabitants. In 1883 the ratio was 3.33 to 10,000; in 1890, 4 to 10,000. Berlin with 1,750,000 inhabitants, has 2,196 physicians, or 1 to 800, while ten years ago there was but one physician to 1,218 inhabitants.

LARGE RENAL CALCULUS.

BY FRANK K. PADDOCK, M.D., PITTSFIELD, MASS.

At an autopsy recently upon the body of an elderly lady, seventy-six years of age, I removed the largest renal calculi I have ever seen. The enclosed photograph is a representation of the actual size of the calculous mass removed from the left kidney. The mass weighs seven and one-half ounces. In the right kidney was found a similarly shaped formation weighing five ounces; the latter crumbled while being removed. They are apparently largely composed of the phosphate of lime.



About thirty years ago, the lady from whose body the calculi were taken had an acute nephritis from which she apparently recovered within a few weeks, and was able to be about ever afterward, except that occasionally she was confined to her bed for a few days at a time, until within two months of her death, which was finally caused by uremia. For twenty-five years her urine contained pus in large quantities, and often she had quite profuse hematuria.

During the thirty years intervening between the first attack of nephritis and her final illness — two months previous to her death — she never had headache, anexoria, anasarca or insomnia. I never knew her to have chills or increase of temperature. She was a healthy-looking woman, except for a constant paleness of complexion.

The kidneys were greatly distended, forming two large sacs, each holding more than a pint, and both filled with pus.

Medical Progress.

RECENT PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY HENRY F. HEWES, M.D., BOSTON.

THYROID CHEMISTRY.

Since the discovery of the relation between disordered states of the thyroid secretion and certain pathological conditions of the organism, and the resulting use of thyroid therapy, great interest has developed in regard to the physiological action of the thyroid secretions, and to the chemical nature of the substance to which this action is due.

Of the investigations in regard to the nature of the physiologically active substance of the thyroid, that of Baumann has given the most satisfactory results.[1]

This author has isolated a definite substance from the thyroid glands of man and of animals, thyrojodin, or jodothyrin, which produces upon the organism, according to his experimental researches, the same effects which are obtained by the administration of the fresh thyroid gland.

Thyrojodin is an organic iodine compound containing 9.3 per cent. of iodine. The ultimate analysis of the compound is not published. It contains P_2O_5 and nitrogen, and does not give the reaction for proteid, resembling a disintegration product of nucleinic acid. It exists in the gland, in part free and in part in combination with proteids.

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[1] Baumann: Zeitschr. f. Phys. Chemie, Bd. xxi, s. 319.

It is isolated as follows: Finely divided gland substance is boiled four to eight hours in 10 per cent. H_2SO_4, the fluid cooled in ice-water and filtered. The brown precipitate is washed with water, boiled in 90 per cent. alcohol, the alcoholic extract evaporated, the residue rubbed with ten times its weight of lactose, the fat separated by mixing with naphtha, and the residue dissolved in cold dilute sodic hydrate and filtered. The alkaline fluid is acidified, the thyrojodin precipitating in flakes. This precipitate is further purified by re-dissolving and re-precipitating. The thyrojodin thus obtained is a brown powder, insoluble in water, soluble with difficulty in hot alcohol, very soluble in caustic alkalies.

Doses of one milligramme of this thyrojodin give the physiological effects obtained by administration of the thyroid gland. The action is not due to the iodine of the compound alone, but to the special organic iodine compound.[2]

The author reports that the results of the treatment of myxedema and parenchymatous goitre by thyrojodin are the same as in the treatment with the fresh thyroid gland. The results of treatment are more rapid with the thyrojodin than with the fresh gland, owing probably to its more perfect and more rapid absorption when given freed from the glandular tissues.[2 3]

The author's results in regard to the physiological action of thyrojodin are confirmed by F. Voit,[4] Roos,[5] Magnus-Levy[6] and others. His report in regard to the action of the product in diseases of the thyroid has been confirmed in myxedema by Ewald and Leichtenstein, and in goitre by Roos and several others.

That the compound is a perfect substitute for fresh thyroid in all conditions of thyroid disease, is doubted by Gottlieb.[7] This author reports that the effects of extirpation of the thyroid in dogs could not be stayed by administration of thyrojodin, while it could be by doses of fresh thyroid. In opposition to these results of Gottlieb, Baumann and Goldmann in a series of experiments, found that the effects of extirpation of the thyroid in dogs were remedied by administration of thyrojodin quite as successfully as with fresh thyroid.[8]

Following the discovery that the usefulness of the thyroid therapy in parenchymatous goitre is due to the action of this iodine compound, Baumann has investigated the iodine content of the thyroid gland of men and animals in localities where goitre is endemic, and in localities where it is rare.[9] The results show that in Freiburg, where goitre is endemic, the iodine content of the thyroid is much lower than in Hamburg and Berlin where goitre is rare. The author concludes that there is a definite connection between the iodine content of the thyroid glands and the frequency of goitre in special regions.

The author shows further that the iodine content of the thyroid is increased by the administration of iodine or food rich in this substance.[10]

The conclusion of Baumann in regard to the connection of the iodine content of thyroids and goitre is not supported by the observations of Oswald in Switzerland.[11] This author found no such connection. In some regions where goitre was endemic the iodine content of the thyroid was higher than in regions where it was unknown.

THYROID ADMINISTRATION AND METABOLISM.

Fritz Voit[12] summarizes the results of investigation on the influence of administration of preparations of the thyroid gland upon metabolism.

Practically all observations agree that the administration of preparations of thyroid substance, inclusive of jodothyrin, the supposed active substance of the gland extracted by Baumann, causes a general increase in the body metabolism. A large number of investigations record a considerable increase in the elimination of nitrogen. In a less number of cases, the excretions of chlorine, phosphoric acid and water have been investigated, and found increased. The investigations on the respiratory quotients and the excretion of CO_2 are few. Such as exist show an increase in the elimination of CO_2, an increased intake of O and a diminished respiratory quotient, suggesting an increased fat metabolism.[13 14]

Voit records the result of a very complete investigation of the metabolism of a dog under the administration of thyroid preparations.

In Experiment I fresh thyroid preparations, with high calorie feeding, were given; in II, the same, with no feeding; in III, jodothyrin, with high calorie food; in IV, the same, with hunger.

In I, II and IV the excretion of nitrogen, and of CO_2 and of urine were estimated.

In III the excretion of nitrogen, CO_2, P_2O_5, and water, the intake of oxygen and the respiratory quotient were estimated.

The results showed, in all experiments, an increase of nitrogen, and of CO_2 elimination. The nitrogen excretion was greater proportionally in the hunger experiments (II, IV), the CO_2 in the feeding experiments (I, III).

The cases on high calories feeding gained weight but lost in proteid content, the gain being due to fat. Less fat was gained during the administration of the thyroid than in the periods before and after, when the dog took the food only.

The hunger cases lost weight, both proteid and fat.

In Experiment III nitrogen, CO_2 and H_2O elimination was increased; P_2O_5 elimination was unchanged; the intake of oxygen was increased; the respiratory quotient sank.

The results agree with the summarized results of general investigation. They show increase of the metabolism of proteids and fats in the body. The author shows further by his estimations that the increased proteid waste is due to a direct action of the thyroid substance upon the proteid tissues, and not to an indirect action upon these through the removal of the proteid sparing action of the fat, by primary destruction of the fat.

These results have a direct application to the practice of the administration of thyroid preparations as a therapeutic agent. While this treatment is undoubtedly efficacious in certain conditions, it must necessarily entail a waste of the proteid substances of the body, even where the amount of food given is sufficient to increase the patient's weight. The evil which may ensue in this loss of proteid substance must be balanced against the benefits of the treatment in other ways, in the use of the remedy in a given case. In myxedema the balance is in favor of the treatment; in obesity it may be against it.

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[2] Baumann: Loc. cit., Bd. xxi, s. 493.

[3] Roos: Loc. cit., Bd. xxii, s. 16.

[4] F. Voit: Zeitschr. f. Biologie, Bd. xxxv, s. 116.

[5] Roos: Zeitschr. f. Phys. Chemie, Bd. xxii, s. 16.

[6] Magnus-Levy: Deutch. med. Woch., 1896, No. 31.

[7] Gottlieb: Loc. cit., 1896, No. 13.

[8] Munchen. med. Woch., 1896, No. 47.

[9] Baumann: Zeitschr. f. Phys. Chemie, Bd xxii, s. 1.

[10] Baumann: Munchen. med. Woch., 1896, No. 47.

[11] Oswald: Zeitschr. f. Phys. Chemie, Bd. xxiii, s. 265.

[12] Zeitschr. f. Biologie, vol. xxxv, p. 116, 1897.

[13] F. Voit: Loc. cit.

[14] This increased gas exchange is more marked in fat persons and myxedema. Magnus-Levy found it very slight in the normal.

ABSORPTION OF FAT.

The investigation of Moore and Rockwood upon the absorption of fat in the intestine marks a fundamental advance in our knowledge of this subject.[15] The theory that the fat was absorbed in the intestine, in the form of an emulsion of natural fat, was formerly the accepted theory upon this subject. In recent years this theory has been discarded by various observers for the following reasons:

(1) Careful observation has failed to reveal the passage of fat globules in the striate border of epithelial cells of the intestine where fat absorption is going on.

(2) The formation of the fat globule shows a gradual advancement in size in absorption, arguing for a gradual formation from solution, not an absorption of globules from emulsion (Krehl and Altmann).[16]

(3) Investigations, as those of Cash and Ludwig, Radjiejeuski, Münk and others, have proven that fat absorption goes on perfectly when no emulsion of fats, but simply a clear solution is present in the intestine.[16]

Following the abandonment of the theory of absorption by emulsion of neutral fats, Münk has suggested that the fat is absorbed in the form of fatty acids, and has supported this by investigations which prove that absorption of fatty acids may take place in the intestine.

Altmann, following this work of Münk, and also that of Radjiejeuski proving that soap may be absorbed from the intestine, suggested that the absorption of fat occurs as fatty acids and as soap. That this latter theory coincides with the actual facts of the case the investigation of Moore and Rockwood has determined. These authors not only confirm these qualitative determinations of the absorption of fat as fatty acids and soap, but also place the theory of the absorption of all the fat in the above forms on the basis of a quantitative determination. They show —

(1) That the mixed fatty acids of the food fats, as mutton, beef, lard, are soluble in bile acids at the body temperature.

(2) That the solubility of these fatty acids from the mixed fats of food in the bile of the ox, dog and sheep is sufficient to account for the solution of all the fatty acids from the fat of normal food.

(3) That the result of the action of the mixed intestinal secretions of the bile and pancreas upon the fat of food is a splitting of the neutral fat to fatty acids and glycerine and a consequent formation of a solution of fatty acids in bile acids, *plus* soap from the combination of fatty acids with alkalies.

(4) That in the intestinal contents of some of the animals used in the investigation the fat radicle was represented only in the form of fatty acids in solution, or in soap; and that absorption of fat occurred perfectly in these cases. In others an emulsion was present together with fatty acids and soap.

From the summary of results on this subject the authors conclude that the fats of food are all absorbed from the intestine in the form of fatty acids in solution, and of soaps. In the part of the intestine where the reaction is acid the absorption is principally of fatty acids; in the part where the reaction is alkaline to litmus, or soap.

The importance of this knowledge in connection with the treatment of conditions of absence of the pancreatic or biliary secretions from the intestine is evident. (See Editorial in the Journal of April 7th.)

TRANSFORMATION OF FAT IN THE BLOOD.

Rohrig noted that, after a meal rich in fat, the blood contained an increased quantity of fat, while the lymph did not. This indicated a digestion of fat in the blood.

Cohnstein[17] found that fat injected into the blood vanished without an appearance of fat in the lymph or the urine. Blood and chyle fat were mixed, the fat content of the mixture taken, and the mixture kept in a current of air for twenty-four hours. The fat content diminished one-half. No change occurred if the stream of air was cut off.

The author shows that the fat is not broken up with formation of CO_2, as the air stream from the mixture was not richer in CO_2; but is transformed to some non-gaseous products, as the solid residue remains the same.

Hanriot found that blood serum of a neutral or slightly alkaline reaction possessed the faculty of breaking up and saponifying neutral fats. The action was very vigorous in the case of monobutyrin, less marked but present with several oils tried. The saponification was measured by estimation of the liberated butyric acid. The author concludes that this action is due to an enzyme in the blood, which he names *lipase*.[18]

The author found that this hydrolytic action of blood serum upon fat was similar in vigor to that of the pancreatic enzyme in neutral or alkaline media, but twice as strong in acid media. The lipase increased in activity with the alkalinity of the serum. As the same fact is true of the activity of the proteid-converting ferment of blood serum, it is clear that the administration of any substance tending to increase the alkalinity of the blood may greatly aid in the conversion of nutriment in the body.

INFLUENCE OF DIVISIONS OF FEEDING ON NITROGEN METABOLISM.

Gebhardt[19] and Krummacher[20] have each made an independent investigation upon the influence of the division of the daily food-supply into several meals, upon proteid metabolism.

The results in both sets of investigations show that more nitrogen is retained in the body, that is assimilated, if a given quantity of food is ingested in divisions during the day, than if this quantity is taken all at one time.

Krummacher, in his investigation, gave the food in four meals daily, and in a single meal, in alternate periods. Gebhardt gave one, two, four and eight meals per day. Gebhardt considers that the nitrogen deficiency with the single meal is due to the increased disintegration of the proteids to amido-acids, indol, etc., under the influence of the pancreatic ferment and bacterial putrefaction, during their longer stay in the intestine. Krummacher shows that as the nitrogen content of the feces is constant with both kinds of meal, the deficiency is not due to lessened digestion of proteids; that as the formation of amido-acids and indol, etc., by pancreatic and bacterial fermentation in the small intestine is practically *nil* in the normal period in which the food lies there (investigations of Nencki, MacFadyan and Sieber), the deficiency is not due to increased intestinal putrefaction, as Gebhardt considers; and concludes that the difference in assimilation is due to the greater capacity of the cells to transform the food when it arrives in smaller amounts at separate periods.[21]

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[15] Journal of Physiology, vol. xxii, p. 58.

[16] References given in Moore and Rockwood's article.

[17] Cohnstein: Pflüger's Archiv., Bd. lxv, s. 473.

[18] M. Hanriot: Compt. Rendu, 1896, cxxiii, p. 753; loc. cit., 1897, cxxiv, p. 777.

[19] Pflüger's Archiv. f. Physiologie, Bd. lxv, s. 611.

[20] Zeitschr. f. Biologie, Bd. xxxv.

(*To be continued.*)

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. THE SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

Regular Meeting, Wednesday, December 22, 1897, Dr. F. W. Johnson in the chair.

PATHOLOGICAL SPECIMENS.

Dr. Burt: I have a specimen that has been very interesting to me, and I thought the Society might like to see it and hear about it. It is from a young woman, twenty-three years old. I saw her first about the 25th of May. She had had a development in the lower bowels which she had noticed for a period of about three weeks, and previous to that time there had been nothing noticeable in her condition at all. I saw her the latter part of May on Wednesday, and found growths that needed removal. The following Monday she came in and I looked over the case again, and found her size had increased to twice what it was the previous Wednesday. The next morning operation was done; and I found pyosalpinx on the left and ovarian cyst on the right. The two were as difficult to get out as anything I have ever met, and adhesions were quite numerous; but every one present felt it was simply impossible to get those cysts out and it was supposed they would have to be left there and packed, especially the right one. That was so densely adherent that it had to be practically torn from all surrounding tissues. It was adherent a great deal to the bowels, and could not be separated. In that case I had to take a method which I have not been obliged to do before — cut off around the sac and turn the thing wrong-side out, and that left the sac, the layer, on the surface of the intestine, and that afterwards peeled off and left a fresh surface which was sewed with catgut and bleeding stopped. Finally, I was able to get the thing all out, so that there was not anything left. That case then did remarkably well. I don't think I have seen a case that could sleep the following afternoon and all night following an abdominal operation of that magnitude, and this one did. She was out inside of four weeks, everything natural and normal. It was not long, however, before she began to feel trouble. I examined again, and found a little development in Douglas's cul-de-sac, and above and behind the uterus, that could be felt through the abdominal wall. At first I did not want to interfere with it, but kept watch of it. It has gone on growing a little more and more all the time, until within the last week we decided to have another operation, and she returned Monday and was operated on yesterday. This development was a sac that contained between two and three quarts of muco-pus, quite thick. Inside of that was another sac, all of these springing from the right broad ligament. Tissues had been drawn up and stretched so that it occupied that amount of space, and the sac within the sac was perhaps one-sixth part as big as the whole, and that contained the tissue you see there, which is evidently papillomatous; so that now we have a growth returning after an operation within six months — a growth which had not anything to do evidently with the others. This is a thing that has not been in any of my cases before. I consider it a very interesting case, and I thought you might be pleased to see it.

Inasmuch as there is to be a paper on the subject of fibroid, I thought I would bring this specimen as one that was operated on to-day. That is, one which contains all that could be removed through the abdominal walls of uterus and growth. It was all nodules in all directions, quite a number of them, and quite a number of small developments inside, some of them hard and some soft, a mixed growth. That is from a lady fifty-three years old. She had her menopause two years ago, and this has all grown as far as anybody knows within that time and been growing very rapidly recently. Quite lately she has been suffering from the pressure it caused; and there was one pretty large nodule directly in the bladder which caused a good deal of trouble. It was more or less movable, but not at all suitable for the operation by way of the vagina, so that this was done through the abdominal wall. I found that about one-half of the surface was adherent to intestines, omentum; and it was so densely so that it left a patch as big over as my two palms and hands, after being removed, which was hemorrhagic and had to be closed in. It was so tight to the intestines that it was a very difficult matter to separate it off — one of those cases of which you could not make the diagnosis before getting in as to the amount of adhesions, but on getting through it proves to be very dense. I should say I had to work from one-half to three-quarters of an hour on those adhesions alone, getting them off the bowel, separating from that growth and stitching up.

Dr. Johnson: I have two fibroids I would like to pass round. The history of this case is as follows: Mrs. E., thirty-nine. Menstruated at eleven. Regular for a year or two. Next two years anemic; slight watery discharge, no blood. For past few years has menstruated every two weeks; slight flow. In October hemorrhage lasting six weeks and nearly killing the patient. Entered Charity Club Hospital with loud anemic murmurs, and was kept in bed until strong enough for operation. Hysterectomy was done December 18th. The patient is doing well. This fibroid is a small one. It was shelled out of the anterior wall of the uterus so that I could get room to dissect off my anterior flap; one end of it extended to the endometrium and that probably was the cause of the excessive flowing.

This other uterus I pass around shows a pedunculated fibroid which had begun to slough. We are often told that small fibroids are of very little danger, and when they become pedunculated as this is, are of almost no importance at all. It was not twisted, but adherent to the broad ligament, of bluish-yellow color and was the cause of the symptoms.

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[21] E. Voit: Zeitschr. f. Biologie, Bd. 3.

Dr. S. E. Palmer read

A REPORT OF FOUR CASES OF HYSTERECTOMY FOR FIBROIDS.[1]

Dr. Richardson: I have been very much interested in this communication. The subject is one in which all surgeons who work in the abdominal cavity take a deep interest. The first point which is not as yet fully settled is as to the indications for hysterectomy in fibroids. Although the mortality is steadily diminishing, yet I find in my personal experience that no operation is so uncertain; the most discouraging cases do well while some of the most encouraging ones do badly. I recall one or two instances in which I could make out no flaw in the operation, no fault which could have been provided for beforehand and yet in which death followed very rapidly from a fulminating peritonitis. The source of infection probably was from the uterine canal. In one or two cases we have had a fatal result with no pathological lesion whatever. I recall one case which died at the end of about ten days and in which Dr. Whitney at the autopsy could find nothing whatever. The woman had a high temperature and a high pulse. There was no evidence of peritonitis; the cultures were sterile. I feel, therefore, that it is very hard to predict the probable outcome in a given case of hysterectomy for uterine fibroid.

It seems to me that the indications for hysterectomy are: first, a rapidly growing tumor; second, hemorrhage; third, pressure, with its sequelæ; and, finally, general discomfort, anxiety and mental impairment. Dr. Palmer did not speak especially of the diagnosis of fibroids. I should like to mention the difficulties in the way of diagnosis that I have met with — cases in which I have operated for fibroids and found something else, cases in which a similar mistake has been made by others, better diagnosticians than myself. Within the last three months we have operated on cases supposed to be fibroids, but which proved to be, one an extra-uterine pregnancy, another a chylous cyst of the mesentery, another an ovarian tumor with twisted pedicle. Of course, the diagnosis would have been settled in these cases by passing a uterine sound. We did not do this because it was clear that some operation was necessary. Though the diagnosis was wrong, the error made no difference.

In another case an extra-uterine pregnancy was found. In this case I had no doubt that the tumor was a fibroid, even after I had exposed it. I recall another case which Dr. Homans saw with me several years ago. After the tumor was exposed we all thought that it was a fibroid. It proved, however, to be the thickened sac of an abdominal pregnancy, with a fully developed dead fetus. I have seen a number of fibroids complicated with large abscesses of the tubes, and I have always found these cases to be grave.

It seems to me that the technique of the operation is well established. I have had no experience with morcellement. I feel decidedly opposed to all vaginal operations on tumors of the uterus beyond a certain size, and confine that operation entirely to a freely movable uterus not much above the normal size, in which, as in cancer, it is important to separate the cervix from the healthy tissues. The abdominal operation, it seems to me, is by far the better operation. We now make the dissection of the uterus as we would make the dissection of a tumor of the neck; tie the uterine artery first, after relieving the tumor by tying off the ovary, with the round and the broad ligaments. It seems to me worth while to do it in this way because we know that we shall cut neither ureter, intestine nor bladder. We do not clamp because we cannot use clamps and know exactly what we are doing. I have known of irreparable injuries caused by methods of uncertain dissection. Normal visceræ are displaced, especially in the case of large tumors, until they may be out of all reasonable relations. For instance, I have cut a hole in the bladder when operating on what seemed to be the posterior surface of a uterine fibroid. The bladder had become adherent to the fibroid early in its growth; as the tumor increased in size, and became twisted, it had pulled the bladder around with it. In this particular case no harm resulted. With reference to the cutting of the ureters, the ureters vary greatly in their position with respect to these tumors; not only are they not always where they should be, but they may be excessively displaced, even thrust into the midst of the apparently safe operation field. We should therefore exercise the greatest care in our dissections; we should see what we are doing — we should take that route by which we can see the best.

In closing in the stump I have always left the cervix, a method which seems to me to make the operation easier. I have closed in the stump with peritoneum, as Dr. Palmer described, except that I use silk instead of catgut.

One or two symptoms spoken of in these cases are very interesting to me. It is not always possible to find some gross source of wound-infection, like the towel spoken of, to explain things. When we think how easy it is to contaminate a wound — how impossible to prevent contamination — we must admit that all wounds are necessarily contaminated more or less. Our operative success will be proportionate to the efficacy of our technical barriers against invasion of the wound and to the phagocytic powers of the blood behind these barriers. In view of this ever-present contamination, dilute though it may be, in view of feeble powers of resistance, it is not so surprising that occasionally, after the most satisfactory operations, we get these evidences of sepsis. I can now recall several cases of inexplicable sepsis that have occurred recently in my own practice; some of the cases like Dr. Burt's case, universally adherent multilocular cysts; some of them cases of fibroids. At the end of a week or two, without any cause that we could make out, the temperature would for a few days run up to 103° or 104° in the evening — a very peculiar temperature chart, and one that I could not explain, for it apparently had no effect, either immediate or remote, on the prognosis, though it gave me great anxiety. Moreover, there were no physical signs of local infection.

Hysterectomy, I think, the greatest operation in surgery, the most difficult, the most uncertain. It is an operation in which success is largely a matter of experience. Every operator sees his mortality diminishing as time goes on. His good results increase not only with additional experience in the operation itself, but with the betterment of his general technique. I have seen many men perform hysterectomy; it seems to me it is an operation that on the average is well performed in thirty minutes, but even better in forty-five or sixty. I do not think that it is an operation in which one ought to feel hurried. One can, perhaps, by clamping the broad ligaments, snap out a uterus in four or five minutes; these are just the cases in which one is likely to clamp or to cut the ureter. This is one of the great dangers of hysterectomy, and, like all dangers, it must be met with caution — not in unnecessary haste. I don't believe in taking three or four hours for a hysterectomy, but I do believe in taking from half an hour to an hour. In many cases I perform myomectomy, which is a very gratifying operation. I am convinced, from my own experience in myomectomy, that I have at times taken out a uterus when it was not necessary. I see no objection whatever to this operation; it has everything to commend it.

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[1] See page 343 of the Journal.

In future, hysterectomy for fibroids seems encouraging; yet I still feel conservative in advising it, for one cannot but see the occasional bad results of the operation, even if the ultimate results are good. I have seen, for instance, one or two cases of mania. I recall one case in which I removed the uterus of a rather weak-minded woman. The results were as perfect as could be. The woman dropped dead while she was being fitted to a supporter. I do not know that the death could justly be attributed to the operation; yet the case must be included in the fatal cases. I have seen, too, a number of cases in which the patients have complained of hot flashes after removal of the uterus. In some instances it seems that the result is worse than the disease; the patients suffer much more from the hot flashes than they did from the tumor. I like to feel in looking back on the cases that I was wholly justified in the operation. On the whole, hysterectomy is not performed often enough, and its dangers are possibly exaggerated. On the other hand, I think possibly at times, after a long series of uninterrupted recoveries, we may get to feel a little too radical. If one has a series of fifty or a hundred consecutive cases of recovery, he thinks there is no danger at all. Then comes the inevitable disaster, the three or four fatal cases.

Dr. Conant: I have been very much interested in this paper, very much interested in the report of the cases, because it seemed to me they come in the class of women that we are called upon to treat, not because they have plenty of money and are able to do what we would deem the wisest, but because they have to work for a living and we are brought face to face with what is the best thing to advise in cases of that sort. I don't know how it is in other men's experiences, but most of the cases of fibroids I see occur in poor women, many of them having to work for a living. I presume there are in the practice of some men wealthy patients. My own experience is that it is in the poorer patients who have to lead a life of invalidism or submit to radical operation. I think I am a little more radical than Dr. Richardson, because I advise the operation rather more freely than he apparently does. I believe that where there is a history of tumor of any considerable size which interferes in any way with the occupation in which the woman is employed, where there is any disturbance from flowing or history of some sharp attack of the peritoneum, I believe such an operation as has been described or one similar to the operation of myomectomy in which the tubes and ovaries are removed to be very desirable. I have had no experience with tying the uterine arteries, therefore I cannot speak from experience; but in looking up the statistics I have not wished to have a personal experience.

I have had a few cases of vaginal hysterectomy, and I agree with Dr. Richardson, that the abdominal route, as far as I am concerned, is very much to be preferred, and also that the tendency in the case of small tumors where there are adhesions, or where the tubes and ovaries are affected, is to operate through the abdomen. This happened not very long ago where I was called in, the opinion having been given by a man very much my senior that it was unwise to operate, and after examining the woman there was felt to be surely one fibroid perhaps as large as the fist, another one which seemed to be as large as a lemon on the right side, and still another which was not absolutely made out and which was thought to be either another fibroid or an ovarian cyst. The woman said she must have something done; and although she had been advised not to have anything done, I told her I would operate if she so desired. This bears out the point Dr. Richardson made, that when you operate you are not sure of the diagnosis until you open the abdomen. There was only one fibroid tumor, about as large as the fist, with a very small pedicle very easily removed; and, as far as the fibroid was concerned, it was a very simple operation. Then came the difficult part of the operation. The tubes and ovaries on both sides were thoroughly inflamed and dropped down into the pelvis, both fastened by a band across from one side to the other, so that you got into the pelvis and dug your way out. There did not seem to be any question as to what ought to be done. It seemed unwise to go ahead and do complete hysterectomy, and therefore ventral suspension was done, and the patient did uninterruptedly well; no rise of temperature. Sewed up tight. It followed the usual result of a normal case.

One other case which I have had also taught me a lesson and I mention it to show the possibility of error under which one may labor. I was called to see this case in consultation with a good man, and the first thing on exposing the abdomen was a tumor seen about the middle line. On examination it felt very much like a fibroid. On each side there were two masses to be felt, which felt like pus-tubes. The woman was flowing, and I said I would prefer not to make a more thorough examination, but examine later. She was just at the end of a period of about ten days. She started twenty-four hours after that, and flowed persistently something like a week, and he told the family she probably had an extra-uterine pregnancy and he hoped that it would be absorbed, having read a recent book, in which the author advocates allowing absorption if possible. The temperature finally began to go up, and he asked me to see her again; and that was about seven (?) weeks after the first examination. The appearance of that tumor was very marked, pushed up nearly to the umbilicus, and felt more like a fibroid than before. I told him I excluded any question of extra-uterine pregnancy, and thought we were dealing with a fibroid acting queerly; and unless we had a large pus-tube pushing it up, I could not account for it. We took out the fibroid by myomectomy, which was nearly as large as a child's head; and then I saw two of the most enormous pus-tubes I have had anything to do with. On one side nearly a pint and a half of pus, and the other broke. Ventral suspension was done, and that woman went through a more or less septic condition; but now, some three weeks after the operation, she is sitting up.

Those two cases, to my mind, were very instructive as to what had been going on a considerable length of time, and perhaps should have been treated earlier (because the fibroid had been made out a considerable time before I saw it, made out by several good men, and the operation had been advised against). The result was that there were two pretty serious cases to deal with; whereas had they been opened early and some operation done, either a complete hysterectomy or myomectomy, it probably would have been a comparatively simple operation. I do not look upon this operation in quite so serious a light for a simple fibroid tumor. Where it is complicated it becomes a serious matter. Nor do I think the size makes so much difference. One of the easiest operations I have done was done in thirty-five minutes, the tumor large as a child's head. I remember seeing Dr. Richardson do one similar to it, and in his case there was almost the same condition. The operation was not at all obscure; he showed the vessels beautifully before he tied them; showed the ureter. Those are sometimes spoken of as unfavorable tumors to operate on, because large.

In my experience the toughest case I have had was a small tumor in which a woman had been bleeding for weeks. For some reason or other, either because I was slow or because it presented some difficulties I have not been able to fathom, that operation took an hour and a half, yet the tumor was not much larger than a lemon, but you could not get the uterus up in order to get it out, and I felt all the time as though I was working with the tips of my fingers. The patient made a good recovery, but there was a good deal of hemorrhage, more than there ought to be; in the ordinary abdominal hysterectomy it can be done, and has been over and over again, without spilling a whole teaspoonful of blood. The present method of clamping and tying as you go makes it a bloodless operation. There is no question it can be done more quickly and safely than by the vaginal route.

Dr. Burt: I have not much to say in regard to the subject, but am pleased with the paper, and especially with the remarks that Dr. Richardson has made. It seems to me that we ought to be very careful in the way of diagnosis and in judging of our case before we decide to do these hysterectomies. My experience is that it is a very serious operation; before going into it I am inclined to hesitate a little, and, unless the symptoms are very important, to wait or try other methods rather than surgery and give the patient a chance some other way if possible. The question of diagnosis I think is very important, and I do not find there is anybody able to make a diagnosis in these fibroid tumors satisfactorily enough so but what we mix them up with all sorts of conditions. Even sometimes after you get into the abdominal cavity, there is a great deal of difficulty in telling. The case I showed to-night illustrates the difficulty. I knew there was a pus-sac there, and yet it appeared (that case which had about two or three quarts of muco-pus) like a pregnant uterus after you got into the abdominal cavity. Inasmuch as it is so difficult to make out these cases before operation, and in fact at the time of operation, and is to my mind a very serious matter, I feel like hesitating a good deal, as Dr. Richardson has stated, before we go into these matters. It seems to me a good many cases have been done that ought not to be; and for that reason I feel like hesitating before going ahead, to be pretty sure there is not anything else that can be done for the case but the hysterectomy.

Dr. Englemann: I did not hear the first part of this paper, only the latter cases; but I do wish to congratulate Dr. Palmer on her success and on the fact that these cases were not subjected to operation until treatment had been tried. As Dr. Richardson and others have stated, the question of diagnosis is an important one; but it is impossible to decide upon operation unless very urgent indications exist, and when clear and distinct indications do not exist at the time, I believe that treatment should be tried. It is essential that the tumor be removed; it is essential that the patient be relieved and be made comfortable, put in a condition fit to attend to her duties; and I have seen those symptoms relieved so frequently that I take a far more conservative attitude and do not believe, as some do, that every growth, fibroid or myoma, is sufficient to indicate operative interference. The operation may be a simple one; but until we have opened the abdominal cavity we cannot say that, and we are always taking a chance. You know that among colored women we find many fibroids post-mortem, which have given rise to no symptoms — women who have been doing their work; we find them in death from acute disease from other causes; they have given rise to no symptoms which have seriously interfered with the woman's occupation, not incapacitated her or caused her extreme suffering. And again, they diminish in size; so that I feel the patient should be given a chance, treatment attempted, unless the operation is unquestionably indicated by serious symptoms at the time.

But I did not understand that hysterectomy was spoken of that is usually the supravaginal. I presume it was not complete hysterectomy in Dr. Palmer's cases or Dr. Richardson's. I should like to ask Dr. Richardson with regard to his experience as to the ligatures. I am in favor of the careful dissection, of the ligation of the vessels, and with the finest possible ligature. I have in former times used very heavy silk, and I have repeatedly found, after more or less time, the passing away of ligatures; and I will say that in the later 80's I have seen a good many of these cases, both on this side of the Atlantic and on the other, when it was more generally customary to use the very heavy ligatures. You all remember Tait's cord-like pedicle silk. But I have frequently seen the passing away through some part of the abdominal incision, through the cervical canal I think once or twice, in some cases through the bladder; and I should like to know from Dr. Richardson, who has seen so many cases, what his experience has been. I presume, of course, at present with few fine ligatures that is rarely the case. And I should also wish to hear his experience with regard to the total extirpation, which in some difficult cases certainly seems to give the better results and afford us that free drainage through the vaginal opening which we do not get by the upper incision.

Dr. Richardson: In reply to Dr. Engelmann I would say that we endeavor to put on as few ligatures as possible, and rather small silk. The uterine artery is tied by the same silk which we use in tying arteries in the breast operations. I have yet to be dissatisfied with silk. We use silk altogether, except in tying off a gangrenous appendix or in pus cases — we always use silk, and I think that I am safe in saying that we practically never have any trouble with it. I used from 1888 to 1892 silver for most purposes of suture; in fact, for five or six years, I used it in all my hernia cases. I think that we never had any trouble with it, but gave it up, I forget why. With silk there is a sensation of security, a firmness, especially against the slipping of the knot, which we do not get with catgut. I have used the largest silk in sewing up omental hernia. It gave no trouble. I have great faith in silk, and I see no reason for using anything else.

Dr. Theodore C. Erb read a paper on

CÆSAREAN SECTION.[2]

Dr. Washburn: I have been very much interested in listening to the account of the Cæsarean section, as it has been in line with several that I have done, where the labor had been going on some time, and efforts previously been made to deliver the child instrumentally. I think that there is no question as to the great additional safety of performing the operation without any previous interference. Where there has been no effort at delivery previously, where you make an operation of election, know the conditions and know you have got to face a contracted pelvis with its dangers, you can make the preparations and do the operation before the woman is exhausted or before the chances of sepsis are increased; but I think, as in the case Dr. Erb has reported, if the previous operations have been absolutely aseptic, the chances from a Cæsarean section are better than from any other operative interference. There is no question at the present day as to the inadvisability of doing a craniotomy or embryotomy on a living child. I think the men who would do that today are very few and open to the greatest censure. The statistics show a small mortality of the mothers; and, of course, the number of children saved is very large.

There are a few things in the technique of the operation which I think are worth speaking of, as being points that add to the ease of the operation and the success of it. It is always a valuable plan to wash out the uterus down through the vagina. I think it is always a desirable thing to remove the uterus from the abdominal cavity before making the incision in it, and packing sterile aseptic gauze or towels around the opening thoroughly so that no discharges can run down into the abdominal cavity while the uterus is being emptied. The placing of a rubber tube around the cervix is a precaution that I have always taken, but have never had occasion to use it, having one assistant always hold the vessels in the broad ligament with his hands. You have less danger of injury to the soft parts, less danger of disturbing the bladder, and you can control the hemorrhage absolutely. In three cases I have done, the incision through the median line has gone right through the placenta. The hemorrhage is not very great, a little rush of blood at first from the blood contained in the placenta. Another important thing, I think, is the leaving in of aseptic or antiseptic iodoform gauze in the cervix draining down into the vagina to insure a more perfect drainage of the uterine cavity and preventing a backing up against the stitches in the uterine wall. The stitches in the uterine wall should be of some material that will absorb if there is any question of a woman having any subsequent pregnancies. I think the leaving in of silk in the uterine wall where there is a possibility of a succeeding pregnancy adds to the risk of her abortion and to the dangers of the pregnancy if it goes to term. The material should be either chromicized catgut, which I have always used, or the kangaroo tendon, which is quite as good. One thing that I have found desirable is the having of an assistant competent to resuscitate the baby. It is not always an easy matter. The child is not only somewhat asphyxiated, but thoroughly etherized also; and it sometimes takes a good deal of skill to resuscitate the child.

The operation I think is one that has not been sufficiently esteemed; it is one that when done with care will, I think, give the best results in the contracted pelvis where the labor by ordinary means is impossible.

Dr. Englemann: I have been much interested in this paper and in the subject; and although Dr. Erb and Dr. Washburn have been successful in a class of cases which have hitherto not been attacked with the best results by this method, that is, the Cæsarean section during the progress of labor, after the attempt at forceps was vain, and whilst the gentlemen have been successful, I believe that such success has its dangers. I must confess I do not look upon those cases as cases for Cæsarean section. The results hitherto and in the hands of men who operate with a great deal of skill, such as Sänger, for instance, and Dr. Hirst, of Philadelphia, have not been the best — at least in such cases, and I will say in all their Cæsarean sections. Of course, many of those are cases already exhausted, under various conditions elective and otherwise; but I mean the general results, and especially the results after attempted delivery, have not been good. I think it is dangerous to judge from a few cases; and if Dr. Erb will permit me, I would like to refer especially to his case, which might serve as an example. Of course, we must eliminate at the present day all idea of craniotomy or embryotomy on the living child; but we have here a patient who has been confined without serious injury to herself a number of times; in all but one case the child was dead, but she was confined at full term of one living child. Now we know it is not a very much deformed pelvis without any measurements, and the doctor gives us the measurements. I should say, unless in the hands of an experienced surgeon, it was a case for induction of premature labor.

The advantages of symphyseotomy in such cases are that it can be attempted with much greater safety than Cæsarean section when delivery has been attempted either by forceps or version; and whilst statistics have been referred to, I think statistics are a variable guide, and at present they must still guide us in this. The statistics of symphyseotomy are much better than those of Cæsarean section. I am aware of not only the few cases mentioned from Vienna, but quite a number of successful cases of Cæsarean section without a death, and I would only mention Zweifel with one death. Now, he has fifty symphyseotomies without a death. In our own country I would mention Dr. Hirst, who is doing a great deal of this work. I heard from Dr. Hirst, a short time ago, that his Cæsarean sections were 18 per cent. or 20 per cent. mortality, whilst his symphyseotomies are much better; and yet his tendency is to Cæsarean section. It is the attractive operation, the operation that tells among the people. Symphyseotomy gives you no glory; but if it is a question of the results, that of symphyseotomy is still better, and I would say especially for the general practitioner, the man not familiar with abdominal work. You will find symphyseotomies reported here and there — successful ones — throughout the West by the country practitioner.

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[2] See page 346 of the Journal.

The first symphyseotomy in this country was done by a country doctor in Texas, and the example which is set in these discussions is not alone for the experienced surgeon, but for the practitioner at large, and a positive and rapid decision we must come to in those cases. Symphyseotomy can be with greater safety applied after labor has been attempted; and it is upon that very boundary-line where forceps may succeed if the child be a small one. Our measurements cannot guide us with that precision, and the country practitioner is not familiar with those methods. He knows his forceps have failed, version has failed, he cannot deliver, and the woman appears to be well built. He finds the head will not come down. Is he to resort to Cæsarean section? If he can do anything at all, it is his case for symphyseotomy; and if he does not feel competent to do that, he will still have to perforate. I eliminate embryotomy if it is a question of an abortion or of a surgeon; but it is still, I believe, to be kept in view by the practitioner removed from the centres unless he resort to a symphyseotomy, and I would, above all in a case such as we have mentioned here, urge that, as far as I can now see — and I think I have looked over the reports pretty thoroughly within the last six months. The results are still far better by symphyseotomy; and I look upon it as a dangerous tendency to see Cæsarean section invading this province, because it is an attractive operation which I believe many who are not fit to do it are likely to follow on account of the success of capable men.

The President: Was the child's head measured after delivery?

Dr. Erb: I did not see the child after delivery. We tried to get the head to engage, but failed. There was a history of several dead children, and the family were anxious to get a living child; and we thought we would do a Cæsarean. It was one of those cases just on the line, about seven centimetres, just a little less than three inches. Some might do a symphyseotomy. I thought, all things considered, Cæsarean offered the best chance for both lives. One might do a symphyseotomy, lose the child and save the mother. If you did Cæsarean, you might save both. To be sure you might lose the mother; but we were comparatively certain of our antiseptics and felt reasonably sure to save both. We tried moderate traction and gave it up. It took some time to get the things ready to operate; in the meantime the child's heart increased to 176. If you tried to drag the child through after a symphyseotomy with a fetal heart at 180, the chances are you would get a dead child. No doubt you would have to add forceps to the symphyseotomy and child would have to be delivered with mechanism. All things considered — the mother's age, the child's condition and the condition of labor — Cæsarean offered the best chance for both. The fact that both were saved seems to justify the procedure.

Dr. Boland: I have been very much impressed with what Dr. Englemann has said about the margin of error in pelvic measurements.

Some years ago I had a case in which at the first delivery, which occurred at eight months, I delivered a healthy child that only lived three days, and died from the difficulties of delivery, which was terminated by the forceps to the best of my ability.

As the woman was young, strong and healthy, I attended her again in her second labor, with good hope of a better result. This time she went to term. I did my best, and I gave her time enough without waiting too long. We got another dead baby.

When she became pregnant the third time, I had one of the best men in the city take her pelvic measurements and consider the question of Cæsarean section. This was at five months. He found the measurements, as he believed, ample, and advised me to do my best as before. I did so and with the same fatal result, in spite of my best efforts. When I reported the result to the consultant, he regretted that I had made lateral incision of the *labia*. This seemed to me impertinent, as I am unwilling to believe that any child lost its life at my hands by rigidity of the soft parts at the outlet.

The point I want to make is simply this: if an expert fails in such a case, either the margin of error is too great or other conditions of the mother's parts not appreciable by pelvimetry make it too uncertain to be depended upon in an otherwise doubtful case.

Dr. Washburn: In that regard I remember a conversation that took place among a number of men who had seen the same case. Each one had taken the pelvic measurements; all were good obstetricians, but their measures varied three-fourths of an inch between the two extremes.

Dr. Burt: It seems very desirable to be able to report a successful case, and Dr. Erb has been fortunate in having such a one; but it seems to me there are the same conditions to consider in regard to this matter we have in all other cases of abdominal surgery, that a great deal of care is necessary, a great deal of judgment before you decide what to do and do anything, as important as that operation is. I am inclined to think that a great many cases have been performed simply for the glory of it without proper conservative judgment being used. On the other hand, I should say there have been cases in which the child or mother, or both, have been lost where operation ought to have been performed. I look back upon one or two early cases in which the child was lost that I feel pretty sure could have been saved by Cæsarean section, might have been by symphyseotomy. In those days that had not been considered so much as recently. It seems to me that it ought to be a pretty satisfactory operation if properly performed, if necessary. I should feel inclined not to advise it unless absolutely obliged to. Again, it is a fact that a good many of these cases are in the hands of men who have not done that kind of work. They are in country places and cannot get assistance. It would be hard in a good many instances to get two physicians; and consequently it seems to me that a good many of the men who would be called upon to do that sort of work could not do it, and there are other methods which would be preferable.

In regard to pelvic measurements, I think in most cases it happens about as Dr. Washburn has expressed it. I don't believe any two men can measure any pelvis alike, and I don't believe they ever did. I know a good many cases in which they have not been measured properly at all; and I have had some experience with cases in which it has been stated there were contractions of the pelvis when there were no contractions, other cases considered as normal when there were contractions. So far I have not seen a contracted pelvis that demanded Cæsarean section.

I saw a case some time ago of a lady who had been delivered by a skilled obstetrician, and the case had been considered a difficult one. This lady was told she had a contracted pelvis, and should not attempt to have another child. She came to another physician who asked me to see the case with him, and another physician was present and made examination. We found she was pregnant about three months. She asked to have the uterus emptied. We refused to do it because there was no occasion for it. She said, "Will you have a consultation at seven months and do it then?" We replied, "We will have a consultation if you wish, but we will tell you now that we will not do that because the pelvis is perfectly normal." The child developed to full term, as I understood it, a full-sized child; and the child was born before the physician had time to get there.

That illustrates a large class. I have seen a number of women who said physicians had told them they could not have children. I have yet to find a case that could not after getting started; some of them do not get pregnant, but having got pregnant they have gone through.

About three months since a certain case came under my notice that had been diagnosed as pregnancy. There was no question about it; a lady of thirty-nine, had had thirteen children. The fourteenth was on the way, and it was not far from four months' pregnancy from all indications. The cervix was as high as you could reach, and the body flexed and so tight it was immovable through the vagina. There was a bunch as big as a child's head ought to be at full term above and to the left of uterus. I did not see how it was possible to make out anything but a cystic tumor. She was suffering intensely, and it was decided we must do something; and the decision in that case was abdominal section. The uterus was so firmly adherent down to the sac it was very difficult to raise it; and when we did it went off like a gun, quite an explosion. In that case I did not see any way out of it, as the uterus was so highly congested and the child dead, except to remove the contents and the uterus altogether; and I performed a total hysterectomy. The mother recovered, and is now in fine physical condition.

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Recent Literature.

Diseases of Women. By George Ernest Herman, M.B. Lond., F.R.C.P. Pp. 886, 252 illustrations. New York: William Wood & Co. 1898.

This is a very individual work. Its arrangement is somewhat peculiar, being rather symptomatic than classical.

The author devotes himself mainly to the practical side of the specialty. The tone is conservative, and there are some matters of treatment which will not be certain to meet the approbation of American gynecologists; but the book as a whole is evidently the work not only of a widely experienced practitioner but of a highly skilled teacher, and will undoubtedly prove of much value.

THE BOSTON

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THE ACCIDENT NEUROSES OF WAR.

As we face the present situation of affairs with regard to a possible war with Spain, it is of interest to consider what some of the outcomes of such a conflict would be from a purely medical point of view. If the crisis which seems imminent should result in actual hostilities, it is evident that we shall be brought face to face with conditions for which we have no adequate precedent. The warfare will be carried on chiefly at sea by means of engines of destruction of whose capacity we have little knowledge. It is certainly not our purpose to discuss the efficiency of the modern war-vessel in actual service, but rather to speculate, with what knowledge we have, in the first place, as to the destruction of human life and in the second place, as to the more or less permanent injuries which the participants are likely to carry away from a conflict.

The experience narrated to us in the late Chinese-Japanese War is still more or less vividly before our minds; and from this one engagement — the battle of Yalu — we may form some conception of the physical and mental effects of a naval battle. Should the navies of the United States and Spain actually clash, we cannot but suppose that the results would be infinitely more disastrous than in the now famous battle of the Yalu. In that engagement, apart from the actual loss of life which must necessarily always occur, there were certain subordinate injuries which excited the general interest of the medical world. Notable among these were the effects of concussion upon men confined in limited spaces — deafness, for example, and more or less serious injuries to the hearing apparatus of various sorts. In the unfortunate death and antecedent illness of the officer to whom we owe our best descriptions of the fight, we have exemplified a class of injuries which we must regard in great measure as dependent upon modern methods of naval warfare.

It is to this latter series of possible conditions to which we desire to draw particular attention, and to the effects upon the nervous system in general. In these latter years when trauma has come to play so important a part in the etiology of certain nervous affections, we have often heard the query as to the effect of a great battle upon the nervous systems of the surviving combatants. So far as we are aware, no really satisfactory answer has been given to this query; for the reason, no doubt, that no observations have ever been made. Even at the battle of the Yalu no valuable statistical report as to the later effects of actual injury, or so-called nervous shock, have been reported.

We are all painfully conscious of the fact that a gas explosion or an accidental railway accident leads to consequences which seem to have no end. Neuroses of the most varied sort are forthwith born and grow to quite hopeless proportions as the years go by. Are we to suppose that men cooped up in extremely small spaces, stormed at from without by projectiles of enormous force, and subjected to terrific concussions of their own armament, should not suffer a like nervous derangement? The potential active life of men serving on torpedo boats or torpedo-boat destroyers is said to be a very short one — a maximum of three or four years. It is hard to conceive a position of greater nervous tension associated also with an element of extreme danger to life.

The question is really one of very vital interest in the present state of our endless discussions as to the real nature of these now so common nerve disorders; and yet whatever the outcome, as regards the nervous systems of the combatants, we should do well to be cautious in drawing conclusions. In the first place it is clearly evident that the element of surprise, of suddenness, of unexpectedness, is almost entirely lacking in the case of the sailor, whose whole training has in a measure fitted him for the ordeal of an actual engagement. He enters the fight consciously and with every possible preparation for all the horrors which may be in store for him. He is to a certain extent used to the reverberation of heavy artillery; and, more important still, he has deliberately chosen his lot. To the victim of the railway disaster, on the other hand, there is no possibility of preparation; he is plunged from a state of peaceful security into a chaos of emotions which he cannot at once understand and whose possible outcome is quite beyond his knowledge. This difference must be of the most extreme importance in its effects upon the nervous system, but exactly how important only a careful statistic, not yet forthcoming, can tell.

Another element in our supposed problem is one in which the two classes of cases may stand on a more common footing. We are forever hearing that the prospect for damages is the vital stimulus which brings on the nervous disorders of the railway victim. Under this theory, we must hold that we have become so innately mercenary that the thought of a pecuniary remuneration takes precedence of all others, at the very moment of the accident. It is at least conceivable — and we say it without the slightest disparagement to the members of the navy — that a like thought may have a certain weight in determining the outcome of accidents in war. We learn that the pension list is growing larger rather than smaller; and may it not be that this subtle influence may come in as never before to determine, in a measure at least, the outcome of traumatic nervous affections originating in time of battle? It should be remembered, however, in the case of the marine, that there is the strongest stimulus so long as a war lasts, to a speedy return to health, in order that his gallantry may be rewarded by a promotion to a higher grade of the service.

In the light of the recent disaster to the *Maine*, and from the knowledge we are every day gaining of the enormously destructive effects of the torpedo and submarine mine, it is evident that modern naval warfare is assuming more and more the character of the unexpected. We may, therefore, expect to see in this regard, a continually closer analogy between the accidents of war and those of peace, a consideration which will make future war statistics of greater value in the study of the neuro-psychoses.

From all this it must appear, that while certain analogies are apparent between the traumata of private life and the traumata of war, nevertheless, deductions based on such analogies should be carefully regulated by a study of the essential differences, so far as they exist, between the two cases. As we too well know, the whole matter of the traumatic affections of the nervous system is as subtle as any problem with which we have to deal in the whole realm of medicine. Suggestions, however, are always legitimate, and these remarks are only offered as such. In the unfortunate event of war, it is surely to be hoped that this compensation may at least be gained, that we may learn something more definite as to the immediate and remote effects of the nerve strain induced by a modern naval conflict.

◆

LITTLE HAMMERS FOR SUTURE OF THE BILE DUCTS.

The suture of the normal common bile duct has been generally regarded by surgeons as inadvisable because of the delicacy and small calibre of the duct and the depth of the wound in which the operation must be performed. It has been regarded as almost impossible to prevent leakage, and to avoid danger of occluding the duct by too extensive infolding of its walls. Suture has therefore been attempted only upon ducts which had been dilated by accumulation of bile behind a stone and thickened by recurrent attacks of inflammation. The dangers of postponing operation beyond a reasonable time are well known, the retarded blood coagulation and consequent danger from hemorrhage in cases of long-continued jaundice are evident, the hypertrophy of the liver, and the cholemic or infectious toxemia, which result, are conditions which may greatly retard recovery from operation, or render the operation immediately fatal.

Halsted[1] has made a special study of the suture of the common duct, and advocates the incision of one or two ribs and the diaphragm in cases where hypertrophy of the liver or its small size and consequent depth beneath the diaphragm render the wound inconveniently deep. To facilitate suture of the ducts he has devised a little hammer with a long and slender handle, which is attached to the head near one end instead of in the middle. The duct is incised near its duodenal end, between two presection stitches. It is then explored and cleared of stones, and while the edges of the incision are lifted by the stitches, the little hammer is introduced. By lifting the handle, the duct may be raised from its bed and drawn toward the operator, while the mattress sutures employed to close the incision are placed. The hammer is then withdrawn and the sutures tied. Halsted has by means of the hammer or a similar device sutured the common duct five times in dogs, and the common duct twice and cystic duct once in operations on the human subject. He claims the following advantages of the hammer:

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[1] Philadelphia Medical Journal, April 2, 1898.

> (1) The duct to be sutured can be drawn towards the incision in the anterior abdominal wall and within easy reach of the operator; it can also be manipulated nicely by the hammer.
>
> (2) The duct, whether normal or thickened and dilated, is gently expanded by the hammer; hence the stitches can be taken with great accuracy and without fear of including the opposite wall or of occluding the lumen of the duct.
>
> (3) The operation is a very clean one, because the hammer blocks the duct and this prevents the escape of its contents and the contents of the gall-bladder.
>
> (4) With the hammer, wounds of thin normal ducts can be easily and almost infallibly sutured, and hence the surgeon may, if he chooses, fearlessly operate upon the common duct as soon as the obstruction takes place.
>
> The sewing of the thickened and dilated ducts is also greatly facilitated by the employment of the hammer.

The hammers are certainly an ingenious little device, and ought to facilitate suture of the ducts.

The suggestion, to cut through the diaphragm in order to gain room for suture, credited to Lange, and adopted by Halsted with "gratifying results," is certainly a bold procedure. Excellent recoveries are, as is well known, made after incision of the common duct without suture, and whether for the sake of accurately suturing the duct, which is a refinement and by no means an essential procedure, it is worth while to run the risk of weakening so important a muscle as the diaphragm seems open to grave doubt. Halsted in his paper has given no statement of the immediate or final results in the cases in which he has divided the ribs and diaphragm and sutured the duct in the human subject.

MAINE VIEWS ON THE ANTIVIVISECTION BILL.

> "We wish to urge upon our professional brethren in our neighboring State of New Hampshire the pressing necessity of doing all in their power to hinder and defeat the passage of Senate Bill 1063 now pending in Congress, and which ostensibly claims to regulate the practice of vivisection in the District of Columbia but whose real purpose is to prohibit and prevent it.
>
> "The questions demanding solution at the hands of chemists, physiologists, pathologists and bacteriologists are of such importance to the medical profession and to the whole human family that any attempt to 'regulate' or to hamper and prevent experimentation tending to elucidate the problems awaiting solution, should receive the prompt condemnation and opposition of all medical men and scientists the world over.
>
> "The State Medical Society of New Hampshire has already stamped this bill with its disapproval, but it is necessary that something more than this be done. Physicians must give this matter their personal attention. Personal effort is now necessary. If every physician in New Hampshire and the rest of New England would personally interview the members of Congress from his own State, and express to them his opposition to the bill, a great force would be brought to bear which would ensure the defeat of this hysterical and foolish legislation."

The above editorial from the *Journal of Medicine and Science* is especially timely when we consider the fact that Senator Gallinger, formerly a (homeopathic) medical practitioner in New Hampshire, is the promoter and advocate of the bill.

MEDICAL NOTES.

A Ministry of Public Health in Russia. — It is reported that in Russia a separate ministry for public health is to be established.

A Medical Candidate for Mayor. — Dr. William M. Mack has been nominated for Mayor by the Republicans of Elizabeth, N. J.

A Japanese Medical College Destroyed by Fire. — On March 20th the medical college of the Imperial University at Tokio was destroyed by fire.

A Laboratory of Hygiene. — The government of Würtemberg has just authorized the erection of a laboratory of hygiene in connection with the medical department of the University of Stuttgart.

The American Electro-Therapeutic Association. — The American Electro-Therapeutic Association will hold its seventh annual meeting at Buffalo, September 13, 14 and 15, 1898, under the presidency of Dr. Charles R. Dickson, of Toronto.

A Faithful Nurse Decorated. — The Cross of the Legion of Honor has been conferred upon Mlle. Marguerite Bottard, who, for more than fifty-six years, has served faithfully as nurse and superintendent in the Salpêtrière Hospital in Paris.

Proprietary Medicines. — Of 217,000 prescriptions written in Chicago, New York, Boston, Washington, Baltimore, Denver, San Francisco, New Orleans and St. Louis 11.25 per cent. called for proprietary articles. — *International Medical Magazine.*

Typhoid Sufferers Sue Water Company. — It is reported that several hundred of the sufferers in the recent typhoid epidemic at Maidstone, Eng., have decided to bring a combined action against the water company to obtain compensation for the losses which they have sustained.

For the Presidency of the British General Medical Council. — Sir William Turner, who holds the chair of anatomy at Edinburgh University, has been asked to allow himself to be nominated for the presidency of the General Medical Council, vacant by the death of Sir Richard Quain.

A Hospital Ship. — The *Creole*, a large and handsome vessel sailing between New York and a Gulf port, has been selected by Surgeon-General Van Reypen, of the navy, for use as an ambulance ship, and has been taken in charge by the government and sent to Newport News, Va., to be fitted there for hospital purposes.

Death at the Age of One Hundred and Six. — Mrs. Rebecca Van Zandt died in Seneca Falls, N. Y., on April 10th, at the age of one hundred and six years. Records in the possession of the family show that she was born in Albany in May, 1793. She retained her faculties in a remarkable degree and last summer visited Albany alone.

Contamination of Rivers to be Investigated. — A bill has been introduced into the United States Senate by Mr. Cockrell providing for an appropriation of $3,000 for an investigation to be made by the Marine-Hospital Service of the source of contamination of rivers and other natural sources of water-supply where the sanitary condition of the people of more than one State or Territory is affected, or threatened to be affected, by such pollution.

Plague in the East. — Cases of plague have been reported at Jeddah, the port of Mecca on the Red Sea. The Turkish Government has officially notified the Egyptian authorities that three deaths from plague have occurred at Jeddah. In Egypt the Quarantine Council decided on March 26th to apply the plague regulations against arrivals from Jeddah. By the latest reports eleven cases of plague have occurred at Jeddah, of which seven proved fatal.

The Divine Healer beyond Kansas Law. — The Kansas State Board of Health recently applied to the attorney-general for a decision concerning the enforcing of the medical-practice law in that State. His decision was that magnetic healers, hypnotists, and all the other quacks except divine healers can be prosecuted, but that since the divine healers claim their power to come from Jehovah the rights and privileges of Jehovah can in no way be regulated or restricted by the statutes of Kansas, and therefore the medical-practice law cannot be enforced against them. A Daniel come to judgment!

Three Cases of Tetanus Treated by Antitoxic Serum. — Suter[1] reports a mild case of tetanus in which the injections were begun on the twenty-seventh day after the injury, and the sixteenth after the appearance of symptoms. Gradual recovery took place. Two other severe cases, in which the injections were begun three and four weeks after the probable dates of infection, and eighteen hours after the appearance of the symptoms, ended fatally. Although from these cases there is no evidence that the serum treatment had any effect on the course of the disease, the treatment was begun so long after the infection as to render a fair test of the antitoxin impossible. In addition to the serum treatment local measures directed against the further absorption of toxins should be taken, and general narcotics should be administered in order, as far as possible, to protect the organism from the action of the poison already absorbed.

An Appetite for Pins. — Mr. Thomas Annandale, in a recent number of the *Scottish Medical and Surgical Journal*, reports the case of a boy, aged twelve, an inmate of an industrial institution, who was admitted into the Edinburgh Royal Infirmary under the author, with the history that he had confessed to swallowing some pins, but as he had no symptoms save a slight pain in the epigastrium, his story was doubted. The day after his admission a dose of castor oil was given, but produced no result. Two days later a second dose was given, and after the bowels had acted, there were found embedded in the stools several pins, some straight, some bent. During the next two weeks, doses of oil were given every second or third day, and with each stool foreign bodies, consisting of pins, nails, etc., were passed. After this the procession of foreign bodies ceased, and the boy was sent back to the institution quite well. The following is the list of the bodies discharged *per rectum:* 52 pins, 1 needle, 5 hobnails, 3 springs, 1 collar stud, 4 carpenter's nails, 3 brass boot-nails, 1 staple. The boy showed no signs of any special mental condition, and the only explanation that he could give of his swallowing "feats" was that he had been playing magic to amuse his companions.

A Conjurer's Story. — The following story is quoted by the *London Chronicle* from the *Ceylon Independent:* "It was at a quiet party, and Carl Hertz, the famous conjurer, had been delighting the company — especially the ladies — with many of his finest tricks. One of the parlor-maids had been passing in and out with cups, cakes, glasses, and so on. She was much interested and when the hostess gave a sign that nothing more was needed the girl still lingered on to see the completion of the trick just begun. 'Will some one oblige me with a heavy shawl or cloak?' he said. 'Now,' selecting a big cashmere shawl, 'you observe the thickness of the shawl?' They all did, breathlessly, including the maid. 'Now, will one of you be good enough to write a number of three figures on a piece of paper, being careful not to let me see what is written?' With trembling fingers one of the girls did so, while the maid at the door leaned forward and began to breathe hard. 'Now, place the written paper with the figures on the upper side under the shawl as I hold it.' It was done, the thickness of the shawl being between Carl Hertz and the paper as he looked down toward it. There was breathless silence. Then he said, 'Surely the number is 761.' It was. He had apparently seen right through the thick shawl. Every one was dumfounded. Then upon the silence broke the shriek of the maid at the door. With one final gaze at the shawl and one at the handsome conjurer, she hid her rosy face in her hands, yelling at the top of her voice, 'What's the good of me clothes?' and fled."

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[1] Korrespondenzblatt für Schweizer Artzte, No 17, 1897.

BOSTON AND NEW ENGLAND.

Unlicensed Medical Practitioners. — The Massachusetts Board of Registration in Medicine is active in enforcing the law against the practice of medicine by unlicensed practitioners. Last week Charles Ziemann of South Boston was fined one hundred dollars by Judge Fallon for practising without a certificate. He had been convicted before. On Thursday there were three cases before Judge Adams, those of Dr. Charles S. Dennis. Dr. Ethel Hall and Dr. Catherine MacIntyre, all of Boston.

The House of the Good Samaritan. — The thirty-seventh annual report of the House of the Good Samaritan, for the year 1897, shows that during the year 203 patients were treated at that institution. During the year a comparatively small number of children were admitted, on account of the successive appearance of scarlet fever, mumps and diphtheria in the children's ward. Examinations by the board of health showed that the house was in perfect sanitary condition, and that these diseases were undoubtedly brought in from outside. The adult wards were not invaded by these diseases, and the usual number of adults was admitted. The financial condition of the institution has remained excellent, and, in the words of the secretary, "a gracious bounty has steadily flowed into our treasury." The treasurer's report shows three additions to the permanent fund: a bequest of $2,000 from Mrs. Francis W. Palfrey, one of $5,000 from Mrs. Thayer, and a third of $2,000 from the Secretary, Anne S. Robbins.

NEW YORK.

Resignation of Dr. James W. McLane. — At a meeting of the Board of Trustees of Columbia University held April 4th, the resignation of Dr. James W. McLane as Professor of Obstetrics was tendered and accepted, and a minute of the Faculty of Medicine expressive of its grateful appreciation of Dr. McLane's services to the school and regret at his determination to relinquish his professorship was recorded. Dr. McLane has occupied the Chair of Obstetrics in the College of Physicians and Surgeons ever since Dr. T. Gaillard Thomas resigned the position, and for a number of years has been President of the Faculty. It will be remembered that it was through his offices that the splendid benefactions to the school by the late William H. Vanderbilt and his children were obtained.

Medical Appointments at Columbia. — At the same meeting of the Trustees, Dr. Edwin B. Cragin was appointed Lecturer on Obstetrics and Director of the Sloane Maternity Hospital, and William C. Andrews, Assistant Professor in Physics; while Charles E. Pellew, who has for a number of years been associated with Professor C. F. Chandler, was made a member of the Faculty as Adjunct Professor of Chemistry.

Trained Nurses for the Hospital Ship. — The Graduate Nurses' Protective Association of the State of New York, which is now a regularly incorporated body, has tendered the services of twenty of its trained nurses for duty on board the steamer *Creole*, recently of the Cromwell line, which the government is fitting up as a hospital ship, and the Medical Department of the Navy, through General W. K. Van Reypen, has signified its acceptance of the offer. The young women, when on duty, will wear a navy-blue India-silk waist and skirt, with a white apron.

Dr. Billings and the New York Hospital Library. — It is stated that Dr. John S. Billings, Superintendent of the New York Free Library, Astor, Lenox and Tilden Foundations, was approached by the authorities of the New York Hospital as to the desirability of incorporating its library with the collection of that institution, and that Dr. Billings unhesitatingly recommended that it should be donated to the New York Academy of Medicine, which he thought was the most appropriate body to have this library in its possession. Public acknowledgment of the services of Dr. Billings in obtaining the library for the Academy was made at the last meeting of the Academy, on April 7th, by Dr. Wm. M. Polk, in moving a formal vote of thanks to the Government of the New York Hospital Society for their munificent gift. In his remarks Dr. Polk stated that the Government, in addition to the gift of their invaluable library, had generously appropriated a sum sufficient to defray the expenses of moving the books and setting them up in the Academy's building. The old Thorne mansion, on 16th Street, which has been utilized for the accommodation of its library ever since the New York Hospital removed from its old site at Broadway and Pearl Street, is to be torn down in order to make room for another extension of the hospital building from 15th Street.

Explosion in a Drug Store. — An explosion of extraordinary character and great violence occurred on April 6th at a drug store on Greenwich Street, from the compounding of a prescription which is said not to have been ordered by a physician and to have been composed of chlorate of potassium and salicylate of sodium. As a result of mixing the ingredients in a mortar the shop was badly wrecked — the damage being estimated at $1,500 — and the clerk who was doing the mixing was seriously injured and is now under treatment at St. Vincent's Hospital.

Dinah Sutton. — Dinah Sutton, colored, who is stated to have been the last survivor of the New Jersey slaves, died at the home of her daughter in Paterson, N. J., on April 3d. She was born in Monmouth County in 1792, and on the 18th of December last celebrated the 105th anniversary of her birth. She is currently reported to have enjoyed the extraordinary distinction of having been "courted by General Washington's coachman." This suit was apparently unsuccessful, however, as she married another admirer, by whom she became the mother of thirteen children.

The Low Mortality Continues. — The mortality of the city continues very low for the season of the year, there being only a very slight increase in the number of deaths in March over those in February. For four weeks in March the annual death-rate per thousand of the estimated population averaged 18.79 against 18.46 for four weeks in February. Exclusion of the Bronx, in which the large number of institutions raise the death-rate abnormally, the Borough of Brooklyn continues to have the largest mortality and that of Richmond (Staten Island) the smallest. In the week ending March 27th the death-rate in the respective boroughs was as follows: Manhattan, 18.94; The Bronx, 30.45; Brooklyn, 20.01; Queens, 16.71; Richmond, 12.86. Measles is still the most prevalent of the contagious diseases, and in four weeks in March there were reported 2,513 cases, with 100 deaths, against 2,167, with 76 deaths, in four weeks in February. None of the other contagious diseases is nearly so prevalent as measles, and none of them shows any special increase. In the week ending March 12th there was reported one case of small-pox, the third since the beginning of January, but there has been no death from the disease thus far in the year. As customary in the months of winter and early spring, pneumonia is the disease that causes by far the largest number of deaths. In four weeks of March the mortality from it averaged 200 a week, while that from pulmonary tuberculosis in the same period averaged 155 a week.

Miscellany.

MULTIPLE NEURO-FIBROMATA OF THE CERVICAL SYMPATHETIC.

"Although reports of cases of neuro-fibromata of the spinal nervous system are common in medical literature, of the sympathetic system but few cases have been recorded, and those are in post-mortem reports," writes Abbe in the current number of the *Annals of Surgery*.

Prudden[1] collected records of 40 cases of multiple neuromata, some of which at autopsy showed involvement of the various portions of the sympathetic.

Virchow cites a case of Schonlein, near Würzburg, of multiple neuromata, in a twenty-year old girl, where there were neuromata in the spinal nerve-roots, and also the upper sympathetic ganglion was enlarged into a tumor two by three inches in size, in connection with thickened and knotty nerves.

A case was presented by Dr. Satterthwaite before the New York Pathological Society, in June, 1880,[2] of multiple neuromata involving cortical, spinal and sympathetic systems. Here there were very extensive tumors of the sacral, lumbar, cardiac and esophageal plexuses, and the cervical sympathetic. This is about the only case in literature of a true neuroma of the sympathetic.

A case was recorded by Reynold[3] of multiple neuromata of very wide extent, and on autopsy found to involve the sympathetic trunks and branches.

The case reported by Abbe of operation for neurofibromata of the cervical sympathetic is of great interest and undoubtedly unique.

The patient, a girl nine years of age, presented a moderately large tumor of the lower third of the right side of the neck, which was at first thought to be a lymphatic growth; but later when it was found that it was beneath the sterno-mastoid muscle and carotid sheath, it was considered most probably an obscure tumor of branchial origin. The tumor had been noticed only two months and had given no pain. It was egg-shaped, and extended upward from the right clavicle at its sternal end to the level of the hyoid bone.

At operation the sterno-mastoid was drawn outward and the jugular and carotid artery inward. The tumor was easily isolated, was found to be as hard as cartilage and embedded in the cellular tissues behind the great vessels. Branches of various sizes extended from it upward into the neck, and others downward under the clavicle, in a manner resembling the roots of a tree. A branch as large as a lead-pencil led down behind the sternum to a growth of similar type as large as an English walnut, and the upper branches led to a corresponding bulbous expansion beneath the base of the skull. Anatomically the network of branches leading from these tumors followed the distribution of the cervical sympathetic nerves.

The only unilateral symptoms following the operation, from which the patient made a good recovery, were a persistent narrowing of the right pupil, and suffusion of the conjunctiva. The contraction of the pupil remained five months after the operation.

The pathological report by Dr. Ewing of the Department of Pathology, of the College of Physicians and Surgeons, showed the growth to be a fibro-sarcoma of the nerve trunks.

The absence of pain in the tumor, and of other unilateral symptoms, such as flushing of the face, furring of the tongue, etc., following the operation, are points of great interest in connection with this remarkable case.

THE DIMINISHED RUSH INTO THE MEDICAL PROFESSION.

Is it safe to assume that at length the somewhat wild rush by young men into the medical profession is to be moderated? We ourselves do not mean to be rash in making this assumption. Meantime we take the facts for what they are worth, as recorded in the "Medical Students' Register" just issued. In the year 1897 the medical students registered were, in England, 828; in Scotland, 504; and in Ireland, 210. There was a decrease, as compared with 1896, of 199. The numbers in 1896 again were less than those of 1895 by 97. We must go back twenty-one years, to 1876, for so low a registration number as that recorded last year — namely, 1,479. The numbers have been several times over 2,000 — as in 1879, 1880, 1881, 1889 and in 1891, when they reached the appalling number of 2,405. Since 1865, the commencement of students' registration, 50.15 per cent. of the total number of registrations have been in England, 30.5 in Scotland and 19.5 in Ireland. The diminution last year was proportionately greater in Ireland than in Scotland or in England. We cannot affect to regret the signs of arrest in this rush into the profession. Medicine is not improved by crowds competing for a livelihood. — *Lancet.*

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[1] American Journal of the Medical Sciences, vol. lxxx, p. 134.
[2] New York Medical Record, 1880, vol. xvii, p. 239.
[3] Manchester Chronicle, 1896–97, p. 185.

METEOROLOGICAL RECORD

For the week ending April 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..27	30.61	40	44	36	96	88	92	N.E.	E.	6	8	F.	C.	
M..28	30.54	39	45	33	84	60	72	N.E.	S.E.	4	9	F.	O.	
T ..29	30.34	48	53	42	77	86	82	S.	S.W.	5	6	O.	F.	.03
W..30	30.12	45	48	42	92	96	94	W.	E.	6	4	R.	O.	.30
T ..31	29.90	38	43	33	100	59	80	N.	N.W.	24	17	N.	O.	.41
F....1	29.98	46	40	33	41	49	45	N.W.	N.W.	22	12	C.	C.	
S....2	29.92	37	46	28	40	100	70	W.	N.W.	8	6	C.	N.	.09
☞	30.20		45	35			76							.83

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 2, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York	3,438,899	1276	450	12.72	20.16	1.20	4.88	2.40
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	448	140	14.96	14.30	1.76	5.72	.66
Brooklyn	1,160,000	—	—	—	—	—	—	—
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	219	70	8.55	18.90	1.80	3.60	.90
Boston	517,732	214	65	7.05	25.85	—	2.82	—
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	101	38	8.00	13.00	1.00	2.00	—
Pittsburg	285,000	—	—	—	—	—	—	—
Washington	277,000	93	20	14.04	3.24	—	1.08	—
Milwaukee	275,000	—	—	—	—	—	—	—
Worcester	105,050	43	21	16.31	11.65	4.66	—	2.33
Nashville	87,754	25	4	8.00	20.00	4.00	—	—
Fall River	95,919	33	20	6.06	9.09	6.06	—	—
Lowell	87,193	31	9	3.23	19.38	—	—	—
Cambridge	86,812	27	3	11.10	33.33	3.70	3.70	—
Lynn	65,220	16	3	12.50	6.25	12.50	12.50	—
Charleston	65,165	—	—	—	—	—	—	—
New Bedford	62,416	18	5	5.88	11.76	5.88	—	—
Lawrence	55,510	17	12	—	17.64	—	—	—
Springfield	54,790	18	0	—	10.00	—	—	—
Holyoke	42,364	8	5	—	12.50	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Salem	36,062	18	4	5.55	5.55	—	—	—
Brockton	35,853	8	2	—	—	—	—	—
Malden	32,894	6	1	16.66	16.66	—	—	—
Chelsea	32,716	7	1	14.28	—	11.28	—	—
Haverhill	31,406	6	2	—	16.66	—	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	10	2	10.00	10.00	—	—	—
Taunton	27,812	10	1	—	—	—	—	—
Quincy	22,562	9	2	—	11.11	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	6	3	—	33.33	—	—	—
Everett	21,575	2	0	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Newburyport	14,794	6	0	—	16.66	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,747; under five years of age 906; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 307, acute lung diseases 497, consumption 331, diphtheria and croup 109, measles 42, diarrheal diseases 37, scarlet fever 36, typhoid fever 31, whooping-cough 23, cerebro-spinal meningitis 22, erysipelas 7.

From measles New York 21, Philadelphia 12, Boston 2, Baltimore and Cleveland 1 each. From whooping-cough New York 13, Philadelphia 5, Providence 2, Boston Cincinnati and Washington 1 each. From cerebro-spinal meningitis New York 8, Boston 4, Worcester 3, Baltimore 2, Washington, Cambridge, Lynn, Holyoke and Malden 1 each. From erysipelas New York, Philadelphia and Boston 2 each, Worcester 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending March 26th, the death-rate was 20.2. Deaths reported 4,342; acute diseases of the respiratory organs (London) 402, measles 242, whooping-cough 123, diphtheria 82, scarlet fever 42, diarrhea 30, fever 29, small-pox (Leeds and Sunderland one each) 2.

The death-rates ranged from 14.5 in Blackburn to 31.2 in Swansea; Birmingham, 19.2, Bolton 19.2, Bradford 25.4, Derby 12.9, Gateshead 19.1, Hull 20.6, Leeds 18.3, Leicester 17.2, Liverpool 23.0, London 20.0, Manchester 18.9, Newcastle-on-Tyne 19.9, Sheffield 19.9, Sunderland 22.5, West Ham 18.2, Wolverhampton 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 2, 1898, TO ARPIL 8, 1898.

So much of the order as directs **Captain Paul Shillock**, assistant surgeon, to proceed to Key West, Fla., and report to the commanding officer, 25th Infantry, is amended so as to direct him to proceed to Chickamauga, National Park, and report to the commanding officer of that regiment for duty with the first detachment thereof that may proceed to take station at Fort Jefferson, Fla.

The order assigning **First-Lieut. Bailey K. Ashford**, assistant surgeon, to station at Fort Sam Houston, Tex., is revoked, and he is ordered to Fort St. Philip, La., for duty at that post.

Captain Joseph T. Clarke, assistant surgeon, is relieved from duty at Columbus Barracks, O., and ordered to Madison Barracks, N. Y., for duty, relieving **Captain Paul Shillock**, assistant surgeon.

Captain Shillock, upon being so relieved, will proceed to Key West, Fla., and report to the commanding officer, 25th Infantry, for duty with that regiment.

First-Lieut. George Rauchfuss, assistant surgeon, resigned April 2, 1898.

Captain Edward Everts, assistant surgeon, upon the abandonment of Whipple Barracks, Ariz. Ty., is ordered to Fort Apache, Ariz.

First-Lieut. Alexander S. Porter, assistant surgeon, is relieved from duty at Whipple Barracks, Ariz., and upon expiration of his present leave of absence is ordered to San Diego Barracks, Cal., for duty.

The order assigning **First-Lieut. George Rauchfuss**, assistant surgeon, to Fort Apache, Ariz. Ty., is revoked.

Leave of absence for four months, on surgeon's certificate of disability, to date from his arrival at the Army and Navy General Hospital, Hot Springs. Ark., is granted **Major Henry McElderry**, surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING ARPIL 7, 1898.

Murray, R. D., surgeon. To represent Service at Quarantine Conference at Atlanta, Ga., April 12, 1898. April 7, 1898.

Austin, H. W., surgeon. Detailed for temporary duty in Bureau. April 1, 1898.

Mead, F. W., surgeon. Granted leave of absence for seven days. March 30, 1898.

Carter, H. R., surgeon. To rejoin station at New Orleans, La. March 31, 1898. To represent Service at Quarantine Conferences at New Orleans, La., April 8, 1898, and Atlanta, Ga., April 12, 1898. April 5, 1898.

Peckham, C. T., passed assistant surgeon. Granted leave of absence for twenty-nine days. March 30, 1898.

White, J. H., passed assistant surgeon. To rejoin station at New York, N. Y. March 31, 1898.

Geddings, H. D., passed assistant surgeon. To proceed to Tortugas Quarantine and report to medical officer in command for temporary duty. April 2, 1898.

Wertenbaker, C. P. When relieved by Assistant Surgeon **Hill Hastings**, to rejoin station at Wilmington, N. C. April 2, 1898.

Young, G. B., passed assistant surgeon. To rejoin station at Delaware Breakwater Quarantine. March 31, 1898.

Oakley, J. H., passed assistant surgeon. Upon expiration of leave of absence to proceed to Evansville, Ind., and assume command of Service. March 29, 1898.

Norman, Seaton, assistant surgeon. Granted leave of absence for four days. March 29, 1898.

Tabb, S. R., assistant surgeon. Granted leave of absence for seven days and upon expiration thereof to proceed to Savannah, Ga., and assume command of Service. March 29, 1898.

Mathewson, H. S., assistant surgeon. Granted leave of absence for one month from April 15, 1898. March 30, 1898.

Jordan, W. M., assistant surgeon. To proceed to San Francisco Quarantine and report to medical officer in command for temporary duty. March 30, 1898.

Hastings, Hill, assistant surgeon. To proceed to Middlesborough, Ky., for special temporary duty. April 2, 1898.

Lavinder, C. H., assistant surgeon. To proceed to Cape Charles Quarantine and report to medical officer in command for duty and assignment to quarters. March 30, 1898.

Russell, H. C., assistant surgeon. To proceed to Pittsburg, Pa., and assume temporary command of Service. March 30, 1898.

BOARD CONVENED.

Board convened to meet at Washington, D. C., April 5, 1898, for physical examination of officer of Revenue Cutter Service, Surgeon H. W. Austin, Chairman; Passed Assistant Surgeon G. T. Vaughan, Recorder.

CASUALTY.

Emil Prochazka, assistant surgeon, died of tubercle of lungs at Silver City, N. Mex., April 1, 1898.

APPOINTMENTS.

The following appointments have been made for Essex County of the Examining Surgeons for the United States Pension Board: President, Dr. W. W. Eaton, Danvers; Secretary, Dr. Frank P. Atwood, Salem; Treasurer, Dr. G. A. Stickney, Beverly.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, April 18th, at 8 o'clock.

Dr. J. E. Goldthwait will read on "The Immediate Reduction of the Deformities occurring in Pott's Disease, both With and Without Ether."

Dr. F. Cobb: "Septic Peritonitis and its Surgical Treatment; Including Reports of Four Fatal and Two Successful Cases."

Dr. F. B. Lund: "Remarks on Seven Operations for General Peritonitis, with Two Recoveries."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, April 20, 1898, at 8 p. m.

At 8 o'clock. Short communications by Dr. J. L. Morse: "The Principle and Limitations of Home Modification of Milk." Dr. E. O. Otis: "The Tuberculin Test in Cervical Adenitis." Dr. G. G. Sears: "Hemorrhagic Pericarditis."

At 8.30 o'clock. Paper: Dr. A. K. Stone, "Albuminuria." Dr. J. B. Ogden is expected to open the discussion.

E. W. Taylor, M.D., *Secretary*, 416 Marlborough St.

AMERICAN SURGICAL ASSOCIATION.

The meeting of 1898 will be held at the Tulane Medical College, Couch and Villere Streets, New Orleans, La., on Tuesday, April 19th, Wednesday, April 20th and Thursday, April 21st.

On April 19th at 10 o'clock, the Address of Welcome will be delivered by Dr. J. Holt, of New Orleans. This will be followed by the President's Address on "The Future of the Association."

The subjects for discussion include: Etiology and Classification of Cystitis, N. Senn, M.D., Chicago. Discussion by Dr. C. H. Mastin, of Mobile, and Dr. John Parmenter, of Buffalo.

The Question of Operative Interference in Recent Simple Fractures of the Patella, Charles A. Powers, M.D., Denver. Discussion by Dr. J. D. Bryant, of New York, Dr. M. H. Richardson, of Boston, and Dr. James E. Moore, of Minneapolis.

Operative Treatment of Carcinoma of the Breast, W. S. Halsted, M D., Baltimore. Discussion by Dr. L. M. Tiffany, of Baltimore, Dr. F. H. Gerrish, of Portland, and Dr. Rudolph Matas, of New Orleans.

The Use of Toxines in Surgical Disease, George Ryerson Fowler, M.D., New York. Discussion by Dr. P. S. Conner, of Cincinnati, Dr. Edmond Souchon, of New Orleans, and Dr. George Ben Johnston, of Richmond.

Etiology of Cancer, Roswell Park, M.D., Buffalo.

The following Volunteer Papers have been promised:

Remedial Measures in Obstruction of the Common Duct, J. McFadden Gaston, M.D., Atlanta.

Hysteria from a Surgical Standpoint, James E. Moore, M.D., Minneapolis.

Traumatic Rupture of Pancreas; Formation of Hemorrhagic Cyst; Operation; Pancreatic Fistula; Recovery, H. W. Cushing, M.D., Boston.

Nosology and Morphology of Tumors, True and False, Edmond Souchon, M D., New Orleans.

Prostatectomy (by title), L. C. Lane, M D., San Francisco.

Some Cases not Operable (by title), David W. Cheever, M.D., Boston.

Cerebellar Tumors, N. B. Carson, M.D , St. Louis.

A Case of Appendicitis in which the Appendix became Adherent to the Bladder and Produced a Fecal Urinary Fistula, W. W. Keen, M.D., Philadelphia.

A Case of Fecal Communication with the Bladder with Resulting Calculus following Appendicitis, George R. Fowler, M.D., New York.

Gunshot Injuries of the Spine, with the Report of a Case, T. F. Prewitt, M.D., St. Louis.

Radical Cure of Femoral Hernia in the Light of Recent Methods, Rudolph Matas, M.D., New Orleans.

The entertainments provided by the Committee of Arrangements include luncheons, dinner and receptions.

The officers of the Association for the current year are: President, T. F. Prewitt, M.D. Vice-Presidents, J. McFadden Gaston, M.D., M. H. Richardson, M.D. Secretary, Herbert L. Burrell, M.D. Treasurer, George R. Fowler, M.D. Recorder, DeForest Willard, M.D. Council, N. Senn, M D., L. McLane Tiffany, M.D., Phineas S. Conner, M.D., J. Collins Warren, M.D. President, Secretary, Treasurer and Recorder, *ex officio*.

RECENT DEATHS.

Edgar Simon Dodge, M.D., M.M.S.S., died in Natick, April 5, 1898, aged forty-four years.

Levi Gerrish Hill, M.D., of Dover, N. H., died March 3d, aged eighty-five. He was born in Strafford, N. H., and was graduated from Dartmouth Medical College in 1838. He practised in Salisbury, N. H., and Norfolk, Va ; and in 1848 removed to Dover, N. H., where for many years he had an extensive practice. Dr. Hill was a member of the Dover Medical Society, president in 1854; Strafford District Medical Society, president in 1862; New Hampshire Medical Society, president in 1869, and president of its board of trustees from the establishment of that board; vice-president of the American Medical Association, in 1881; president of the examining board under the registration law of New Hampshire during the first ten years of its existence, 1878–88.

John G. Pierce, M.D., of Yarmouth, Me , died October 28th aged fifty-four. He was a graduate of Bowdoin Medical School, and had studied at the Harvard Medical School.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Puerperal Infection, Preventive and Curative. By F. A. L. Lockhart, M.B., and C.M., Edin., Montreal. Reprint. 1897.

The Great Omentum, with more Especial Reference to the Part Played by It in Inflammations of the Abdominal Viscera. By J. G. Adami, M.A., M.D., Montreal Can. Reprint. 1898.

Ein Chirurgischer Beitrag zum Capitel "der Chronische Gelenkrheumatismus und Seine Behandlung." Von Prof. Dr. Max Schüller, Berlin. Hierzu Tafel I.–IV. Separatabdruck aus den "Verhandlungen des XV Congresses für Innere Medicin zu Berlin, 1897." Wiesbaden. 1897.

A Laboratory Text-Book of Pathology for the Use of Students and Practitioners of Medicine. By Horace J. Whitacre, B.S., M.D., Demonstrator of Pathology in the Medical College of Ohio (University of Cincinnati). With 121 illustrations. Philadelphia: P. Blakiston, Son & Co. 1897.

Annual and Analytical Cyclopedia of Practical Medicine. By Charles E. deM. Sajous, M.D., and one hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with chromo-lithographs, engravings and maps. Volume I. Philadelphia: The F. A. Davis Co. 1898.

Illustrated Skin Diseases: An Atlas and Text-Book, with Special Reference to Modern Diagnosis and the most Approved Methods of Treatment. By William S. Gottheil, M.D., Professor of Skin and Venereal Diseases at the New York School of Clinical Medicine; formerly Lecturer on Dermatology in the New York Polyclinic; Consulting Dermatologist to the Orphan Asylum of the Sheltering Guardian Society, etc. Portfolios I, 2 and 3. Anatomy of the Skin, Physiology of the Skin, Therapeutics of the Skin, Classification, Functional Disorders, Pruritus, Hyperidrosis, Chronidrosis, Bromidrosis, Seborrhea, Comedo Milium, Sebaceous Cyst, Astratosis, Erythema Simplex Livedo, Urticaria, Prurigo, Purpura. New York: E. B. Treat & Co. 1898.

Original Articles.

ON SOME FORMS OF ADENOID DISEASE WHICH ARE OFTEN OVERLOOKED, AND ON CONDITIONS WHICH MAY SIMULATE ADENOID DISEASE.[1]

BY JOHN W. FARLOW, M.D., BOSTON.

The terms "adenoid disease," "adenoid hypertrophy," "post-nasal obstruction," "mouth-breathing," are so commonly associated that they are considered as almost synonymous. It is not uncommon for patients to be told that there can be no adenoid hypertrophy because there is no snoring or open mouth, and by no means infrequent that cases are referred to specialists for operation where the only symptom is inability to keep the mouth closed. So many of such cases have come to my notice that I have thought the possibility of one condition existing without the other was not sufficiently borne in mind.

The two points which I wish to make are: first, that adenoid disease often exists and causes symptoms demanding operation, without there being mouth-breathing or apparent nasal obstruction; and, second, that mouth-breathing may be caused by many other conditions than adenoid disease.

At birth the vault of the pharynx is occupied by ridges or folds of lymphoid tissue arranged like an open fan, or the cerebral convolutions, with depressions between them, the central depression being generally the largest. If the ridges increase and hang down as separate masses, the name "vegetations" is often given to them, while the term, "pharyngeal tonsil," is commonly applied to a more or less uniform, rounded, firmer enlargement with but little prominence of the ridges. The post-nasal space of the young child is small, and is merely a part of a tube which connects the anterior part of the nose with the larynx. There is practically none of the dome-shaped cavity with which we are familiar in the adult. This narrow tube is easily encroached upon by even a slight hypertrophy in any part of its length. Hence in the infant a very small amount of adenoid disease may cause a considerable amount of obstruction to breathing.

Let us suppose a child has reached the age of twelve years and the post-nasal space has developed into a good-sized cavity while the adenoid tissue has remained small. From a succession of colds, the grip, or a contagious disease, the membranes of the nose and throat have become much inflamed, and with them the adenoid tissue, where the inflammation is very prone to remain long after the rest of the nose and throat are well. As a consequence, we may have a chronically inflamed, but not necessarily obstructive, gland which pours out secretion, forward into the nose, and downward into the lower pharynx, larynx and esophagus, causing rhinitis, pharyngitis, cough, hoarseness, loss of appetite, and indigestion, sensitiveness to cold, etc. I have seen this state of affairs started up by a cold in November, continue through the winter and till warm weather.

We will call this the small catarrhal adenoid, which can occur without causing mouth-breathing in patients whose post-nasal space is of good size. I have had a number of cases under my care, from fourteen to eighteen years of age, where the growth and enlargement of the bony framework of the post-nasal space seemed to be accompanied with quite a marked secretory activity of this pharyngeal tonsil, and the frequent and prolonged colds have given rise to the idea that the children had outgrown their strength, when, in reality, all that was needed was removal of a focus of irritation and disease. The idea that the physiological atrophy of an organ is a normal process and needs no medical or surgical interference has certainly not proved true in my experience. This atrophy often takes place at a later date than is usually assigned to it, and after the obstructive symptoms have disappeared an abnormal amount of secretion in the throat is a sign that, although the gland may be smaller, it is certainly not without activity and may require attention.

After the catarrhal symptoms have abated, and also quite apart from them, there may be disturbances caused by this relatively small growth, that is, small in comparison with the space which contains it. I think all will argee that the size of the growth is not a certain index of the number or severity of the symptoms. Some large growths may be accompanied by a minimum of discomfort, whereas in certain cases a small growth may be the starting-point for many reflex troubles. As a consequence, we are often called upon to treat cases where there is no mouth-breathing, but where various nervous phenomena demand the removal of what adenoid tissue there is. This may be true in croup, chorea, nervous twitchings, hoarseness, hacking cough, scraping of the throat, to say nothing of diseases of the ear. We may make a comparison with chronically diseased tonsils. It is not by any means hypertrophy alone which requires treatment. *Small* tonsils with diseased areas and follicles prone to inflammation demand attention equally with the *hypertrophied* glands. Many young persons go through a period of so-called delicate throats from diseased adenoid or tonsillar tissue without hypertrophy, and recognition of the existence and importance of non-obstructive adenoid disease should bring about a diminution in the number and duration of such cases.

Coming now to the second point, conditions which may simulate adenoid disease, any obstruction in the upper air-passages above the uvula may necessitate mouth-breathing: deviations, spurs and ridges of the septum; weakness and falling in of the alæ; catarrhal secretion which children neglect to blow out, and which adheres to and stops up the nose; chronic eczema of the anterior nares, with formation of crusts which block the nostrils. It is not very uncommon to find the openings of the nostrils too small. The interior of the nose may not be large enough for the individual. The septum may be straight and the turbinates not large, but the nose seems built on too small a plan, a sort of misfit. Children's noses are small enough at best, and any reduction in size may lead to snoring and mouth-breathing. It is often a matter of great difficulty to determine whether a given nose is large enough for its proper function. Its weak points are best observed at night. I have in mind a number of patients who habitually wear some form of internal expander at night to dilate the nostrils. As children they had many symptoms which suggested adenoid disease, but repeated examinations showed the absence of post-nasal obstruction.

Hypertrophy of the turbinates, especially of their posterior ends, in young adults may have a close resemblance to adenoid disease. The two may be associated, but not necessarily so. The rare congenital closure of the posterior choanæ by a membraneous or bony diaphragm, especially when the occlusion is not total, may easily give rise to the idea that the more common adenoid growth was present.

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[1] Read before the Boston Society for Medical Improvement, January 10, 1898.

In young adults I have seen a number of instances of bilateral hypertrophy of the submucous tissue of the posterior end of the vomer, which had persisted for some time and which had been considered to be post-nasal obstruction requiring operation.

Retro-nasal fibromata springing from the basilar process may simulate adenoid disease, but when they are large they cause a much greater degree of obstruction than adenoid disease. Polypi in the posterior part of the nose, especially when projecting into and filling the post-nasal space, are a possible source of error, but are so uncommon at the age when adenoid disease is usually found that they seldom cause the mistake to be made.

I have often noticed that the post-nasal space itself was small, the distance between the Eustachian eminences much reduced, and, at times, these eminences enlarged and encroaching on the calibre of the space. This condition may go with a narrow nose, and both may have been brought about by former adenoid hypertrophy, which has atrophied subsequently leaving the bony parts too small. The post-nasal space, being thus smaller than it should be, serves to hold back somewhat the air from the nose, especially when there is any acute swelling or undue amount of secretion, and the same obstructive symptoms may exist as were present before the disappearance of the adenoid disease. This similarity of symptoms sometimes leads to disappointment on the part of parents when they fail to see the great improvement in breathing which they had hoped for as a result of operation on their children.

The distance from the soft palate to the posterior pharyngeal wall may be much diminished by a forward projection of the upper vertebræ, which is not by any means uncommon, or the soft palate itself may extend backward so far as to leave but a small cleft for the passage of the air, and hence mouth-breathing may be necessary. In such cases it is often very difficult to obtain a view of the post-nasal space with the mirror through the narrow opening, and it may be almost impossible to pass the finger up behind the palate.

The jaws and teeth may be the sole cause of the open mouth, and children with irregular and very large upper teeth often find it impossible to keep the lips closed over the teeth. The enormous, central, upper incisors which appear in some children at the time of the second dentition are plainly too large for the upper lip, which has not begun to assume adult size. If we were obliged to buy, at eight years of age, a hat that would be the right size for us when we were twenty-one, we should not be very much surprised if for a number of years we had a very poor fit. The same holds true of the teeth. These large incisors, not covered by the small upper lip, and the open mouth cause the parents to believe very naturally that there is some post-nasal growth, especially if some kind friend or neighbor repeatedly suggests this as a probability. If the mouth is kept open from necessity there may ensue pharyngitis, large tonsils, cough, disease of the nose, etc., symptoms strongly suggestive of adenoid disease.

Occasionally I have seen the tongue too large to remain comfortably between the teeth when the mouth was closed, and, from the resulting open mouth, the post-nasal space was suspected.

The specific snuffles of the young child may simulate adenoid disease very closely; and as the post-nasal space and fauces may be too small for the passage of the finger, it is well to bear in mind the possibility of specific disease whenever nasal or post-nasal obstruction is present, especially in the infant. Specific adhesions, bands, hypertrophies, ulcerations with secretion may cause obstruction later on.

MEDICAL EXPERT TESTIMONY IN THE KELLEY MURDER TRIAL.[1]

BY WALTER CHANNING, M.D., BROOKLINE, MASS.

ON April 16, 1897, the dead body of Joseph A. Stickney, cashier of the Great Falls National Bank of Somersworth, N. H., was found on the floor of the bank. Death had been produced by numerous blows on the head and by cutting the throat with a razor.

Suspicion quickly pointed to Joseph E. Kelley, who lived in the adjoining town of Berwick. He was arrested three days later in Montreal, and confessed that he was the murderer.

Experts were employed by the defence to examine into his mental condition, which led to the employment of others by the State for a similar purpose. This procedure was rendered necessary, as the law of New Hampshire specifies that, "where insanity is set up as a defence to an indictment the jury must be satisfied beyond a reasonable doubt that the killing was not produced by mental disease."

Drs. Cowles, Jelly and Channing were the State experts, and with Drs. Bancroft, Gorton and Waterman, the defence experts, examined the prisoner several times before the trial.

As a result of these examinations and the evidence brought out at the trial, all of the experts came to the conclusion that Kelley's brain was imperfectly developed and that, in the full sense of the word, he was not responsible.

This unanimous opinion led the defence to change the prisoner's plea of "not guilty" to "guilty." This change made a very important difference, as the judge under the New Hampshire law could determine the degree of guilt, and a jury was no longer necessary. The jury accordingly was dismissed, and the trial became a hearing before the judge.

It was arranged that after the evidence was all in the experts should testify, those for the defence being called first. The difference between testifying in this manner and that ordinarily pursued was marked. In this case each expert gave his testimony directly to the judge, expressing freely and unqualifiedly his personal opinion and was not made to appear the prejudiced advocate of either one side or the other.

The experts were unanimously of the opinion that Kelley's responsibility was limited because of brain defect, and they all answered in response to the question of the judge, that they thought he did not possess the capacity to form a premeditated and deliberate purpose to the degree that a sane man would.

The court established the degree of murder as that of the second degree, and the prisoner received a sentence of thirty years, as there is no sentence to life imprisonment in New Hampshire.

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[1] Read before the Boston Medico-Psychological Society, December 16, 1897.

The following were some of the points of medicolegal interest suggested by the case:

(1) The value of an examination of a criminal to determine his mental condition in the presence of a large number of persons is doubtful and uncertain, and may not in itself be sufficient to accomplish the desired object.

(2) Each expert should be allowed to examine the prisoner alone.

(3) In a medico-legal case the time for the trial should be extended until the experts have had every opportunity to form an opinion.

(4) It would further the ends of justice and save expense to the State if the experts of both sides could have a conference before the trial in order that they might come to some mutual understanding, or formulate a joint opinion.

(5) A conference being out of the question before the trial, a conference during the trial would be the next best thing.

(6) It would add to the dignity of testifying in court if experts would at least endeavor to pursue such a course.

(7) The best way for the expert to express his opinion is directly to the court. The clearness, directness and reliability of his testimony are largely enhanced by this means.

(8) The hypothetical question is admirably calculated to befuddle juries; it stimulates hair-splitting on the part of counsel and obliges doctors to make fools of themselves. The truth of this was proved in the case under discussion, where there being no such question the expert was able to leave the witness-stand feeling that he had not unwittingly stultified himself.

(9) A more searching inquiry into the subject of degeneracy, and the mental status of degenerates, is desirable.

(10) Should experts define responsibility? Can they say in court a man is partly responsible? Would it be better in testifying not to attempt to draw a line between degrees of responsibility?

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Clinical Department.

A CASE OF CYSTIN CALCULUS IN THE MALE BLADDER.[1]

BY PAUL THORNDIKE, M.D.,
Assistant Surgeon, Boston City Hospital; Assistant in Genito-Urinary Surgery, Harvard Medical School.

The patient, a farmer thirty-three years old, entered the Boston City Hospital from his home in Western Massachusetts on December 19, 1896, complaining of troublesome and frequent micturition. Careful inquiries into his family history revealed nothing of importance in connection with his disease, and later on, when the rarity of his disease was appreciated, further careful inquiry was made with a like result.

The history of his trouble covered five years, during which time he had suffered twelve or fifteen attacks of acute pain in the right loin and groin, associated with the passage of some gravel in the urine. During the year previous to his admission to the hospital he had been wellnigh incapacitated from work by pain and frequency of micturition.

Examination of his bladder revealed the presence of a small, soft stone, which was readily crushed and removed on December 26th. After it was washed and dried it weighed 3.5 grammes. Dr. J. B. Ogden found upon analysis that the stone was composed largely of cystin, and after much patient and careful work was able to isolate crystals of cystin from the urine and thus establish a diagnosis of cystinuria.

The case is of interest clinically for several reasons: (1) because of its rarity; (2) because of the prominence of a characteristic symptom, namely, the liberation of H_2S from the urine and the characteristic odor therefrom; and (3) because of the absence of crystalline elements in the urine.

Prior to the operation the patient had said that at times his urine stank so as to be really offensive; but this statement did not make the impression which its importance deserved, and it passed unnoticed until later events recalled its interest and importance. Had it been given the consideration which the patient was inclined to accord it, a suggestion of the true disease might have been obtained prior to the operation. It was the odor of the sulphuretted hydrogen which was liberated by the ready decomposition of a cystin-containing urine. The urine was usually on the verge of alkalinity, decomposed very quickly and gave off the characteristic odor to which the patient objected and which was due to the decomposition of the cystin in solution in the urine. At times the urine was more acid and would keep sweet for some days, as does a normal urine; but usually it spoiled within a few hours, and sometimes within a few minutes after urination. One specimen which was passed into a sterilized bottle about 7 A. M. and was taken at once to the urine laboratory by an orderly, had spoiled an hour later when examined by the house-officer. The urine often spoiled while in the bottle at the bedside, although the bottle was emptied many times a day; and yet the urine was invariably sweet and fresh at the moment of passage.

The clinical history of this case covered a period of five years, and at the time of operation a stone weighing 3.5 grammes was removed from the bladder; and yet it was only after analysis of the calculus had made a diagnosis, and after several weeks of repeated and careful efforts by an expert medical chemist that crystals of cystin could be demonstrated from the urine.

The above-mentioned points seem to justify a clinical report of this case. Chemically the case is of such interest and rarity that Dr. J. B. Ogden has consented to present the results of his analyses in some detail and to make some remarks on the subject of cystinuria.

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REMARKS ON CYSTINURIA: EXAMINATION OF THE URINE AND CALCULUS.

BY J. BERGEN OGDEN, M.D.,
Assistant in Chemistry, Harvard Medical School; Assistant in Clinical Pathology, Boston City Hospital.

URINE.

The examinations of the urine of this patient are both interesting and instructive.

On December 20th, the day following his entrance to the hospital, the urine had the following characteristics: pale; turbid; faintly acid; specific gravity, 1.015; albumin, a slight trace; bile and sugar absent. The sediment was abundant in quantity and consisted of a large amount of pus, both free and in clumps; many small round cells; an excess of neck of bladder and a few squamous epithelial cells; some blood. No casts or crystalline elements were seen. This was the only urinary record reported previous to the removal of the calculus on December 26th.

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[1] Read before the Boston Society for Medical Improvement, January 10, 1898.

January 2d. The twenty-four-hour quantity not known. Pale; turbid; faintly alkaline in reaction; specific gravity, 1.015; the coloring matters, chlorides and phosphates diminished; uric acid relatively increased; urea, 1.51 per cent.; albumin, a slight trace. Sediment: a large amount of pus, and an excess of neck of bladder cells. A few squamous cells, and considerable normal blood; many small round cells, a few of which were fatty. An occasional hyaline and granular cast with a little fat adherent. No crystals of cystin could be found. Sulphuretted hydrogen was not detected at this time, that is, it was not noticed while the above examination was being conducted; a test for it, however, was not made. This urine was strongly acidulated with acetic acid and allowed to stand twenty-four hours, but no characteristic crystals of cystin could be found on repeated examinations.

January 5th. Pale; turbid; faintly alkaline; specific gravity, 1.013; albumin, one-sixtieth of one per cent.; urea, 1.26 per cent. Sediment: practically the same as at the last examination (see above). Cystin crystals could not be found, either in the fresh sediment or in the strongly acidulated urine after long standing. There was a very free evolution of H_2S gas, first detected by the odor and then by chemical tests.

Twenty-four-hour quantity	1,875 c. c.
Urea	23.62 gm.
Chlorine	10.68 "
P_2O_5	2.96 "
Albumin	1.1 "
Cystin	Not quantitated.
Sulphuric acid	" "

January 6th. Pale; turbid; reaction *acid;* specific gravity, 1.019; urea, 1.7; albumin, one-sixtieth of one per cent. The sediment was much the same as on January 2d, and still cystin could not be found. The urine was again strongly acidulated with acetic acid and allowed to stand two days, but cystin crystals were not found during a prolonged examination. The specimen which was acid when it was voided, and also free from H_2S, was allowed to stand until it decomposed, when H_2S gas was found in liberal amounts.

The patient was discharged from the hospital on January 8th, with the request that he show himself at Dr. Thorndike's office in about two weeks.

On February 27th, the patient passed some urine in Dr. Thorndike's office, and with the following characteristics: normal; slightly turbid; reaction strongly acid; specific gravity, 1.023; coloring matters normal; earthy and alkaline phosphates diminished; chlorides normal; urea normal (2.14 per cent.); uric acid increased; albumin, a *very* slight trace; bile and sugar absent. The sediment was considerable in amount, and consisted of pus, both free and in clumps; an excess of neck of bladder and a few squamous cells. Many small round cells, some fatty, and some normal blood. No casts detected. There was a prolonged search made for cystin crystals, but none were found. The urine was divided into two portions, one of which was allowed to decompose, the other was strongly acidulated with acetic acid, allowed to stand three days, and examined for cystin crystals with a negative result. This acidulated specimen was left standing on my table for a period of four weeks without being disturbed or examined. At the end of this time there was found to be a heavy deposit of uric-acid crystals, and a few large hexagonal plates of cystin. After decanting the clear supernatent fluid from the sediment, it was rendered alkaline with ammonic hydrate, heated, filtered, and the filtrate evaporated to a few drops. A small portion of this liquid was evaporated to dryness on a glass slide, and a few cystin crystals were found. The portion of urine which was left to decompose was found to contain traces of H_2S.

CALCULUS.

The crushed calculus and the bladder washings were submitted for analysis. The fragments varied in size from the head of a pin to a pea, and a small portion was in the form of a fine powder. The fragments and powder were washed once with distilled water, by decantation, then carefully dried at a low temperature and weighed. The weight of all amounted to 3.5 grammes. The largest fragments showed that the stone was made up of a grayish substance, constituting its body, and a very thin, practically colorless, outer coat.

Analysis of Calculus, Body. — A small fragment was heated on a platinum foil, and found to burn with a bluish flame and to give off the odor of SO_2. Another portion of the body of the stone was ground to a fine powder and some of this dissolved in weak ammonic hydrate, a drop of the solution evaporated to dryness on a glass slide and examined microscopically; many hexagonal crystals of cystin found.

The powder did not respond to the *murexide* test (absence of uric acid and urates).

When a portion of the powder, suspended in water, was boiled, it was found to be practically insoluble, but completely dissloved on the addition of strong hydrochloric acid, without effervescence (absence of CO_2); this solution was neutralized with ammonic hydrate, and no precipitate (absence of phosphates); filtered and added a solution of ammonium oxalate to the filtrate — no precipitate (absence of calcium salts).

Analysis of Outer Coat. — This thin outer coat was treated in the same manner as the body, and found to consist chiefly of ammonio-magnesium phosphate, a trace of calcium salts and a small amount of cystin.

The examination of the urine and concretion showed that we were dealing with a case of chronic cystitis due to the presence of a cystin calculus. There was also evidence of some renal disturbance, apparently of the nature of an active hyperemia and not a primary disease of the kidneys, for a single examination of the twenty-four-hour urine showed that the kidneys were doing very good work, especially for a man who was confined to his bed and on a limited diet.

Cystin $(C_3H_6NSO_2)_2$ is an amido acid which is only rarely met with in the urine. Its presence can only be determined with certainty by an examination of the urine. It usually occurs in solution and can, for the most part, be precipitated by strongly acidulating with acetic acid.

Frequently it separates from the urine inside of the body, and when the urine is passed it is found to have an abundant sediment of colorless hexagonal plates, the angles of which, according to Niemann,[1] measure 120°, or single quadrilateral prisms or groups of prisms.

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[1] Archiv. f. klin. Med., xviii, p. 259.

The danger of a calculus formation always attends the separation of cystin from the urine inside the body. Where a concretion exists, it is usual to find few (sometimes many) isolated crystals of cystin.

Cystin calculi vary in size from microscopic concretions to large calculi, and may, by their irritation, produce a mild or severe inflammatory process in that part of the urinary tract in which they are deposited. They usually have a grayish color at the time of their removal from the body, but very soon undergo a change of color, becoming greenish, due to the exposure to air and light (oxidation).

When a urine containing cystin decomposes, its decomposition is attended with the evolution of H_2S, for the reason that the cystin contains 26 per cent. of sulphur.

Its amount in the urine undergoes considerable variation at different times, and it may temporarily disappear. The daily quantity may reach as high as one and one-half grammes (Toel). Ordinarily, however, the quantity does not go so high, but varies between a few milligrammes and one gramme.

Cause of Cystinuria. — Previous to 1888–89 it was thought to be due to abnormal processes of oxidation in the liver, since, in some respects, cystin resembled *taurin.* Marowski[2] considered it a vicarious elimination of taurin because in his case there was an absence of bile in the intestine.

The experiments of Baumann and v. Udránszky, Brieger, and others threw new light on the causation of this condition. They found that certain products of intestinal putrefaction, called *diamines*, were eliminated in the urine and feces of persons afflicted with cystinuria. Baumann and v. Udránszky[3] made frequent examinations of the urine of a case of cystinuria for diamines and found them regularly. They were isolated in the form of a benzoyl compound, which varied in amount from 0.2 to 0.4 gm. in twenty-four hours. Approximately one-third to one-fourth of these substances existed as Tetramethylendiamine, and the remainder as Pentamethylendiamine.[4]

According to Brieger, since these diamines arise only as the result of putrefactive processes due to specific bacteria, cystinuria can be considered the result of a specific infection of the intestine.

In Baumann's case (mentioned above) both diamines were invariably found in the feces as well as in the urine, and he observed that the relative amounts of these substances in the feces, particularly the cadaverin, varied inversely as those in the urine. Neither Brieger nor Baumann were able to discover these diamines in the feces of healthy individuals, or in those suffering from other diseases.[5]

So far as has yet been determined, no *definite* relation exists between the formation of cystin and the diamines, although the same conditions which produce diaminuria usually also produce cystinuria.

Hereditary predisposition certainly appears to have some bearing as a cause, since so many cases have been reported of the existence of the affection in several members of the same family. It is difficult, however, to explain the hereditary transmission of cystinuria by the theory of Brieger, unless we assume that such individuals are more susceptible to the action of the "specific bacteria," which produce the intestinal putrefaction, than others.

Cystin is met with in the urine of both infants and adults, but only rarely occurs in old age. It does not appear to be connected with any local or constitutional disease. It may be present and continue for years without any noticeable impairment of health, although there is usually more or less irritation of the urinary tract, as a result of its separation from the urine.

The evolution of H_2S gas from the urine should always lead to its examination for cystin, although H_2S is not always due to the presence of cystin. Oftentimes silver coins carried in the pockets of patients having cystinuria are blackened by the sulphuretted hydrogen evolved. (Cystin is sometimes eliminated by the sweat, hence the H_2S.)

It is important to distinguish between the crystals of cystin and other like crystalline elements. It can be distinguished from the pale six-sided crystals of uric acid by allowing a drop of weak ammonic hydrate to mingle with the deposit on a glass slide, when either form of crystals disappears, evaporate, and if cystin be present the crystals reappear; if uric acid, crystals of ammonium urate will be found, instead of those of uric acid. Another simple method consists in treating the crystals with hydrochloric acid, which readily dissolves the cystin, but leaves uric acid unchanged. From triple-phosphate, it is distinguished by its behavior with acetic acid, which readily dissolves the phosphate crystals, while cystin remains unchanged.

Our case represents the importance of the chemical examination of all calculi, both from a diagnostic and prognostic point of view. A person who has once had a cystin calculus is very likely to have another, the liability, perhaps, being greater than when formed of the other crystalline elements, since, so far as I have been able to learn, no satisfactory treatment has yet been instituted for the relief of cystinuria.

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TWO CASES OF SPONTANEOUS RUPTURE OF THE UTERUS DURING LABOR.

BY J. J. HEALY, M.D., NEWBURYPORT, MASS.

During a practice of over twenty-five years I have attended upwards of three thousand confinements. It has been my lot to see about every anomaly and complication mentioned in the text-books. I have lately had a case of spontaneous rupture of the uterus, in a healthy woman, during labor at full term. Both mother and child died. This is the second case in my lifetime. The following are the notes of these cases:

Case I. Mrs. M., aged thirty years, a large, fat woman, weighing 180 pounds. Had had several children, with tedious labors. Was called to attend her in confinement, November 18, 1872. Found her at 7.30 p. m., in hard labor, with head high up and not yet engaged in pelvis. Liquor amnii had escaped several hours before. The uterine contractions were so strong, with no advance of head, that I advised ether and forceps delivery. I could not obtain the consent of the family till 10.30 p. m. at which time the patient went into a collapse, Dr. Montgomery assisted me in giving ether and applying the forceps. A dead child was delivered and the placenta removed. I examined and found a large rent in the body of the

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[2] Deutsches Archiv. f. klin. Med., iv, p. 449.

[3] Ztschr. f. Physiol. Chem., 1889, xiii, p. 562.

[4] Brieger gave new names to these two substances, calling the first *putrescin* and the latter *cadaverin.*

[5] According to Neubauer and Vogel these diamines have been found in the intestinal discharges of patients with Asiatic Cholera. Analyse des Harns, Ninth Edition, 1890, p. 87.

uterus extending transversely about half the circumference of the uterus, the lower segment including the lower third of the body. The weight of the child was fifteen pounds. Death of the mother followed immediately on delivery.

Case II. Was called, February 17, 1898, at 9.30 p. m., to attend Mrs. M. T., in her fifth confinement. Previous confinements had been normal. Nothing in the condition of the patient on this occasion to warrant any apprehension. She was a strong, healthy woman, having up to the time of labor setting in done her own housework. Shortly after my arrival the bag of waters broke; amount large. Head not yet engaged at brim; R. O. P. Expulsive pains came on, and head advanced rapidly. At 10.30 p. m. the head was distending perineum; occiput had passed under pubic arch; and I expected immediate termination of the labor, when all pains suddenly ceased and the patient went into a collapse. The head receded to brim of pelvis and the body of the child could be felt under the abdominal wall, I summoned assistance, and in a few minutes Dr. C. C. Day arrived. Ether was cautiously given and forceps applied. The head was easily delivered, but the extraction of the shoulders gave me considerable difficulty; all of the child had, in fact, escaped from the uterus except the head, and it required no little tact to disengage the shoulders and press them into the hollow of the sacrum while my assistant made traction downwards by means of a fillet around the child's neck.

I made an examination, and found a transverse rent extending about two-thirds of the circumference of the uterus, the posterior wall being intact, and the lower segment, including about the lower fourth of the body of the uterus. The placenta was easily separated and delivered; it was attached to the upper posterior portion. When I removed the placenta, some coils of small intestine came down through the laceration in the uterine wall into the vagina. The patient continued in the collapse, and died immediately after delivery.

I am unable to assign any cause for the untoward accident that brought about death in both the above cases. Both women were young — one of fair, the other of more than average vigor; and no ergot or other medicine provocative of uterine contractions was used.

Medical Progress.

PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

CONVEYANCE OF INFECTIOUS DISEASES BY MEANS OF THE AIR.

Dr. E. Germano[1] reports the results of a series of experiments in continuance of those already reported. The later series relate to diphtheria, erysipelas and pneumonia. He reports the following conclusions in regard to the spread of diphtheria:

(1) The diphtheria bacillus can resist drying for a long time, both in the membrane, in the tissues and when present in dust.

(2) Increased rapidity in drying, even by means of sulphuric acid, does not affect the resisting power of the bacilli either in the tissues or in the dust.

(3) The bacillus survives better the more it is surrounded by dust, probably on account of its greater protection from oxidation.

(4) When dried completely, the bacillus retains its virulence until it dies.

(5) The air can carry diphtheria while living, by means of dust.

With reference to streptococci, he says:

(1) The power of surviving the drying process depends largely on the mode in which this is carried out, and the material with which it is mixed.

(2) At any rate, its power of resistance is great and can continue for months.

(3) The rapidity of drying has no effect on the vitality of the streptococci.

(4) The resisting power increases with the amount of material in which it is implanted, and which protects it from the air.

With reference to the streptococcus pneumoniæ, to which he attributes pneumonia and sometimes meningitis. pleurisy and acute nephritis, he concludes:

(1) The diplococcus is a micro-organism which can resist drying for a long time.

(2) It survives better when dried than when moist.

(3) As it can under some conditions exist in a dry condition for a long time, but not to the same extent as the *streptococcus erysipelatosus*, the possibility of its conveyance through the air is established.

THE SPREAD OF INFECTIOUS DISEASES BY MEANS OF BATHS AND SUMMER RESORTS.[2]

The following propositions are laid down by Dr. Battlehner, of Carlsruhe, at the close of a discussion by the German Society of Public Health, with reference to public resorts, camp-grounds and places where people congregate in large numbers:

(1) It is quite possible that summer visitors may carry and spread infectious diseases at bathing-places and summer resorts.

(2) In such places care should be taken to secure a good water-supply. The buildings should be provided with good sanitary arrangements. The streets should receive especial care, the sweepings should be regularly collected and taken care of, and the foul water and surface drainage should receive attention.

(3) Where bathing tanks are in use, the water should be frequently renewed and examined.

(4) Sanitary police regulations should be enforced as in other places.

(5) Notification of infectious diseases should be required of all physicians as a means of preventing their spread.

(6) Disinfecting apparatus and well-instructed attendants should be provided.

(7) If there is no hospital a separate room should be provided for persons ill with infectious diseases.

(8) There should also be a house for the reception of dead bodies.

THE CONTAGION OF SPORADIC DYSENTERY.

During the past fifty years dysentery has gradually diminished in its destructiveness throughout New England and the severe epidemics of the period from 1840 to 1870 have been followed by a similar period of comparative immunity from the disease.

In 1849, an epidemic year, dysentery attained the very high death-rate of 25.4 per 10,000 of the living population in Massachusetts. In the five-year period 1861–65 it had a mean death-rate of 7.8 per 10,000; but from that time onward it diminished with considerable uniformity until the five-year period 1891–95 when the death-rate from this cause was only .9 per 10,000.

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[1] Zeitschr. f. Hygiene, vol. xxv, No. 3, and xxvi, No. 1.

[2] Vierteljahrsschrift f. öff Gesundheitspflege, 1898, vol. xxx, p. 22.

During the past two years, however, there has been a slight increase, and local epidemics have been reported from Brockton, Leominster, Marlboro, Yarmouth and other places.

In a recent journal[3] Dr. Letulle cites several cases to show the liability to a mistaken diagnosis in this disease. In one a laparotomy was performed for cancer of the intestines, when a dysenteric ulceration revealed itself. In other cases which occurred at a hospital in Paris, one pronounced cancer of the rectum proved by autopsy to be dysentery, another case, entered as influenza, was shown upon autopsy to be one of dysentery, etc.

Dr. Letulle made inquiry with reference to the possibility of contagion, and found that in one ward of 25 beds only one or two enema syringes were in use, and that two of the patients having dysentery had probably been treated with the same apparatus. He goes on to affirm that dysentery is contagious not only in Algeria and other warm countries, but also in France.

Dr. Lemoine has also published a series of cases in support of this view. These cases demonstrate the necessity of adherence to aseptic principles in the treatment of this disease.

THE SPREAD OF DIPHTHERIA.

The following conclusions are from the final chapter of Dr. Newsholme's new work upon "Epidemic Diphtheria," being a review of its prevalence throughout all civilized countries:

"If the occurrence of pandemics of diphtheria is governed largely, if not chiefly, by meteorological conditions over which we have no control, what scope is there for the intervention of preventive medicine? Before answering this question, let it first be clearly stated that we must have the truth at any cost. If the statement of the truth by implication means that our preventive measures are but Canute-like attempts to stop the inflowing tide, still it is well that the truth should be known. But this is not a correct view of the case. Diphtheria is spread chiefly *by personal infection.* This personal infection is immensely more potent in epidemic than in inter-epidemic years — a fact which should lead to redoubled efforts to prevent personal infection during such epidemic periods, rather than to a fatalistic inertia. Similarly redoubled efforts are required to prevent ground-air from gaining admission into houses, and to render more wholesome the soil in districts in which diphtheria has become endemic. How this can be done in towns, how the soil can, without more open spaces than are obtainable in most of our great cities, be made to resume its virgin salubrity and purity cannot be stated here. It is one of the greatest problems of public health. But to assume that because we do not yet know how to exterminate diphtheria, or because we cannot hope in our day to be entirely successful in preventing its spread, it is therefore useless to attempt anything, would be as unwise as it would be for a city council to dismiss their fire-brigade staff and dispose of their fire-preventing apparatus because the staff had not been successful in at once extinguishing every fire, or because the city council were impressed with the fact that the present appliances for extinguishing fire are of a very imperfect character."[4]

KISSING THE BOOK.[5]

The danger incurred by kissing the Testament in a court of law is emphasized by a statement of Dr. Lys, medical officer of health to the Wareham Rural District Council. In his annual report just forwarded to the Council, Dr. Lys says:

"The death of a constable at Coombe, in the parish of Langton Matravers, in January, was registered as due to acute ulceration of the throat (diphtheria), and there is every reason to attribute his fatal illness to the dangerous practice, from a sanitary point of view, of 'Kissing the Book' on being sworn. He had attended the Petty Sessions at Wareham, and given evidence shortly before the commencement of the attack. The sanitary state of the cottage was satisfactory, and the water-supply was proved by analysis to be excellent."

THE SEWAGE DISPOSAL OF PARIS[6] AND OF LONDON.[7]

The sewerage and sewage-disposal of Paris, begun in 1865, have been perfected by the Law of 1894, which decreed that all household sewage should go to the sewers. There are now three main outfalls. at Asnières, Bievee and the Northern outfall. The stimulus to this perfected system was the outbreak of cholera in 1892, which was believed to be partly due to the defective condition of the sewers.

In addition to the existing areas for irrigation at Gennevilliers, new areas are now provided at Achères. This sewer crosses the Seine at those places, and the sewage is pumped twice, at Clichy and at Colombes. Provision is made for future extension of the system at Méry, and also farther down the river. The entire works will probably be finished by 1900, at which time the whole volume of sewage will be removed from the Seine.

Until about a dozen years ago the sewage of London was allowed to flow into the Thames without purification of any kind. But, after the "Report of the Royal Commission upon Metropolitan Sewerage," measures were taken for treating the entire flow of sewage chemically at two places, Barking and Crossness, upon opposite sides of the river below Greenwich. Lime and iron are used for this treatment, and the resulting sludge is towed down the river and out to sea in barges.

The subject of the sewage-disposal of London is very fully treated in the "Transactions of the British Institution of Engineers,"[8] in two papers by Messrs. Worth and Crimp, and W. J. Dibdin, and in a valuable discussion upon them at the meeting of that Society in February, 1897.

For the purpose of securing a purification of the effluent from the tanks, Professor Dibdin has experimented with a filter based upon the Massachusetts experiments, but constructed of coke-breeze, instead of sand, and he claims that better results can be secured than are possible with sand and gravel. The general results secured by the precipitation method adopted at London, while much less perfect in character than those which are secured by land treatment, nevertheless, have effected considerable improvement in the water of the river, as was testified at this meeting by many who joined in the discussion.

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[3] Presse Médicale, December 25, 1897, p. 389.

[4] Epidemic Diphtheria, by Arthur Newsholme, M.D., London, 1898.

[5] English paper, February, 1898.

[6] Annalen für Gewerbe und Bauwesen, May 15, 1897, p. 195.

[7] Proceedings of British Institution of Civil Engineers, vol. cxxix, 1897, pp. 49, 80.

[8] Vol. cxxix, 1897, pp. 49–187.

Professor Corfield did not believe the system could long continue to be successful, and "could not help thinking that if the money which had been spent in trying to purify the sewage of London by means of precipitation and filtration had been spent in taking it out farther, as had been proposed, to the Maplin Sands, or some other suitable place, and disposing of it by irrigation, that money would have been very much better spent. He thought that would be resorted to in the end, however much money might be spent on experiments."

REQUIREMENTS OF A SEWAGE-EFFLUENT.

The following conditions are laid down by Drs. Dibdin and Thudichum as essential to a sewage-effluent:

(1) It must contain, practically, no solids in suspension.

(2) It must not contain in solution a quantity of organic matter sufficient seriously to rob of its oxygen the stream into which it is discharged.

(3) The organic matter it contains must be in such a condition as to yield readily to the natural purifying influences exerted upon it.

(4) It must not be liable to putrefaction or secondary decomposition.

(5) It must contain nothing inimical to microbial growth and activity; in other words, it must not be sterilized or treated with antiseptics.

(6) It must not contain pathogenic organisms.

(To be continued.)

RECENT PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY HENRY F. HEWES, M.D., BOSTON.

(Concluded from No. 15, p. 351.)

EXCESSIVE MUSCULAR EXERCISE AND METABOLISM, INFLUENCE OF TRAINING.

Dunlop has conducted an investigation upon the influence of muscular exercise upon the body metabolism.[22]

Subjects upon a measured diet were given exercise, as an eighty-mile bicycle ride, and the excretion of nitrogenous products, sulphur, phosphorus and chlorine estimated. The results showed —

(1) That excessive muscular exercise entails an increased consumption of proteid food.

(2) That the proteid consumed is muscle proteid, since the increase of nitrogen and sulphur in the excretions is not accompanied by an increase of uric acid, nitrogenous extractives and phosphorus. Muscle being poor in nucleo-proteid elements, from which the latter products (uric acid, etc.) arise, a waste of muscle proteid does not give rise to these products.

(3) That if a subject is in poor training the consumption of muscle proteid is accompanied by a consumption of other body proteids as evidenced by increase of uric acid, phosphorus, etc., in the excreta, but in trained subjects of muscle proteid alone.

The investigations show the importance of training as sparing of the loss of the structural proteids in hard exercise; also the importance of an increased proteid diet to meet the requirements of the body as a result of such exercise.

THE ABSORPTION AND SYNTHESIS OF IRON.

The investigations of Gaule,[23] Hochhaus and Quincke,[24] Kunkel,[25] Wolfering[26] and Haüsermann[27] prove that absorption of inorganic iron occurs in the organism. The absorption occurs in the duodenum.[24] The investigations of Gaule and of Haüsermann indicate that the absorbed inorganic iron may be synthesized to hemoglobin in the body.

Haüsermann experimented with three sets of animals, made anemic by feeding with food from which it was impossible to assimilate the necessary amount of iron. In the investigation Set 1 was fed upon iron poor diet; Set 2 upon the same iron poor diet, *plus* doses of inorganic iron not large enough to disturb digestion; Set 3 upon a normal iron rich diet. After one month the animals were killed, and the total hemoglobin and total iron of the body estimated.

Set 2 showed a higher iron content than Set 1, thus indicating the absorption of inorganic iron.

Set 2 showed a higher hemoglobin content than Set 1 in some of the animals (the dogs), thus indicating synthesis of the inorganic iron to hemoglobin.

Set 3 showed much higher iron content and higher hemoglobin content than Set 2, thus evidencing the superiority of the assimilation of the organic iron of food over that of inorganic iron preparations.

The author concludes that the first treatment of anemia should consist in a diet of foods rich in iron. To this small amounts of inorganic iron may be added if it is impossible to give the necessary iron supply in food.

The author gives a table of the iron contents of the various food substances.

Gaule[28] proves the absorption of inorganic iron by finding the absorbed iron in the thoracic duct changed to an organic iron compound. He shows[29] the synthesis of the inorganic iron to hemoglobin by estimating this product in several animals before and after treatment with inorganic iron.

The author traces the absorption of the fluid by micro chemical reactions with Hall's NH_4SH mixture from the duodenum to the blood. The only organ in which it is present in the tissue by this reaction is the spleen. The author assumes that the iron is here synthesized to a firm organic compound not reduced by the NH_4SH. He finds an argument in favor of this assumption in the fact that the spleen increases in weight during the ingestion of iron, but falls below the original weight after twenty-four hours, thus evidencing the giving up of the received iron *plus* some of its organic substance.

THE BLOOD IN HIGH ALTITUDES.

Two explanations are offered for the increase in the hemoglobin content and corpuscular richness of the blood of the peripheral circulation in a sojourn in high altitudes:

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[22] Journal of Physiology, vol. xxii, p. 68.

[23] Gaule: Zeitschr. f. Biologie, Bd. xxxv, s. 377.

[24] Hochhaus u. Quincke: Arch. Exp. f. Path. u. Pharm., Bd. xxxvii, 156.

[25] Kunkel: Pflüger's Archiv., Bd. lxi.

[26] Wolfering: Zeitschr. f. Physiol. Chemie, Bd. xxi.

[27] Haüsermann: Loc. cit., Bd. xxiii, 555.

[28] Gaule: Deutches med. Woch., Nos. 19 and 28, 1896.

[29] Gaule: Zeitschr. f. Biologie, Bd. xxxv, s. 377.

(1) A concentration of the blood.

(2) An increased production of hemoglobin and red corpuscles.

Weiss has proved experimentally that no actual increase in the hemoglobin content of the body exists in these cases.[80] Nine animals were kept in high altitudes for a period of one month. At the end of this time the increase in the number of red corpuscles by count was noted, the animals killed, and the hemoglobin content of the body determined. Nine control cases were kept in the lowlands and investigated in the same manner. The results showed an increase in the number of red corpuscles of from 12 to 24 per cent. in the highland animals. The hemoglobin content of the animals remained unchanged.

The conclusion is that the increased corpuscular richness is due to the concentration of the blood.

ACETONE.

The subject of acetone formation and elimination in the animal organism has been investigated by Geelmuyden.[81]

Accepting the well-established fact that acetonuria occurs in the healthy organism in conditions of starvation, or under the administration of a strictly flesh diet, as well as in diabetes, this author has investigated in animals the conditions governing the appearance of acetonuria.

By the administration of known amounts of acetone and the quantitative estimation of the elimination product in the urine and expired air, the author proves that though the organism possesses to a slight extent the function of breaking up acetone, this function is too weak to hinder the appearance of acetonuria if more than the normal trace (two milligrammes in a hundred cubic centimetres) of acetone is formed in the body.

From this he concludes that acetonuria cannot be due to a failure in the action of a normal function for disintegration of acetone, but is due presumably to an over-production of acetone.

By the administration of carbohydrate diet together with the acetone, the author proves that a function of transforming acetone is not induced by carbohydrate metabolism. He concludes that the well-established action of carbohydrates in reducing alimentary or diabetic acetonuria, is therefore due to some action of the carbohydrate elements exerted before the formation of the acetone in the system.

By the administration of a diet of normal calories worth composed exclusively of proteid and fat, with varying amounts of fat, he proves (1) that the acetone production which occurs is proportionate to the quantity of fat in the diet; and (2) also that there is in such conditions a loss of body fat.

In consideration of the following facts — (1) that the acetone production in a strictly proteid diet, does not increase, but decreases, with the quantity of proteid given; amounts at most to 40 milligrammes; and is accompanied by a metabolism of body fat; (2) that the acetone production on a mixed proteid and fat diet increases with the quantity of fat given, and amounts frequently to 100 to 200 milligrammes — the author concludes that the production of acetone is principally dependent upon the metabolism of fat in the body.

By the administration of carbohydrate in varying amounts to cases with a proteid and fat diet acetonuria, the author proves that the presence of carbohydrate in the diet in a normal subject prevents the appearance of acetonuria, or if the acetonuria be already present checks it. This occurs even in cases where the calorie needs of the organism are not satisfied, that is, where the nitrogen loss exceeds the ingestion. The carbohydrate does not, however, act in the manner of a ferment, but a supply of 100 to 200 grammes of carbohydrate per day is necessary with a normal food supply.

The general conclusion of the author is —

(1) Acetonuria occurs if a sufficient quantity of carbohydrate food does not undergo metabolism in the body. If such a quantity of carbohydrate can be transformed in the body, an existing acetone formation can be checked by its administration.

(2) In the acetonuria which occurs with absolute starvation, with pure fat diet, or with mixed fat and proteid diet, the metabolism of the fat appears to be the principal, if not the total, cause.

Hirschfeld, in a series of investigations upon the production of acetonuria in normal individuals and in diabetics, shows that the same conditions govern this production in health and in diabetes.[82] The author found that in normal individuals, whose diet included a sufficient amount of carbohydrate (100 gm.), the acetone excretion amounted to .02 to .04 gm. per day. Upon removal of the necessary carbohydrate from the diet the acetone excretion rose. An excessive proteid food supply caused some lowering in this acetone excretion. Resumption of carbohydrate reduced the excretion at once to its normal level.

In cases of glycosuria in which the metabolism of a sufficient quantity of carbohydrate (100 gm.) was possible, the excretion of acetone was the same as in normal individuals. This excretion rose with removal of carbohydrate and fell with resumption.

In cases of diabetes in which the glycosuria represented one-half the ingested carbohydrate — cases in which 100 gm. could not undergo metabolism — the acetonuria was present. The excretion amounted to 50 to 100 milligrammes. Removal of carbohydrate caused a rise of excretion, but to no greater height than with normal individuals. The fall, however, upon resumption of carbohydrate was less rapid than in normal cases.

In the severe cases in which almost no ingested carbohydrate could undergo metabolism and the sugar in the urine was formed from proteid, the acetone excretion could be diminished by the ingestion of carbohydrate but very slightly and this but very slowly, perhaps in the course of a month.

The author concludes that it is in those severe cases of diabetes only, cases in which a larger part of the carbohydrate food appears unconsumed in the urine, that a pathological acetonuria, pathological in the sense that a similar condition does not appear under like conditions in the normal individual, is found to be present.

The acetonuria of a case of diabetes has special significance only in cases where it exists in association with the ingestion of 100 gm. of carbohydrate food.

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[80] Zeitschr. f. Physiol. Chemie, Bd. xxii, s. 526.

[81] Loc. cit., Bd. xxiii, s. 431.

[82] Hirschfeld: Zeitschr. f. klin. Med., Bd. xxxi, s. 212.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, January 10, 1898, Dr. A. L. Mason in the chair.

Dr. W. H. Baker reported

A CASE OF UNDEVELOPED UTERUS WITH CONGENITAL ABSENCE OF THE LEFT OVARY.

Miss B. S., age twenty-eight, single, entered Free Hospital for Women, December, 1897, having been treated for some time at the out-patient department of that institution. She complained of severe backache, which was greatly increased at the menstrual periods. Her menstruation, which began at seventeen years of age, had occurred every two weeks during most of her life, until her treatment as an out-patient a few months before, the flow being excessive and accompanied by some clots. On examination the right ovary was found enlarged and prolapsed into Douglas's fossa. The uterus retroverted.

Operation of celiotomy on December 30th. On opening the abdomen I found the left portion of the uterus poorly developed, being only one-third its natural size. The left tube was exceedingly small and there was an absence of the left ovary. In its place there was simply a white line about one centimetre wide and four centimetres long. The right half of the uterus seemed fully developed, the right tube of normal size, and the right ovary fully three times its normal size. The size and weight of the ovary had undoubtedly been the cause of the backward displacement of the uterus. No adhesions were present. Section of the ovary was made, removing the lower two-thirds, sewing the wound together with interrupted silk stitches, and stitching its lower angle to the side and upper part of the uterus. The uterus was then brought forward, and stitched to the abdominal fascia by silk stitches. She is making a good recovery from the operation.

The case is of interest on account of the infrequency with which an absence of the ovary is found where there is any attempt at development of the uterus. Nature seems to have attempted to make up for the loss in this instance by the over-development of the right ovary, for this right ovary was found to be healthy and normal in its structure in every way, as proved by subsequent examination of the portion of the ovary removed, by Dr. W. F. Whitney and Dr. W. H. Grant.

I have several times observed cases where there was absence of the uterus and vagina, but even in these cases have been able to detect a more or less developed ovary; but this is the first instance where I have met a congenital absence of the ovary.

PULSATING ARTERIES.

Dr. J. W. Farlow: I show you here a patient who has two large, visibly-pulsating arteries, one on each side of the pharynx, right under the mucous membrane. To the finger they are very evident, and feel about as large as the radial. Several years ago I reported five similar cases[1] and later I saw seven. They are presumably abnormally situated ascending pharyngeal arteries, branches of the external carotid; and the possibility of the existence of such vessels should be borne in mind when operating on the posterior pharyngeal wall, especially in opening a retropharyngeal abscess.

Fig. 1 shows the appearance in this case and Fig. 2 gives the anatomy of the vessels of the region.

CHRONIC CATARRHAL PROCESS FOLLOWING SCARLATINA.

Dr. J. W. Farlow: I show you also a patient who came to my clinic five weeks ago. Several years ago he had scarlatina, which was followed by a swelling at the inner side of the left eye, with some external displacement of the eyeball. An incision at that time gave exit to nothing in particular, and was considered to have injured rather than helped the patient. Two years ago he consulted an oculist to find out whether something could be done to improve his looks, the eye prodtruding somewhat forward and to the left. There was no pain and vision was perfect. He was advised to wait.

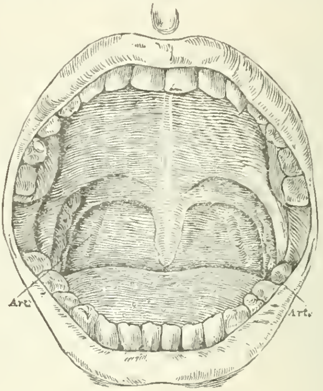

Fig. 1.

Shortly before coming under my care the swelling on the inner side of the left eye began to increase, and the eye was pushed forward beyond the bridge of the nose, outward and downward. There was much swelling above the eye and an irregular, sharp, bony projection in the neighborhood of the orbital plate. The eyelid was edematous and the lids nearly closed. There was also thickening of the bones below the orbit — the superior maxilla and malar. There was no history of nasal discharge, but the tears had overflowed for some time. The inner side of the orbit was painful to the touch and there was pain in the head.

An operation for supposed tumor had been proposed and enucleation of the eye.

When I saw him there was no discharge of pus or other secretion in the nostril. The middle turbinated bone was somewhat enlarged in its anterior portion and pressed against the septum. The recent acute and sudden increase of swelling with the absence of discharge in the nose led me to the conclusion that a blocking up of the natural drain of the frontal and ethmoid cells had caused the blocking up of secretion in these cavities with consequent distention, edema, etc. With a cold wire ecraseur I removed the anterior end of the middle turbinate and there appeared immediately a very profuse discharge of tenacious, glairy fluid which protruded from the nostril like an enormous polyp. When this was wiped away more came to take its place, like soap bubbles out of an inverted pipe. Then a thin watery discharge, and again more of the thicker substance, all without odor. The amount was estimated at about four ounces. The patient immediately felt relieved, and the swelling about the eye diminished, but the hard swelling under the eye was as before.

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[1] Boston Medical and Surgical Journal, March 31, 1897.

An examination of the fluid removed showed much mucus, a few fatty degenerated cells, fairly numerous desquamated, cylindrical, epithelial cells lined with many cilia, occasional leucocytes, and a little blood. Examination for organisms negative. Diagnosis: a chronic catarrhal process.

Subsequent treatment has consisted in removing more of the middle turbinated bone, curetting and cutting the ethmoid cells to secure free drainage and washing out the cavity.

Transillumination had shown both sides of the face to be dark and was of no positive value. Thinking that the apparent thickening of the bone under the eye might be due to antrum disease, I punctured through the inferior meatus and succeeded in washing out a very large amount of grayish, flocculent, odorless secretion. When the antrum was empty transillumination showed a faint outline of light under the left eye.

The patient is still under treatment; but the amount of discharge through the middle turbinate is very much diminished, the swelling about the eye is much reduced, and the eye, as you see, has returned somewhat to its normal position, and he feels much improved. I suppose it will be necessary to drill into the antrum through the alveolar process in order to secure free drainage, but I do not care to do this until the middle meatus is much freer, and the opening through the turbinate made larger.

It seems to be a case of disease of the frontal sinus, the fronto-ethmoid cells, ethmoid cells and the antrum. It is possible that there is a communication between the upper cavities and the antrum, and that the latter has become affected from the former.

The discharge of pus through the opening of the middle turbinate after removal of its anterior end shows that there were ethmoidal cells in the middle turbinate.

Dr. J. W. Farlow also read a paper on

SOME FORMS OF ADENOID DISEASE WHICH ARE OFTEN OVERLOOKED; AND ON CONDITIONS WHICH MAY SIMULATE ADENOID DISEASE.[2]

DR. G. A. LELAND: It is noticeable in the literature lately that whenever any one brings up the subject of adenoid vegetations before a society, he makes some excuse for introducing so trite a subject. I do not think the paper to which we have listened to-night needs to be criticised because it was written on a trite subject, but commended because it has brought out some valuable points. It is evidence of progress that the profession recognizes more and more that adenoid vegetations do not confine themselves in their exhibition of symptoms to simply keeping the mouth open, to producing the characteristic facies, but that there are various other manifestations of them even where this classic symptom is left out. Dr. Farlow has mentioned a number of such symptoms, but only lightly referred to diseases of the ear. In my experience it seems to be notable that some affections of the ear, especially those having the symptoms of earache and tinnitus aurium, are the most important ones which can be attributed to the presence of these growths; and it is the first variety which he mentioned, the catarrhal adenoid so called, the diffuse adenoid spread evenly over the naso-pharyngeal space without any swelling or tumefaction, to which often may be attributed these symptoms referable to the ears which are usually thought to have any other cause than adenoid vegetations. When Dr. Hooper read his paper before the Suffolk District Society, in 1886 I think, Dr. Blake showed that if the fossæ of Rosenmüller were obstructed by naso-pharyngeal lymphatic hyperplasia or otherwise, the Eustachian tubes could not have their proper movements, and therefore the ear was not well ventilated nor drained; hence we have the symptoms directly caused by closure of these tubes, namely, tinnitus and earache, followed frequently by inflammatory conditions with rupture of the membrana tympani.

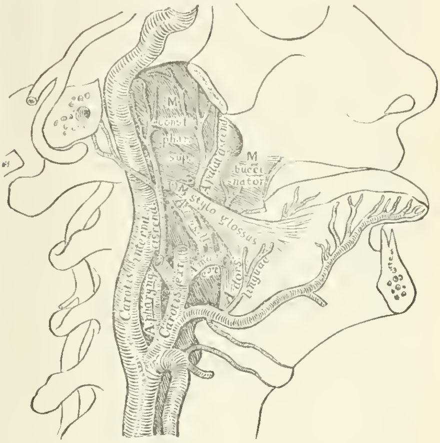

FIG. 2.

I stated last summer before the Massachusetts Medical Society, and I would like to say it again, that I do not believe, with the exception of traumatism, a child under six years of age ever has earache without adenoids. I do not think it has occurred in my experience to find such a case of earache without the presence of this obstructive growth or folds of mucous membrane thickened by it in the sides of the naso-pharynx; and certainly many cases of persistent earache are kept up by this same factor, by this same obstruction to the drainage and ventilation of the tympanum. It has been very interesting to me to observe cases of pulsating tinnitus. Congestion of the adenoid mass in the fossa of Rosenmüller and vicinity, the sound of which is telephoned to the ear by the cartilage of the tube, keeps up this pulsating, hammering tinnitus from which some patients so often suffer, which symptom is usually referred to some obscure lesion, brain tumor or something of the sort. I have often found if I can get my digital curette into that fossa of Rosenmüller and scrape it clean that this tinnitus usually ceases immediately. It may come back again, very frequently comes back temporarily from congestion of the space after the slight operation; but if this fossa can be kept clear the pulsations disappear.

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[2] See page 365 of the Journal.

There is one common factor which Dr. Farlow has not referred to as productive of mouth-breathing, and that is habit. We find so many mothers who forget to tell their children to keep their mouth shut and we find adults who have never breathed through the nose because they never contracted the habit of doing so. A little while ago a man of seventy-five years of age came to me complaining of catarrh of nose and naso-pharynx, with the nose perfectly free, with nothing but congestion of the turbinates from disuse, and dryness of the pharynx from unprepared air; and the only reason for breathing through the mouth was habit.

The symptoms mentioned by the reader, namely, deformities of the teeth and jaws, and small, undeveloped noses, are the result of this habit of mouth-breathing as much as of physical obstruction. I remember hearing the late Professor Monroe speak before a teachers' convention upwards of thirty years ago, when he said if the nose were only habitually used the spaces would grow larger. That impressed me very much; and I think we may see from day to day many people who never use their noses for respiration, and therefore haven't any proper nose to use, only two very small useless holes in the face; just as fishes in Mammoth Cave have no eyes because they live in darkness and do not need them.

There is one more observation which I would like to make on this catarrhal adenoid, so called, and that is we occasionally see what seems to be nothing but a diffuse spreading out of adenoid vegetations over the whole naso-pharynx in patients of eighteen or twenty or even much older, and we are surprised that they do not disappear if we remove them with the curette but immediately recur. I have found that this state is not always due to simple lymphatic hyperplasia, but is specific. A few years ago a young lady with muffled voice and a discharging ear was referred to me by an aurist because the naso-pharynx would not remain free after he had removed the adenoids. The naso-pharyngeal surface was very much thickened, apparently a case of hyperplastic lymphatic tissue in that space. I operated on her in a most thorough manner with but indifferent success. I had occasion about that time to treat this young lady's older sister for severe persistent headache apparently referable to the nose, but which defied the usual treatment directed to the intra-nasal structures; and afterwards appeared to present the characteristics of ordinary specific headache. Relief followed almost immediately the exhibition of the iodides of potash and mercury. Thinking the taint might be in the family, I gave the sister the same treatment, and was very much gratified to see the lymphatic hyperplasia diminish and the ear stop running. This case is not unique. Many a patient presenting the symptoms alluded to needs only iodide of potash to remove a taint which has been forgotten, or which is hereditary, as in the case of these sisters it must have been.

Dr. Farlow speaks of deformities or excessive size of the teeth causing mouth-breathing. While this is perhaps true in a few cases, it is much more common and plausible to find that mouth-breathing is the cause rather than the result of deformities of the teeth and of the jaw. From this point of view it is evident that with the mouth open the upper jaw is pressed upon and held down by the weight of the upper lip and of the cheeks, and, in addition, not having the under jaw in its proper place where the teeth should close inside of those of the upper jaw, the latter are not pressed outwards and kept up to their normal rate of growth. Hence if we look for it, I am sure we shall very frequently find an under jaw corresponding to the age of the patient with an upper jaw considerably smaller.

A few years ago a boy was referred to me whose upper jaw fitted into the lower one unevenly to such a degree that the teeth upon it, had they been present, would not have touched any of the teeth of the lower jaw; but in this case the teeth had been all removed, since not having their proper support and their proper resistance nutrition had been lost and they had decayed. In this case it was evident that the lower jaw was twenty-two years old, the age of the patient, and that the upper one was about twelve years old. And it was asserted by the patient and his parent that for the last several years the under teeth had struck wholly inside of the upper ones.

While not exactly germane to the subject, I would like to say a word as to the absence of nasal respiration, whether from obstruction or habit, having much to do with the recurrence of adenoid vegetations. The late Dr. Wilhelm Meyer, of Copenhagen, reported 102 cases in his first list, and a number of years afterwards said that in this list there were 13 recurrences. It seems to me that this proportion is much larger than we now have, the impression being that three to four per cent. of recurrences is about the proper number. As far as I can learn from observation, recurrence seems to be directly attributable to non-respiration through the nose after operation: so that the causes which doubtless contributed to the occurrence of the hyperplastic growths continue to be a factor in their recurrence. Hence, I make it an essential point to see that the nose is free and that respiration is properly performed before the operation for the removal of adenoids is undertaken.

This was brought to my attention in a striking manner a few years ago when a young man of about ten or twelve years of age was referred to me for persistent chronic cold. I found extreme occlusion of the upper air-passages. The naso-pharynx was as full of adenoid vegetations as I ever saw one, so that the mass pressed heavily upon the velum palati. The nose was also tightly closed by engorgement of the turbinates, and the lumen entirely obliterated. It occurred to me that to remove the adenoid vegetations from the naso-pharynx would not restore respiration through the upper-air passages, and that therefore the nose demanded the first attention, after which the operation of adenectomy would have its usual brilliant result. The intra-nasal engorgement was reduced by gentle cauterization with acids until it was perfectly free, and a number of weeks was allowed for complete recovery from the intra-nasal treatment before the time for operation was appointed, when I was much astonished to find the naso-pharynx perfectly free, the adenoids having completely disappeared. The hearing which had been somewhat diminished from occlusion of the tubes had been restored, and there was nothing to be operated upon. What in this case was accomplished by accident, as it were, I have been enabled to accomplish since by intention. Hence, I have learned to consider it of extreme importance to get rid of intra-nasal obstruction first, which will be of great assistance in the treatment of adenoids whether by removing them or allowing them to disappear when brought under conditions of normal respiration. I have thought that perhaps this may be the reason that some of us have had recurrences for which we could not account, and I am sure I can call to mind cases of recurrence where the only reason has been that the parents have not insisted upon the establishment of the habit of nasal respiration after the operation has been successfully performed.

As I said in the beginning I wish to give my hearty commendation to the reader for his paper which has enabled us to bring up this subject for renewed discussion.

Dr. A. Coolidge: I think this paper of Dr. Farlow's is very timely. It draws attention to mistakes made by not fully recognizing the symptoms which may be due to adenoids. As we see more children's post-nasal spaces, we see that a large number have a certain amount of hypertrophy; and the question of advising operation comes not so much from the existence of something which can be demonstrated as adenoid tissue, but whether any symptoms arise from it. The writer has shown that mouth-breathing is not necessarily the result of adenoid disease. Any obstruction in the respiratory tract between the pharynx and the nostril may produce mouth-breathing.

I cannot add anything to Dr. Farlow's list, except perhaps to draw especial attention to one or two conditions which occur to me as causing obstruction in children without adenoid hypertrophy. Many children do not know how to blow the nose; muco-purulent secretion collects, and there is nasal stoppage in consequence. As Dr. Leland says, this condition will sometimes cause adenoid hypertrophy which did not exist before. The scabbing of the anterior part of the nose in young children is a very common cause of mouth-breathing. Another cause, which is not quite so common, is idiocy. An idiotic child has not proper control of the soft palate and cannot get it down out of the way of the post-nasal space.

A diagnosis of adenoids should not be made from obstruction alone, but also, as the writer has said, the absence of obstruction does not rule out their presence. The symptoms of non-obstructing adenoid tissue opens a difficult subject. Dyspepsia, nervousness, anemia, frequent colds, thick voice, post-nasal catarrh are sometimes relieved by removing glandular tissue from the vault; but we cannot say that the patient is necessarily going to get well as soon as that adenoid is removed. It is well to remove it, but we should not give too favorable a prognosis, otherwise we shall have the discomfort of having the patient after operation no better than before. The same thing is true in operating in adenoids where we are not sure that the adenoid is the cause of the obstruction. The more adenoid tissue we get out the better our prognosis may be.

There is one condition of interest in connection with the remnants of glandular tissue in the naso-pharynx, and that is acute tonsillitis. A case of acute tonsillitis often shows constitutional disturbance out of all proportion to the local disturbance of the faucial tonsils. All of the glandular tissue of the upper respiratory tract, the faucial tonsils, the pharyngeal tonsil, the small glands of the pharyngeal mucous membrane, and even the lingual tonsil may be involved. It is reasonable to infer that a large amount of glandular tissue in the post-nasal space will invite a more severe invasion of the disease.

In regard to the small size of the nose. This is a very common cause of periodic nasal obstruction. I think, as Dr. Leland has said, that in most of these cases we can trace the cause to lack of good nasal respiration in the past, during the period of development; and for that reason I have always considered in the adult that a too narrow nasal cavity pointed very strongly to the probable existence of mouth-breathing in former years. One of the results of continued mouth-breathing is the narrowing of the upper jaw and with that the narrowing of the nasal cavities, so that the space between the turbinates and the septum is narrow and easily becomes occluded by the slightest swelling of the turbinates.

Dr. DeBlois: The long history of ills that seem to follow the presence of adenoids reminds one of the histories you find in the ordinary newspaper on the evils of some much-talked-of disease. Everything from headache to gout is caused by this one malady. Of course a great many troubles do follow the presence of adenoids, or more properly speaking, the habit of mouth-breathing. Almost all of this subject was covered in my article on "Mouth-Breathing," published in the Boston City Hospital Reports for 1896. But there is a little point about the teeth which I do not think Dr. Farlow quite brought out, and on which I differ from Dr. Leland, and that is, the matter of cause and effect. I believe that the mouth-breathing is largely caused by the defective placement of the teeth, and their position is not caused by the presence of post-nasal obstruction. I would read the following from the City Hospital Report of 1896:

> In these cases (namely, undershot jaw) the closure of the lips is impossible. I have tried over and over again to force patients to keep their lips closed. After a short time the orbicularis oris muscle becomes tired and the upper lip will draw back and they will breathe through the mouth, although the nares may be perfectly patent. Dr. Leland seems to think that the presence of the adenoids in the respiratory tract will produce this deformity of the teeth, but in that case why should not all those who have had adenoids all through early life have the deformity and why should we not find more cases of undershot jaw than we do?

Dr. Langmaid: Although so little is known now in addition to what Meyer told us a good many years ago, such a paper and such discussion is of the greatest value to the community. I should draw from my experience that the medical community is pretty well alive now to the existence, the widespread existence of adenoma, and, in the absence of any explanation for certain phenomena, generally refers the case to the specialist for examination. I say that is my experience. It is very fortunate that it is so. Better see a dozen cases referred to the specialist where there is no adenomatous growth than to allow one to go unnoticed. Dr. Farlow has spoken of symptoms which might be caused by naso-pharyngeal growths but which are really due to other causes. One or two of these symptoms have been omitted. They are curiosities and are not common. One is extreme narrowing of the posterior coanæ. The remarks with regard to the narrowing of the nostril have referred to the narrowing of the anterior nostril, but occasionally one will find that the posterior coanæ are not at all in proportion to the anterior openings. I remember a case where we supposed we had an adenoma to remove and it was found to be a bony cyst which the finger entered and that was due to congenital syphilis. Syphilis has been spoken of by Dr. Leland, as I understand, secondarily as a cause; and I believe with him it is often mistaken for true adenoma. But enough cases of congenital syphilis have now been reported to show that it exists in the naso-pharynx before it is discovered anywhere else, even in the absence of the Hutchinson teeth. This case which I referred to I saw go through the stages of tertiary syphilis with loss of bones of the nose. I think it was Dr. Leland who said that one must not expect or prophesy too much with regard to the breathing after the removal of adenomatous growths on account of the small size or inaction of the nares. Wherever the child is large enough to treat itself or to allow itself to be treated by parents or attendants, it is always best to pay special attention to this, because it avoids the dissatisfaction which has been spoken of.

Among the phenomena which may be referred to the presence of adenoma that of imperfect speech is not unusual. Dr. Goodale and myself saw a case only a few weeks ago where the child had imperfect speech, the kind of imperfect speech to which I referred some weeks ago here where the child had never learned to talk from lack of development. It was thought, and very properly, by the attending physician that that might be owing to hypertrophy of lymphoid tissue in the naso-pharynx, but there was none. Better make the mistake of having an examination made than to allow the case to go unexamined. Many children exhibiting such phenomena demand examination, many demand operation; possibly some do not. I believe myself, and I think it to be the sense of those who do operations, that the mistake had better be on the side of operating whenever symptoms point to obstruction in the naso-pharynx.

There is one interesting point, and that is with regard to the influence of a small mass of adenoma producing repeated colds. The colds will be repeated until that mass is removed. That I have seen more than once. It would seem to act as the hypertrophied tonsil does. Owing to the atmospheric influences perhaps it swells; a large amount of secretion takes place, and the whole upper respiratory tract is affected by it. It seems to me that, with regard to these growths, one had better be rather dogmatic, and where they are seen or suspected they should be removed.

It is almost impossible to add anything new to what has been written and said. I think Dr. Farlow's paper is timely and interesting, and the discussion which has followed has called our attention to new points.

Dr. Blodgett: Attention has been called to the deformity or malformation of the upper jaw as a symptom of, or cause of, mouth-breathing. There is one condition with which I think this has occasionally some relation which I believe has not been mentioned, but which I have noticed sufficiently often to make me believe it is worthy of attention; that is, the enlargement of the palatal arch, with advancement of the alveolar process and spreading of the teeth, which I believe is sometimes due to the faulty habit of thumb-sucking in infancy. How far this may correspond with the experience of others I do not know, but I believe attention has already been called to it in relation to mouth-breathing. The faulty habit of allowing children to constantly distend the upper jaw by sucking the thumbs or the fist is a condition to which the attention of nurses or mothers should be directed in order to prevent as far as may be a subsequent obstruction of nasal breathing from deformity of the nasal passages or undue distention of the alveolar processes with advancement of the dental arch and impaired closure of the lips, from which later in life the patient may not be able to free himself. I have seen numerous cases in which I could detect no cause for mouth-breathing except the inability to close the lips due to extreme advancement of the upper teeth from this habit. It seems to me it would certainly remove one cause of mouth-breathing and nasal obstruction if attention should be called to this faulty habit at a time when it might be corrected.

Dr. J. W. Farlow: In order to teach children to breathe through the nose and expand the chest, I am in the habit of telling parents, after an adenoid operation, to measure the child's chest, inflated and empty, and write the measurements on a piece of paper with the date. The parent is then to see to it that the child practises deep nasal inspiration with closed mouth for several minutes twice a day. At the end of a month the chest is measured again and the child with his record is brought to me. In this way the parents and child are interested in something definite and strive to make as good a record as possible, and it is sometimes surprising to see the progress made. On November 15th I operated on a child out of town. She was brought to me a few days ago, and I found that she had gained two inches around the chest.

Dr. Paul Thorndike and **Dr. J. B. Ogden** presented a paper entitled

REMARKS ON CYSTINURIA, WITH REPORT OF A CASE OF CYSTIN CALCULUS IN THE MALE BLADDER.[1]

Dr. E. S. Wood: There is very little to be added to what Dr. Ogden has said in regard to the subject of cystinuria which is not already very old. One point is with reference to the rarity of the condition. I have seen perhaps twenty cases of cystinuria only, in my experience of more than twenty years in the examination of a great many specimens of urine; and during that period of time perhaps, as is usual with other rarities in medical cases, half a dozen occurred in one year. Cystinuria is not always a constant condition. In many cases it has been found to be intermittent, and a patient may have an intermission of varying periods of time, the cystin being found in the urine continuously perhaps a year or more and then disappearing to reappear at some uncertain period afterwards; but, on the other hand, there are a good many cases which are not intermittent, and in which cystin is constantly present and can always be found.

One point about cystin, which shows its connection with sulphuretted hydrogen, is that it contains 26 per cent. of its weight of sulphur in its molecular composition, and that explains the formation of sulphuretted hydrogen wherever decomposition of the cystin takes place in whatever fluid it happens to be contained.

As Dr. Ogden has mentioned, there is no disturbance of the general health due to this condition of things, that is, the fact that cystin is formed in the person's economy produces absolutely no symptom whatever unless it happens to separate within the urinary passages in crystalline form, and in that case it produces the local symptoms of mechanical irritation, focal irritation of the kidneys or of the pelvis of the kidneys or the lower membranes.

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[1] See page 367 of the Journal.

In one case which I reported to this Society a number of years ago, the patient, who was a roofer by occupation, only knew that he had colic, so that sometimes he was obliged to bend over the back of a chair to quiet the pain. The first thing that called attention to his urinary passages being, that, when micturating from one roof to another below, a companion on the lower roof asked why he was throwing those pebbles down. Picking up some they proved to be cystin concretions about the size of half a pea. I had a phial full, which the patient gave me, and which were all composed of pure cystin.

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BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

H. C. BALDWIN, M.D., SECRETARY.

Regular Meeting, Thursday, December 16, 1897, Dr. Edward Cowles in the chair.

Dr. Walter Channing read a paper entitled

MEDICAL EXPERT TESTIMONY IN THE KELLEY MURDER TRIAL.[1]

Dr. C. P. Bancroft, of Concord, N. H.: This case was very interesting to me, especially as the opportunity was afforded me of guiding both sides in the selection of their experts. Fortunately the prosecuting attorney, Mr. Nason, was eminently fair-minded and was willing to be advised in the choice of his experts.

My first three visits were with Kelley alone. The others did not have the opportunity to see the prisoner alone. Although in some respects the private interviews were more satisfactory, still the result of both private and more public interviews was practically the same. I cannot say that I saw any particular difference in Kelley examined alone privately by myself at different times, and Kelley examined before all the others. I was pretty thoroughly convinced that Kelley was not acting any part, that he was simply himself.

The termination of the case was most satisfactory to all of the experts. For once expert witnesses were brought into proper relations with the court and the case. Instead of perplexing the case, it did seem as though we had been of material assistance to the court, and that our evidence threw much light upon what would otherwise have been quite puzzling. The directness with which justice was obtained in this case was undoubtedly largely due to Chief Justice Doe's medico-legal decisions in the past. His rulings are models of brevity and clearness. The following quotations from the case of State *vs.* Jones are worth noting and were embodied by Mr. Ryan in his opening. Judge Doe delivered these opinions at the June term, 1871:

> "The verdict should be 'not guilty by reason of insanity' if the killing was the offspring or product of mental disease in the defendant."
>
> "Neither delusion, nor knowledge of right or wrong, nor design or cunning in planning and executing the killing and escaping or avoiding detection, nor ability to recognize acquaintances, or to labor, or transact business, or manage affairs, is, as a matter of fact, a test of mental disease, but all symptoms and all tests of mental disease are purely matters of fact, to be determined by the jury."
>
> "Insanity is mental disease — disease of the mind. An act produced by mental disease is not a crime."
>
> "The defendant is to be acquitted on the ground of insanity, unless the jury are satisfied beyond a reasonable doubt that the killing was not produced by mental disease."

Judge Doe's definition of insanity was broad and inclusive, and had an important bearing in the Kelley case. He called insanity mental unsoundness. Instead of attempting a long involved definition of the term insanity, which we all know is impracticable, he recognized the word as generic rather than specific. Insanity is a symptom rather than a special form of mental disease. In this light Kelley was regarded as insane only as he manifested one phase of mental unsoundness, namely, imbecility or arrested development, the result of traumatism.

The fact that medical experts were arrayed against each other, and were not prevented by counsel on either side from coming together in mutual conference, and that they were individually called upon for an unbiased expression of their opinion is certainly interesting, and may afford some precedent for the guidance of jurists and medico-legal experts in the future.

Perhaps I may have felt a little more strongly concerning Kelley's delusion than the other experts, as a result of my more frequent and extended visits upon him while in the jail. At all events I had come to think that Kelley really did believe in his delusion of the devil. I have seen an interesting letter which he has written since his commitment to prison in which he asserts his guilt, protests against the charge of insanity and imbecility, and insists that great injustice was done in that he was not hung. He concludes his letter by saying if the people of New Hampshire are satisfied with that sort of justice he will be.

Dr. W. A. Gorton, of Providence, R. I.: It seems rather superfluous for me to add anything to what the paper of Dr. Channing and the remarks of Dr. Bancroft have already placed before you. I am exceedingly gratified to bear testimony to the direct way in which the facts of this case, or the facts as they seemed to us, were brought to the notice of the court, and I wish more especially to bear testimony to the breadth of mind shown by the Attorney-General and the County Solicitor of Strafford County. I think it is most unusual to find in lawyers such a complete disinterestedness as was displayed by these gentlemen. They were under the greatest stress, and had every incentive to carry the case to the bitter end, in view of the feeling of the public toward the prisoner; but so great was their innate honesty, as it seems to me, that when they found in spite of their previously formed opinion of the prisoner at the bar that he was a very strangely compounded individual they were perfectly willing to allow a full and free consultation of the experts summoned by themselves and by the defence and then to allow them to testify as they did in favor of the prisoner. It would be exceedingly gratifying if that spirit were more widely spread among the legal profession than my observation hitherto has led me to suppose it to be.

Notwithstanding the view we all took of this case, the point of irresponsibility perhaps remains without definite settlement. I thought the man was pathological to a degree that rendered him irresponsible to the extent to which we testified at the time. He did not present to me the picture of a purely criminal degenerate. I have seen a good many such, and he lacked many things which that class have, and had a great many things which those people do not have. The fact of his injury, his subsequent epilepsy, my belief that in certain important respects his mind was left after the receipt of the injury pretty nearly in the same condition that it was when he received it, decided my opinion. That is to say, he was injured at the time when he possessed all the predatory instincts of early childhood — stealing, running away, etc., without any real moral perception; a child at the age of four will steal anything desirable in the way of sweets, etc., will deny the theft when told about it, but will, when faced with evidence of guilt, admit it, promise reformation and in a brief time repeat the same or similar acts. This mental state may be continued for a considerable period; but when the general, all-round mental development reaches a certain state these traits disappear. With this boy there seemed to be a continuation of this mental state, a lack of development amounting to moral imbecility, so that he seems to have about the same sort of appreciation of the obliquity of his actions as certain children of seven or eight or younger. I was convinced that the crime he committed presented itself to his mind in no more serious light than the various peccadillos he had been committing during the rest of his life; he was about as sorry for stealing an apple from the village grocer as for committing this most atrocious crime. He regarded himself with a great deal more self-respect in another way, for having committed the murder than for having committed the theft of the apple because the latter act did not bring him into notoriety and the commission of the murder did. When he was brought before the court for preliminary arraignment he expected to be the occasion of a great ceremony. The sheriff had planned the matter so that when they reached the court-room there was almost nobody there, and he was mortified and grieved about what he considered public neglect.

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[1] See page 366 of the Journal.

I do not know exactly whether his belief in the devil, as he expressed it, could be regarded as rising to the dignity of an actual delusion. Sometimes I thought it did; and at other times it seemed a sort of reminiscence of some of his early religious teachings rather than having the dominating character at any time in his consciousness that a thoroughly well-systematized delusion of that character would possess. He related to me, without any suggestion on my part, in the presence of Dr. Bancroft at my first interview, in a striking way an experience he said he had with the devil in the jail. The devil did not enter the room so that he saw him, and did not speak aloud to him, but, he declared, so influenced him that he said he knew it was the devil. He said the devil told him that he could tear off the selvedge of his blankets and make a rope with which to hang himself to the bars of the cell. He said he thought the devil had two purposes in view: first, to cheat the law, and next to preserve his power over him into the next world; that the devil had some fear apparently that should he survive the term of his compact with him he might through true penitence escape and go to heaven; whereas if he killed himself before the expiration of that time his hold on him would not be lost.

The question whether or not the medical expert should testify as to the degree of responsibility I think is very important. I agree with Dr. Channing that we have the right to express our opinion, but I think we were placed in a most fortunate position in New Hampshire, in that after all the final decision of the case rested upon the court and not upon our statement or opinion. Of course, it is an exceedingly difficult matter to fix the degree of responsibility in a person not typically insane in some form or other, but I believe the expert may safely be allowed to state in general terms whether a person alleged to be insane is of full or of limited responsibility, together with the reasons for such opinion.

Dr. Fisher: This is the second case in my experience where an insane man has committed homicide for the sake of money. The other case was Green, the Malden murderer. It is exceedingly unusual for any insane person to commit crime resulting in the securing of large sums of money, robbing of banks, for instance. Paronoiacs never commit crimes of that sort, usually acting under the influence of delusion or hallucination. In this case the fact of epilepsy was concealed from the public so that we had nothing to explain the case as it was very well explained afterwards by the discovery of that fact. In a case in Vermont where I am making an examination of a woman who has committed a homicide, the same practice seems to prevail of examining the prisoner in the presence of the other experts and of the counsel, and the last time a reporter was present and the interview was taken down stenographically. The experts for the defence have had unlimited access to the prisoner; but the experts for the State are hampered in that absurd way, and whenever a question is asked which has any significance and is connected directly with the events of the crime the counsel for the defence will interpose objection and say that question cannot be answered, so that the examination is more or less of a farce.

Dr. P. C. Knapp: The epilepsy in the earlier life of the patient, with the manifestation later of the distinct moral imbecility, calls to mind the theory which has been so ingeniously urged by Lombroso, that the degenerate criminal is merely a case of moral insanity and that moral insanity is a manifestation of epilepsy. I suppose very few men would accept Lombroso's theory as a finality by any means, but certainly this has rather an interesting bearing in that respect. It has seemed to me that in this case, as in other cases, the State of New Hampshire was very much superior to some other States in its dealing with expert testimony in medico-legal matters. Certainly, in view of the fiasco that a committee of this Society met with last winter in conferring with the bar association with reference to expert testimony in this State, the action of the bar and bench of New Hampshire is most earnestly to be commended to the bar and bench of Massachusetts.

The question of limited responsibility is one of very distinct interest. This case may well be contrasted with the case I had occasion to cite at one of the meetings of this Society some time ago, namely, the Shortis case, which was tried in Montreal a few years ago, where the counsel and the court went back to the most absolutely benighted medieval opinions of the English common law as to the ability to distinguish between right and wrong, and a man most manifestly insane from start to finish was in consequence hanged. I suppose such an idea of limited responsibility as was presented before the New Hampshire court, if brought before the court in Montreal in that case, would have resulted in immediate paralysis of judge, jury and counsel. But certainly such a method of dealing with expert testimony as is shown in this case is most to be commended, and the harmony which was manifest shows that if the court would limit expert testimony to men who were experts, instead of letting everybody testify as an expert whether they knew anything about the matter or not, we could have perfectly harmonious, respectable and trustworthy expert testimony; but in Massachusetts, and still more markedly in New York and Illinois (as seen in the Luetgert case), expert testimony is sometimes apparently testimony given by men who know nothing of the subject.

Jabez Fox: It is interesting to me to notice how fully the respect which the bar and bench have for experts and expert testimony is reciprocated. I agree with Dr. Channing as to the absurdity of the hypothetical question. It is rather curious to notice how that is defended. It is said that if you ask an expert to give his opinion upon the evidence, you are putting the expert in the place of the jury; you are asking the expert to decide the facts. In order to avoid this we put upon the jury this task: They must remember the hypothetical question, which may be twenty pages long; they must remember the answer to the question; must remember all the testimony, and decide how far the testimony supports the hypothetical question; and if they find it does not support the hypothetical question, they must decide what the answer should be upon the true facts in the case.

Dr. E. Cowles: I do not think I can add anything to the presentation of the case as it has been made. One point, however, has not been brought out, perhaps a minor one, which gave me an impression of the pathological condition of this prisoner's mind, with reference to the question of his having a delusion with regard to the devil. I think his idea of having seen the devil, and what initiated the conception, is perfectly well accounted for by the probability of his having had a hallucination of sight, of seeing the devil, in his early attacks of epilepsy. There were several things in the evidence that pointed in that direction, that he had memory of having seen this vision. He did not build up the delusion farther than to attach to it the ordinary story of compacts with the devil of which he may have heard, and although he went so far as that in constructing what could be called a systematized delusion, still it was not operative with him through all the years of his life until after the time of the murder. He did not steal on account of his arrangements with the devil, but stole upon his impulses to do so; all such acts were what he would have done had he had no such idea of the devil. On occasions he referred to that notion as an explanation, but it did not seem to concern him very much in his ordinary way of life; this delusional idea was not what influenced him at the time he committed the thefts. All these things, as he said, were quite independent of that influence. It was a theoretical explanation which he sometimes resorted to, of his inability to refrain from certain acts. After he got into jail, and began to think the matter over, and was asked questions about it, then the subject being prominent in his mind he did think out, and systematize to some extent, this notion, not really to the extent of its arriving at the dignity of delusion, but still carrying it much farther and systematizing this notion in a more formulated way than he ever had before. But it seemed to me that a memory of the hallucination, and the slight effect it had upon his mind, was quite natural as the result of a temporary pathological state, but that his mind worked in a way to find motives that accounted for the freedom of his conduct from the controling influences of delusional ideas. That harmonizes, it seems to me, with the fact that it was not like an insane mind not to act upon his delusions.

Dr. Channing: I have nothing to add to the discussion. One or two points Dr. Bancroft referred to I did cover with my paper, but it was so long that I skipped them. For instance, in reference to Kelley's first entrance into the bank and what took place there and what he intended to do, I have stated in the body of the paper, but I left it out in the reading as not being necessary to the story as I endeavored to detail it to night.

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Recent Literature.

Diseases of the Stomach. By John C. Hemmeter, M.D., Ph.D., Philadelphia: P. Blakiston, Son & Co. 1897.

In this work the author has designed a complete text-book of the diseases of the stomach.

The book is divided into three parts.

Part I deals with the anatomy of the digestive tract, the physiology of digestion, and the methods of examination and diagnosis employed in the study of the physiological and pathological conditions of the stomach.

The introductory chapters are brief outlines of the prevailing conceptions upon the anatomy and histology of the digestive tract. They contain the latest knowledge upon the subject, including the very recent work of Mall and of Bensley.

The consideration of the Physiology of Digestion is full and detailed. Much of the work shows evidence of the personal experience of the author in the determination or confirmation of the results cited. The knowledge in regard to some of the functions of digestion, as, for instance, the motility of the stomach, has received important additions from the original work of the author. The presentation of the subject is, however, open to serious criticism. There is a lack of scientific and critical judgment in the determination of the accuracy or value of the facts presented, and in the development of the conclusions derived from the association of these facts, which detracts seriously from the value of the whole presentation. It is not always possible for the reader to separate the facts and conclusions which are the result of investigations scientific in each step, from those which rest upon doubtful foundations or are theoretical.

The evidence in regard to the motility of the stomach wall and of the movements of the food, obtained by the use of the author's method of introducing an intra-gastric bag connected with a manometer and kymographion, is of great interest. It may be questioned whether the movements of the stomach under stimulation from the presence of the intra-gastric bag are similar in character to the normal movements. The results obtained are, however, in keeping with those of Moritz, and with more recent observations upon the subject obtained by the use of the x-rays without such extraordinary stimulation.

The author in retaining the theory of the absorption of fat in emulsion of natural fats is completely out of touch with the results obtained in recent investigations of this subject. The general evidence of these investigations points against this hypothesis and in favor of the theory of absorption of fat in the form of fatty acids and soaps. We do not agree with the author in regard to several of his statements, as, for instance, that lactic acid is present in amounts which can be determined by the ordinary tests, in the early stages after the Ewald meal, or that fatty acids do not occur in the normal gastric digestion, or that the test for erethrodextrin in the gastric contents one hour after an Ewald meal indicates an abnormal condition of secretion of hydrochloric acid.

The consideration of the general methods of clinical examination of the stomach is thoroughly adequate, and the personal suggestions of the author in regard to their application are very useful.

The method of determining the size of the stomach, by the intra-gastric bag connected with graduated water bottles, suggested by the author, commends itself to us.

The chapter upon the indications obtained in the examination of expressed fragments of the gastric mucosa deserves attention. We doubt whether pathologists would agree to Dr. Hemmeter's claims in regard to the value of this means of diagnosis. The subject is, however, worth more consideration than is accorded it at present.

The second division of the book contains a consideration of the general means and methods of therapy in diseases of the stomach. The chapters upon dietetics are full and up to date. The author rightly emphasizes the importance of this branch of the subject. The scientific application of the results of investigation in metabolism and in the physiology of digestion to the doctrine of dieting is carefully outlined. The adaptation of this knowledge in the diet tables and in the author's suggestions in regard to treatment of special conditions is fragmentary, perhaps unavoidably. The work would have been more useful if it had been more condensed and more direct.

The chapter upon the use of alcohol is interesting, as it brings the subject up to date, including the results of the recent investigations of Chittenden.

The chapter upon the use of mineral waters in disease of the stomach is of special value, since this is the first of the text-books upon the stomach which includes a consideration of the relative usefulness of the American waters.

The author rightly argues against the use of pepsin preparations in disorders of digestion. We should have applied the same judgment to pancreatin. The author, however, claims scientific evidence of distinct benefit from the use of this preparation in conditions of atrophy of the gastric mucosa.

In the third division of his work, the consideration of the special diseases and diseased conditions of the stomach is taken up. In the scheme of classification and the consideration of the special characteristics of the separate diseases, the author follows thoroughly intelligible principles. The conditions are differentiated, as far as possible with reference to the special disability of function, or the special organic lesion, which is most apparent and fundamental in the condition. In the consideration of the pathology, symptomology and treatment of the separate diseased conditions, the author gives evidence of an extensive experience in the care of these conditions, and of a thorough familiarity with the literature of stomach disease, but not throughout, it must be admitted, of a profound knowledge of the subject.

The considerations upon the treatment are all excellent, those upon the pathology and intimate character of the diseases not as good. These latter considerations do not come so directly from the experience and induction of the author. The principle of treatment advised throughout is the adaptation of the diet to the existing pathological conditions. The indications which are always foremost are rest of the organ or function diseased, and proper nourishment of the organism. The practice of lavage as an aid to the accomplishment of these ends is strongly recommended. The use of drugs is kept well in the secondary position which it should occupy. In no text-book on the subject is this thoroughly scientific scheme of treatment more emphasized. The author cannot be too highly commended for its advocacy and practice.

In regard to the special characteristics of the separate diseases, we differ with several of the statements of the author. The statements in regard to the occurrence of lactic acid in the gastric contents, particularly that which implies that the presence of this substance may be an early symptom of carcinoma of the stomach (page 538), are calculated to give an incorrect impression. The formation of lactic acid is not, as the author implies, consequent upon stasis of contents alone (page 529), but upon a combination of this condition with an absence of HCl secretion and of diminution of pepsin. That is, upon a combination of stasis with atrophy of the mucosa. Such a condition does not occur in an early but in a late stage of cancer of the stomach.[1] We cannot agree with the use of the method of estimation of the HCl deficit for the determination of the amount of combined HCl present, as advised by the author in cases of cancer with stenosis (page 516). Where stasis of contents, or morbid exfoliation of tissue or bleeding occur, as in these conditions, the method is absolutely unreliable.[2]

It is not altogether easy to give a concise critical judgment of the value of Dr. Hemmeter's book. In a text-book on a special subject we expect and occasionally obtain a work in which the author knows from personal investigation and profound experience the whole ground over which he carries us. Dr. Hemmeter's book is not of this class. It is conceded, however, that a book consisting of a collection of the knowledge upon a subject gathered from the results of others' work, arranged and corrected by the author's judgment, and sanctioned and amplified by his experience, may add much to our store of knowledge upon the subject and completely justify its conception and publication as a text-book. Most text-books belong to this class, though many of them fulfil its requisites but poorly.

The collection of facts contained in Dr. Hemmeter's book is very complete. The review of the literature of the subject is exhaustive. Evidence of extensive experience in the use of the methods of diagnosis, and in the care of the diseases considered is present throughout. The book has many original suggestions; particularly in regard to treatment. In the possession of these properties the book has undoubted value. This possession is not, however, the first essential for the award of high rank in a book of this kind. This essential is the evidence of a correct scientific judgment and critical faculty in the determination of the value of the facts, and the induction of scientific conclusions from their association. This property is frequently lacking in Dr. Hemmeter's work, and as a result its value is much contracted.

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[1] Hammerschlag: Arch. f. Verdauung's Krankheiten.
[2] Ehrmann: Berl. klin. Woch., December 20, 1897.

As the most extensive work upon diseases of the stomach in the English language, the book will undoubtedly do much to disseminate the knowledge upon this subject in America, where such dissemination is much needed.

Diseases of Women. By J. C. Webster, B.A., M.D. Edin., F.R.C.P. Edin. Pp. 688, 241 figures. New York: The Macmillan Company. 1898.

This book is distinguished among its competitors in gynecology by the extreme fulness and lucidity of its theoretical portions. The chapters on anatomy are fully equal to the reputation of its distinguished author and are sufficiently brief to be readily followed. Pathology is clearly and interestingly treated throughout the book. The directions for diagnosis and treatment are thoroughly up to date, concise and clear.

Annual and Analytical Cyclopedia of Practical Medicine. By Charles E. Sajous, M.D., and one hundred Associate Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with chromo-lithographs, engravings and maps. Volume I. Philadelphia: The F. A. Davis Co. 1898.

The plan of this new medical annual and encyclopedia differs from the old Sajous' Annual in that it includes not only the literature of the previous year on the subjects treated, but presents a review of the literature of the subject for the past ten years, and thus presents, both to the special student and the general practitioner, an adequate idea of our present knowledge of each subject. The work thus becomes an encyclopedia as well as an annual. The recent literature of the various subjects is by no means neglected, nor the "annual" rendered subsidiary to the "encyclopedic" idea, as is shown by the fact that in the article on Abdominal Injuries, for instance, there are one hundred and sixty excerpts beside the general text. Confusion is avoided by employing large type for the general text, and small for the excerpts.

The matter is extremely well arranged for ready reference, and the publisher's work is of the best character. If the standard set in Volume I be maintained in the remaining five volumes, an exceedingly valuable work will be produced.

The excellence of the former annuals issued by the editor is a guarantee that the present work will prove a valuable addition to the physician's working library. The list of associate editors includes men of marked eminence in various lines of medical thought in this country and abroad.

Medical Congress at the Paris Exposition. — Section No. 6 of the Congress to be held in Paris in 1900 will be devoted to medical science. A special building within the grounds of the exposition will be reserved for the Congress.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, APRIL 21, 1898.

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THE ATMOSPHERIC TRANSMISSION OF BACTERIAL INFECTION.

The subject of bacterial contagion has lately received important additions in two particulars: first, with respect to the transportation of bacteria in aërial suspension; and, second, in regard to certain repellent agencies possessed by the human system against inspired micro-organisms. An examination of these researches affords an interesting and instructive study.

The factors which determine the dissemination of bacteria by currents of air have been investigated by Flügge in a series of careful experiments, the results of which materially modify our previous conceptions of the subject. This investigator first studied the conditions under which currents of air, impinging against infected substances, carry off the bacteria encountered. Various materials, such as cloth, earth and dust, were impregnated with cultures of well-defined species of bacteria (bacillus prodigiosus and bacillus megaterium). A stream of air of known velocity was made to pass over the infected articles and subsequently over nutrient media, upon which any transported bacteria would be deposited.

Some of the more important results obtained were briefly as follows: Moist, infected substances parted with their bacteria only when the impinging current of air attained a velocity of four metres per second. If, however, the bacteria had dried upon the articles, a transportation was effected when the current of air was one and one-third metres per second, while if the bacteria were mixed with the fine dust ordinarily encountered in living rooms, they were carried off by a current of but two-tenths of a millimetre per second. This infected dust may consequently be carried off by currents of air imperceptible to our senses, since we are not able to recognize a current of a velocity under ten centimetres per second. Such dust was also shown to remain floating in the air for a period of four hours.

Infected particles of fluid in minute subdivision were still more readily transported, being carried horizontally by currents of air with a velocity of but seven-hundredths of a millimetre per second. Such particles remained floating in the air for a period of five hours. In the effort to approximate the conditions of the experiment as closely as possible to those of ordinary life, an individual took a culture of bacillus prodigiosus into his mouth and then at a varying distance from exposed culture media spoke in both high and low tones, coughed, and sneezed. Under all these circumstances, even when the individual spoke in a low tone of voice, the culture media were infected with the bacilli at a distance of several metres.

These results lead to the conclusion that the atmospheric transmission of bacterial infection is much more readily accomplished than has hitherto been believed. In the case, for instance, of a disease where infectious material is expectorated, it is evident that the specific bacteria must, with each act of coughing, be projected into the surrounding air upon both coarse and fine particles of fluid, the larger falling directly upon surrounding objects, the smaller remaining suspended in the air for several hours, during which time they may be distributed over a wide area. When finally these infected particles dry, currents of air of but moderate velocity will suffice to carry off the bacteria. In other affections, the pathogenic bacteria must in a similar manner be transported either from infected body fluids or from the nasal mucus or from fecal discharges or from the surface of the skin.

In view of the fact that individuals suffering from such diseases as diphtheria, consumption, influenza, etc., are likely to be surrounded by pathogenic bacteria in aërial suspension, it becomes of interest to inquire, What are the conditions influencing bacterial activity in the upper respiratory tract of healthy individuals? In other words, what is the fate of micro-organisms in inspired air?

Inasmuch as the inspiratory current is known to be practically freed from germs by the time it reaches the trachea, it is evident that the nasal cavities must perform principally the task of filtration or destruction, a work computed to amount in ordinary city air to the disposal of 14,000 micro-organisms per hour. The manner in which this is accomplished has been studied according to the most approved methods of bacteriological research by Thomsen and Hewlett, of London, and by Park and Wright, of New York. While the results obtained do not in all particulars harmonize, they have brought out the interesting fact that the interior of the nose contains a comparative scantiness of bacteria in proportion to the number present in the inspired air. In the majority of cases examined by the two first-named observers, the mucous membrane of the nose was found to be completely sterile, while the skin of the vestibule and the fringe of hairs lining it swarmed with micro-organisms. When a loopful of bacillus prodigiosus was introduced into the nose past the vibrissæ and deposited upon the mucous membrane, it was found by repeated cultures that the number of bacilli proceeded promptly to disappear, and after two hours, none could be recovered. These results naturally led to testing the action of sterile nasal mucus upon various bacteria *in vitro*. While little or no effect upon diphtheria bacilli, pseudo-diphtheria bacilli, staphylococci and streptococci were observed, a marked bactericidal power with regard to anthrax bacilli was evident.

It appears, therefore, reasonable to suppose that a number of factors are active in controlling bacterial activity in the healthy nose. Of these the most conspicuous are the filtration performed by the vibrissæ of the vestibule, the natural draining down of clear serum from the upper regions of the nose, the movements of the cilia of the epithelium, and perhaps also the circumstance that the nasal secretion is not a favorable culture medium.

Among the interesting points suggested by a consideration of these two series of investigations, there is one which seems of particular practical value in the matter of prophylaxis. If the attendant upon a contagious case may reasonably be required to change his clothes and subject the exposed portions of his skin to the action of antiseptic solution before mingling with the rest of the community, he should in all justice exercise some means of disinfecting his *vestibulum narium* and *vibrissæ*. A brief consideration of the fact that this region of the attendant probably contains a vastly greater amount of infectious material than all the rest of his body surface should suffice to check the smile which such a recommendation may at first thought excite.

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MEDICAL NOTES.

Prof. Charles Richet has been elected a member of the French Academy of Medicine.

The Hospitals of Paris. — It is estimated that no less than $15,000,000 would be required to satisfactorily increase the bed accommodation and improve the sanitary arrangements of the Paris hospitals.

Worthless Diplomas. — The Wisconsin Board of Medical Examiners has refused to recognize the medical diplomas issued by the Milwaukee Medical College and School of Dentistry, alleging that the institution named has not complied with the State laws regulating medical colleges.

Instruction in the Sciences Preparatory to Medicine. — The University of Paris has been authorized to borrow 1,700,000 fr. for the construction on the rue Cuvier of buildings and laboratories for instruction in the sciences preparatory to the study of medicine, and for the completion of the laboratory of physiological botany at Fontainebleau.

Woman's Medical College. — The formal opening of the new building of the Woman's Medical College of the New York Infirmary for Women and Children has taken place. It will be remembered that the building was partially destroyed by fire a year ago.

It is now much improved in every respect, and is abundantly provided with laboratory facilities.

Measles at Columbus, O. — Since the 1st of January over 800 cases of measles have been reported to the health officer in Columbus, O. Of this number 201 were in January, 330 in February, and the balance in March. The report shows 10 deaths during this period, the immediate cause generally being pneumonia. — *Columbus Medical Journal.*

Death of Professor Stricker. — In the recent death of Prof. Solomon Stricker, scientific medicine loses one of its most distinguished workers. He was sixty-five years old at the time of his death, which occurred but a week or two after the celebration of the twenty-fifth year of his service as "ordinary professor." His contributions were mainly to pathology and histology.

The Ninth International Congress of Hygiene and Demography. — The Ninth International Congress of Hygiene and Demography is to be held at Madrid, Spain, April 10 to 17, 1898. It will be under the patronage of His Majesty King Alfonso, and Her Majesty the Queen Regent. Dr. Amalio Gimeno, Professor of the Faculty of Medicine at Madrid, is Secretary-General.

Prizes for the Investigation of African Diseases. — A gift of $5,000, to be used in promoting the study of the diseases of the Congo, has been received by the Society of Colonial Studies of Brussels, and the Society offers two prizes of $500 for some notable addition to the knowledge of the evolution of the hematozoon of Laveran and for the discovery of the origin of hemoglobinuric fever.

International Association of Railway Surgeons. — The next meeting of the International Association of Railway Surgeons will be held in Toronto on July 6th, 7th and 8th. It is anticipated that the meeting will be a large one, some five or six hundred members being expected. It is said that every railroad in North America will be represented at the meeting either by its official surgeon or by proxy.

A French View of Reciprocity — The French Chamber of Deputies recently passed a *projet de loi* relative to the practice of pharmacy, one clause of which is to the following effect: "No foreigner, even if holding the French diploma of pharmacy, shall practise pharmacy in France unless, by reciprocity, a Frenchman holding a diploma of pharmacy granted by the country to which the foreigner belongs can practise pharmacy in that country."

A Gift to the New York Academy of Medicine. — It is stated (*Medical News*, April 16th) that at a meeting of the New York Academy of Medicine held April 7, 1898, ex-President Grover Cleveland, in response to an urgent request, presented to the academy an autograph copy of the address delivered by him at the celebration of its semi-centennial anniversary. The manuscript consists of nine closely written pages of letter-paper, which have been artistically framed by Tiffany & Co., each page occupying a panel by itself. This gift from the ex-President supplies another invaluable feature to the rapidly accumulating collection of portraits, relics and mementos which decorate the walls of the academy.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, April 20, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 68, scarlet fever 35, measles 70, typhoid fever 11.

Attempts to Burn a Nurses' Home. — Within the last three weeks three attempts have been made to burn the Nurses' Home connected with the Somerville Hospital. A fire was recently discovered in the attic of the building, and before the department could get at it a large hole had been burned in the roof. The damage will amount to $500. On the morning of April 1st a fire was discovered in one of the rooms, and the occupants of the house barely escaped with their lives. Later, another fire was found beneath a sink in the second story. This was extinguished with small loss.

The Massachusetts Emergency and Hygiene Association. — The Annual Meeting of the Massachusetts Emergency and Hygiene Association was held last week. Reports on the work of the organization were submitted by Mrs. Wells, Miss R. L. Dexter, Miss Ellen M. Tower and Dr. Otis H. Marion. The following officers were elected: President, James J. Minot, M.D.; Honorary Member, Francis Minot, M.D.; Secretary, Miss Rose L. Dexter; Treasurer, Charles Fry; Executive Committee, Mrs. Kate Gannett Wells (Chairman), Miss Ellen M. Tower, Mrs. F. H. Williams, Miss Ida Mason, R. W. Greenleaf, M D., A. K. Stone, M.D., James J. Minot, M.D., Francis C. Gray, Horatio Davis.

The Newton District Nursing Association.— A district nursing association has been organized in Newton, Mass., with the object of providing the sick poor of that city with competent nursing.

NEW YORK.

Medical Department of the New York University. — The University of the City of New York, which last year expected to have one of the finest medical departments, with one of the strongest faculties, in the country, by the consolidation of Bellevue Hospital Medical College with its own school, seems likely now to be left without any medical school at all. It is said that at the end of the present term the entire governing faculty of the University Medical School, with the exception of the Secretary, Dr. Egbert Le Fevre, will resign their positions. Among those so retiring are Profs. Wm. M. Polk, Lewis H. Stimson, W. Gilman Thompson, George Woolsey,

H. P. Loomis and R. H. Witthaus. The cause of this action on their part, it is asserted, is the nonfulfilment of certain agreements, the precise nature of which has not thus far been made public, by the Council of the University. Until about a year ago the medical school was practically independent of the University, owning its own property, being governed by its own faculty, and conducting its own examinations. Its only connection with the University was a nominal one, the latter simply granting degrees on its recommendation. Last year, however, an agreement was made by which the property was transferred to the University and the government of the school was vested in the University Council. The Council, on its part, agreed to reappoint all the old faculty and assented to certain stipulations as to the prerogatives of its members and the endowment of certain chairs and the general financial management of the school. Recently the faculty have asserted that these stipulations have not been carried out, and that, in consequence, they will no longer retain their positions. It is intimated that they feel so aggrieved at the treatment they have received that they have determined to reliquish all claims to the property with the exception of the Loomis Laboratory, which, under the deed of gift, cannot be alienated, and to organize an entirely new medical school. To this end they have been in negotiation with the authorities of Cornell University for the establishment of a medical department in New York City, and it has just been reported that in the event of such an arrangement being determined upon Col. Olin H. Payne, of New York, will present an endowment for the department amounting to about $500,000. The buildings of the University Medical School in East Fourteenth Street were destroyed by fire in 1866, and, after occupying quarters in the old New York Hospital on lower Broadway for three years, it was removed to its present location on East Twenty-sixth Street, opposite Bellevue Hospital. In 1875 the buildings were enlarged and improved, and in 1886 the Loomis Laboratory and a dispensary department were added.

Play-Grounds and Roof-Gardens. — Among the important bills passed at the recent session of the legislature was one throwing open the play-yards and roof-gardens of the public-school buildings for the resort of women and children during vacations. After the bill had been introduced the Corporation Council gave an opinion to the effect that play-grounds could not be legally opened for recreation purposes, and in view of this the legislature made an amendment to the school section of the City Charter covering the matter. Mayor Van Wyck, after a public hearing, and after ascertaining that the Board of Education was in favor of it, has signed the bill, and it will no doubt also be approved by the Governor.

Wise Action by the State Commission in Lunacy. — The wretched old barracks on Hart's Island where the insane patients who could not be accommodated in the buildings on Ward's Island were quartered, and which have so long been a reproach to New York, have finally been condemned by the State Commission on Lunacy and torn down. Some of the patients were removed to Ward's Island and others transferred to the State Hospital at Poughkeepsie.

Death of Dr. G. H. Humphreys. — Dr. George Hoppin Humphreys, for many years a prominent New York practitioner, died at his home in that city on April 15th. He was born in Philadelphia in 1835, and was graduated from the Jefferson Medical College in 1856. He then spent three years in study and travel in Europe, and in 1859 settled in New York. During the civil war he served as surgeon of the Ninth Regiment, New York Volunteers (Hawkins' Zouaves), and at the battle of Antietam was acting brigade surgeon.

Miscellany.

RUPTURES OF THE ABDOMINAL VISCERA.

I. RUPTURE OF THE SPLEEN.

According to Ballance,[1] four successful cases of splenectomy for rupture without external wound have been reported: one by Riegner, of Breslau, one by Pitts, and two by himself. He reports a third successful case, operated upon by himself at St. Thomas's Hospital. The patient, a boy of fourteen, fell about ten feet from the bough of a tree onto a pile of flagstones. He was able to walk a short distance, and was then carried to the hospital. There was found on admission great pain on palpation in the left hypochondriac region, fracture of both forearms; and bloody urine was drawn by catheter. On the following day there was a large area of dulness in the left flank; the pulse rose to 130, with pallor and restlessness. The abdomen was generally distended and tender.

Median laparotomy, supplemented by another incision in the left linea semilunaris, disclosed a large mass of blood-clot surrounding the spleen, which was found greatly swollen and badly lacerated. The splenic flexure of the colon was ecchymotic and bruised. Splenectomy was performed and an uneventful recovery followed.

During convalescence no serious symptoms supervened such as occur after removal of the normal spleen in adults; further, no tenderness of bones was at any time present; but on October 6th the lymphatic glands on the right side of the neck, in both axillæ, and in the left groin were found to be obviously enlarged.

The operation was followed by a temporary leucocytosis and diminution in the number of red blood-corpuscles, but a condition nearly normal was reached in about one month, when the examination showed red corpuscles, 4,630,000; white corpuscles, 12,000; hemoglobin, 92 per cent.

The diagnosis of ruptured spleen is arrived at from: (1) The locality of the injury; (2) the evidence of internal hemorrhage, and (3) the large *fixed* dulness in the left flank.

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[1] Practitioner, April, 1898.

"The fixed dulness in the left loin and splenic region is not present in intra-abdominal hemorrhage from other organs, and is caused by this region being occupied by large quantities of clot. The dulness, therefore, cannot change with position, and is pathognomonic of this injury. The unusually large proportion of white corpuscles in splenic venous blood offers an explanation of the local coagulation of the effused blood in splenic rupture. Further, the exceptional coagulability of the splenic blood offers an explanation of the fact that these patients do not rapidly bleed to death. The shock at first is very severe, and is due to the blow on the belly, and the sudden escape of fluid into the abdominal cavity, as well as the great loss of blood. However great the initial collapse in uncomplicated splenic ruptures may be, experience warrants the belief that the bleeding will, at any rate for a time, be arrested by the formation of clot in the ruptures and around the organ, and that in this way a rally will take place sufficient to justify the hope of successful surgical interference."

II. RUPTURE OF THE LIVER.

A case of rupture of the liver successfully treated by abdominal section is reported by Martin.[2] The patient, a healthy young coal-heaver, nineteen years of age, was caught between two sets of trucks and received a severe "rolling crush." He recovered from the initial shock, and the only persistent symptom was severe pain in the right side of the chest.

On the following day there ensued rapid rise of pulse and temperature, with distention of the abdomen and dulness in the flanks and "abdominal facies." No vomiting or hematuria. Immediate abdominal section, performed in a miner's cottage by the light of a paraffin lamp, disclosed a large amount of fluid and clotted blood in the abdomen, and a rupture on the under surface of the right lobe, two inches deep, and extending upward from the transverse fissure, as far upward as the surgeon could reach. A detached fragment of liver tissue was washed out of the abdomen. Gauze packing was deemed impracticable owing to the situation of the tear, and irrigation with hot water, followed by drainage, was trusted in to control the hemorrhage. The whole abdomen was thoroughly washed out, and a small suprapubic incision made to drain the pelvis. Drainage was proved by two glass tubes, one for the pelvis, and the other for the sub-hepatic space. Convalescence was interrupted by pneumonia, but was finally complete.

THE OTHER KIDNEY IN CONTEMPLATED NEPHRECTOMY.

Edebohls, in the *Annals of Surgery*, for April, 1898, publishes a judicial discussion of the value and limitations of the various methods of diagnosis in renal diseases, such as cystoscopy, catheterization of the ureters, etc. The results of his study of the subject are summed up as follows:

> Before extirpating a kidney, a knowledge of the presence and condition of the other kidney becomes of paramount importance.
>
> The aids to obtaining such knowledge are: examining of the urine; palpation of the kidneys; cystoscopy; catheterization of the ureters; skiagraphy; the fluoroscope; and finally exploratory incision.
>
> The presence of a second kidney is determinable by most of these aids.
>
> None of these aids, however, with the exception of the last-mentioned, can, in all cases, give us completely satisfying information regarding the exact condition of the other kidney.
>
> In cases of pyuria and tuberculosis of vesical or unilateral renal origin, catheterization of the ureters involves the risk of infection of a previously healthy ureter and kidney, and should be avoided.
>
> Incision down upon, delivery, and examination of both kidneys (lumbar exploratory incision), as originally proposed and carried out by the writer, should be the rule in every contemplated nephrectomy in which we are not absolutely and beyond peradventure certain of the presence and exact condition of the other kidney.
>
> Modern surgery, with improved methods and technics, has rendered lumbar exploratory incision a safe and expeditious procedure, the most, and generally the only, reliable one for determining the exact condition of the other kidney.

Correspondence.

LIMITED RESPONSIBILITY.

Boston, April 15, 1898.

Mr. Editor: — In a report in a recent number of the Journal, page 277, I find the statement, quoted from the *American Journal of Insanity* of January, 1898, and expanded upon, "that in this case, for the first time, the question of 'limited responsibility' as the result of a lack of development is recognized not only by the experts but by the prosecuting attorney and the court as well."

The first such case reported in a medical journal in this country, so far as I know, was tried in this State and published in the Journal eighteen years ago (May 20, 1880, page 483). The world-famous case of Kullmann, who attempted to assassinate Prince Bismarck had already been decided upon precisely the same grounds; and for many years such decisions have been not infrequent in France. A second case in which the plea of limited responsibility, although not from lack of development, was accepted by prosecuting attorney and the court, on the medical testimony, is reported in the Journal, as above quoted, where also the remark is made that "of late years it has been more and more the custom of the courts to recognize this limited responsibility."

Yours truly, C. F. Folsom, M.D.

METEOROLOGICAL RECORD

For the week ending April 9th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ...3	29.97	30	34	26	51	66	58	N.	N.W.	14	9	C.	C.	.09
M...4	30.11	34	46	23	66	62	64	W.	S.	9	8	C.	F.	
T ...5	29.97	33	36	30	94	95	94	N.	N.	10	12	N.	N.	.26
W...6	29.90	34	41	26	54	62	58	N.W.	W.	16	8	C.	C.	.08
T ...7	29.89	38	47	28	66	61	64	N.W.	N.W.	10	16	O.	C.	
F....8	30.00	46	58	35	57	38	48	N.W.	N.	17	14	C.	C.	
S....9	30.19	50	62	38	46	43	44	W.	S.W.	9	12	C.	C.	
☞														.41

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[2] Birmingham Medical Review, May 19, 1897.

RECORD OF MORTALITY

For the Week ending Saturday, April 9, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York	3,438,899	1195	438	10.64	20.68	1.52	3.20	1.76
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	—	—	—	—	—	—	.66
Brooklyn	1,160,000	—	—	—	—	—	—	—
St. Louis	570,000	190	42	4.24	12.72	—	2.12	—
Baltimore	550,000	186	80	12.42	20.52	1.62	2.70	2.16
Boston	517,732	216	56	5.98	14.10	.46	1.38	—
Cincinnati	405,000	123	—	8.13	12.19	—	2.43	—
Cleveland	350,000	92	35	4.32	12.96	—	3.24	—
Pittsburg	285,000	103	38	10.78	19.60	5.88	.98	.98
Washington	277,000	—	—	—	—	—	1.08	—
Milwaukee	275,000	—	—	—	—	—	—	—
Worcester	105,050	40	15	12.50	20.00	—	2.50	—
Nashville	87,754	35	4	5.72	2.86	—	—	2.86
Fall River	95,919	34	15	8.82	20.58	8.82	—	—
Lowell	87,193	29	6	3.45	22.60	—	—	—
Cambridge	86,812	33	12	6.06	9.09	—	3.03	—
Lynn	65,220	—	—	—	—	—	—	—
Charleston	65,165	24	9	8.32	4.16	4.16	—	—
New Bedford	62,416	18	7	11.11	11.11	5.55	5.55	—
Lawrence	55,510	19	11	—	21.04	—	—	—
Springfield	54,790	17	3	—	23.52	—	—	—
Holyoke	42,364	9	6	11.11	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Salem	36,062	12	0	—	8.33	—	—	—
Brockton	35,853	8	2	25.00	12.50	—	—	—
Malden	32,894	10	3	30.00	—	—	10.00	—
Chelsea	32,716	15	8	6.66	13.33	—	—	—
Haverhill	31,406	15	4	20.00	13.33	—	6.66	13.33
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	7	1	14.28	14.28	—	—	—
Fitchburg	28,392	10	2	—	20.00	—	—	—
Taunton	27,812	13	3	7.69	15.38	—	—	—
Quincy	22,562	6	1	—	16.66	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	2	0	—	—	—	—	—
Everett	21,575	4	2	25.00	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Newburyport	14,794	4	0	—	—	—	—	—
Amesbury	10,920	—	—	—	—	—	—	—

Deaths reported 2,550; under five years of age 818; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 239, acute lung diseases 441, consumption 295, diphtheria and croup 65, diarrheal diseases 36, measles 30, typhoid fever 26, cerebro-spinal meningitis 26, whooping-cough 25, scarlet fever 20, erysipelas 12.

From typhoid fever New York and Baltimore 5 each, St. Louis and Pittsburg 3 each, Cincinnati and Providence 2 each, Boston, Cleveland, Nashville, Charleston, Worcester and Chelsea 1 each. From cerebro-spinal meningitis New York 7, Boston 4, Providence 3, Baltimore, Worcester and Malden 2 each, St. Louis, Lowell, Cambridge, Holyoke, Newton and Everett 1 each. From whooping-cough New York 14, Cincinnati 5, Boston 2, Baltimore, Pittsburg, Worcester and Brockton 1 each. From scarlet fever New York 17, Baltimore 2, Brockton 1. From erysipelas New York 9, Boston 2, Baltimore 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending April 2d, the death-rate was 21.5. Deaths reported 4,636; acute diseases of the respiratory organs (London) 451, measles 226, whooping-cough 126, diphtheria 61, scarlet fever 49, diarrhea 39, fever 34.

The death-rates ranged from 14.7 in West Ham to 30.7 in Liverpool; Birmingham, 21.3, Bradford 22.8, Cardiff 17.6, Gateshead 15.6, Hull 18.1, Leeds 24 4, London 21.8, Manchester 23.2, Newcastle-on-Tyne 17.3, Nottingham 21.2, Portsmouth 16.8, Sheffield 19.3, Sunderland 19.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 9, 1898, TO APRIL 15, 1898.

The retirement from active service by the President on April 10, 1898, of **Lieut.-Col. David L. Huntington**, deputy surgeon-general, by operation of law, is announced.

Captain Francis A. Winter, assistant surgeon, is relieved from duty at the U. S. Military Academy, West Point, N. Y., and ordered to Jefferson Barracks, Mo., for duty at that post.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING APRIL 14, 1898.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for ten days from April 8th. April 11, 1898.

Hastings, Hill, assistant surgeon. Granted leave of absence for seven days upon being relieved from duty at Middlesborough, Ky. April 11, 1898.

APPOINTMENTS.

Dr. A. A. Taft has been appointed first assistant physician at the Long Island (Boston Harbor) Hospital, in place of **Dr. C. M. Hutchinson**, resigned. The position of second assistant physician (salary $500) is to be filled.

Appointments at the Boston Dispensary: **Drs. Alfred A. Wheeler, James S. Stone, William P. Coues** and **George A. Harlow** have been appointed assistant surgeons; **Dr. William Cogswell**, assistant surgeon to the Department for Diseases of the Genito-Urinary System; **Dr. Sidney A. Lord**, assistant physician to the Department for Diseases of the Nervous System; and **Drs. William H. Grant, Charles N. Barney, Frederic J. Cotton, Elliott P. Joslin, Frederic W. Pearl, Franklin S. Newell, Joshua C. Hubbard**, district physicians.

BOYLSTON MEDICAL PRIZE.

The Boylston Medical Prize of $150 has been awarded this year to Dr. Guy Hinsdale, of Philadelphia, Pa., for an essay on "Acromegaly."

PLAGUE AND CHOLERA.

As reported to the Marine-Hospital Service, there were 3,439 deaths from the plague in Bombay, from February 26th to March 15th; and in the same city, from February 24th to March 15th, 10 deaths from cholera. In Calcutta, from February 19th to March 5th, there were 43 deaths from cholera.

RECENT DEATH.

Elisha Wilbour Aiken, M.D., M.M.S.S., died in Hingham, April 13, 1898, aged seventy years.

BOOKS AND PAMPHLETS RECEIVED.

Bulletin of the Board of Health, State of Louisiana, for October, November and December, 1897.

The Possibilities of Antitoxin in Diphtheria. By George Suttie, M.D., Ph.C. Reprint. 1898.

Some Conclusions Drawn from Experiences in Pelvic Surgery. By A. V. L. Brokaw, M.D., St. Louis, Mo.

An Exhibition of Radiographs, with Remarks. By A. V. L. Brokaw, M D., St. Louis, Mo. Reprint. 1897.

Officers and Members and Constitution of the American Neurological Association. Published by the Association. 1898.

Acute Empyema of the Frontal Sinus, with Report of Cases. By Ralph J. Wenner, M.D., Cleveland, O. Reprint. 1898.

Quarantine Regulations, Marine-Hospital Service. Speech of Hon. Donelson Caffery, of Louisiana, in the Senate of the United States, March 22, 23 and 30, 1898.

Sex in Generation: The Consideration of Some Factors Exerting an Influence in its Determination. By Daniel E. Keefe, M.D., Springfield, Mass. Reprint. 1898.

The Inguinal Operation for Femoral Hernia. The Other Kidney in Contemplated Nephrectomy. By George M. Edebohls, A.M., M.D., New York. Reprints. 1897-98.

A Case of Vicarious Menstruation from the Lungs. Digestion Leucocytosis in Stomach Disease. A Case of Acromegaly with Diabetes. By T. L. Chadbourne, M.D., Columbus, O. Reprints. 1898.

Three Cases of Amebic Dysentery. Some Observations on a Method of Multiplication of the Amœba Dysenteriæ (Amœba Coli). Amœbic Dysentery. By H. F. Harris, M.D., Atlanta, Ga Reprints. 1892-94-98.

Yellow Fever in the West Indies. By Izett Anderson, M.D., Edin., Extraordinary Member of the Royal Medical Society of Edinburgh; Honorary Member of the Institute of Jamaica; formerly Resident Surgeon of the Colonial and Seamen's Hospital, Georgetown, British Guiana; Member of the Government Medical Council, etc. London: H. K. Lewis. 1898.

Original Articles.

HYPERACIDITY OF THE STOMACH AND ITS TREATMENT.*

BY ELLIOTT P. JOSLIN, M.D., BOSTON.

Kussmaul recommended the stomach-pump in 1869 for the treatment of gastric dilatation; Leube advised the use of the same two years later for diagnostic purposes; and Ewald in 1875 demonstrated that soft-rubber tubes as well as stiff ones could be passed into the stomach, and thus made practical the work of his predecessors. The stomach-tube made the size, position and motility of the stomach definite entities, and enabled the physician to examine the stomach contents after test meals. To this examination von d. Velden in 1879 contributed the color reaction for HCl, and that marks the beginning of our universal, clinical and chemical study of gastric digestion.

It is with only one phase of this subject that my paper deals to-night, namely, the excessive secretion of HCl. This we usually term hyperacidity; but to be accurate we should say hyperchlorhydria, for hyperacidity of the stomach can be brought about just as well from the organic acetic, butyric and lactic acids as from the inorganic acid HCl. In fact, in the case of a child — a patient of Dr. Charles P. Putnam — whose vomitus I examined, the acidity was the greatest I have ever met with, and yet no free HCl was present. The great acidity in this case was due to lactic acid. Of this class of cases, I have nothing further to say.

Hyperchlorhydria has not been studied as much as it deserves to be for two reasons: gastric cancer is usually associated with a diminution or absence of HCl; and as the first requisite of differential gastric diagnosis is to exclude cancer, study has been chiefly directed to its symptom, diminished HCl.

In the next place a determination of increased HCl requires a quantitative test, and this necessitates apparatus and time.

Hyperacidity of the stomach is important because of its frequency. It is especially important to us because it appears to be much more common here than in Europe. Einhorn and Reed both had the opportunity to work in a German polyclinic, and both emphasize this fact. Einhorn[1] goes so far as to say that in nearly one-half of all stomach patients hypersecretion is present. Reed[2] considers it the most common gastric derangement in this country. The cases also vary in frequency in the different localities of Germany.

ETIOLOGY AND PATHOLOGY.

In order to explain the over-action of a gland we may presuppose agencies acting through the nervous system on that gland or changes in its component cells. For many years hyperacidity has been considered purely a neurosis; but of late the study of bits of mucous membrane, obtained by washing out the stomach, has shown that some cases at least are due to changes in the stomach walls. In considering the action of the nervous system in hyperacidity, the subject naturally divides itself into the groups of functional and organic diseases. That hyperacidity is a frequent occurrence in hysteria and neurasthenia has been known for years, and it seems only rational that this should be the case; for why should not a disease which calls out hyperesthesia or hyperalgesia in one person not call forth an increased function in another part of the body? Of course, the statement that hyperacidity is common in these functional disorders is no proof that they cause it, but their frequent occurrence together gives much force to such a view. Not only in these severer neuroses, but in their milder types is hyperacidity common. In active business men, in accountants, in teachers, in doctors it is a frequent occurrence. With migraine it has much in common. The two often occur together in that class of cases of hypersecretion which Reichman has described. In some of these cases the interdependence is very marked, because the migraine disappears when the stomach is washed out. But on looking at these cases a little more closely, more than a nervous element presents itself as a reason for the disturbed gastric function — such, for example, as the irregularities in the hygiene of eating which are so common among us Americans. Irregular meals or none at all, a very little at one time, too much at another, improperly masticated food — all these factors have an influence on a stomach whose nervous apparatus in our busy world is often predisposed to wrong action.

Of the organic nervous diseases, those of the brain and spinal cord naturally fall into one class. Tabes is by far the most important of these, on account of its frequency and the frequency of hyperacidity associated with it. The differential diagnosis between a gastric crisis and hyperacidity is often difficult and at times impossible. So often are the functional diseases and tabes associated with an excessive secretion of HCl, that as soon as the patient's history becomes suggestive of hyperacidity, I am on the lookout for increased or absent knee-jerks.

It is, however, in the peripheral nerves that we get our most satisfactory evidence of the direct connection between the nervous system and the hypersecretion of HCl. It was in ulcer of the stomach that hyperacidity was first prominently brought to notice, just as its absence was first noticed in cancer. But we have passed beyond that stage of gastric study. Now we know that it is not the cancer, but the accompanying catarrh which is responsible for our lack of HCl. And so with ulcer, we look upon the accompanying hyperacidity as a result of the exposure of the peripheral nerves at its base, or if the ulcer has healed, from the pressure exerted on the nerves by the scar, as in the stump of an amputation, and not simply as an indefinite accompaniment of the ulcer.

In the ulcer the nerves are nearer the surface and so more exposed. On the other hand, we may have stronger stimuli working through an intact mucous membrane, and so producing the same result. As stimuli may be considered those occurring in the food. Spices (pepper, salt, mustard) represent in the literature one class; and everywhere one finds in the rules for treatment of hyperacidity that these should be excluded. But this appears to be simply another example of copying from one book to another, and the following of one's own impressions. The experiments of Brandt[3] show that the gastric secretion is only slightly increased by the administration of these in solutions of peptone; that it is constantly and notably diminished by the simultaneous introduction of spices and a solution of sugar. Alcohol has more perhaps to be said in its favor. I hesitate to make any statements regarding it until Prof. S. H. Chittenden has completed his report on the subject.*

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* Read at a Meeting of the Worcester Medical Association, February 26, 1898.

As regards the stimulating effects of foods, the matter is still in an experimental stage. Little work has been done on the subject. The point to be settled is this, — Does albuminous food stimulate the secretion of HCl more than carbohydrates? V. Jaksch[4] in 1890 showed by his experiments that HCl was increased the most quickly after meat, somewhat more slowly after milk, and slowest of all following carbohydrates. Opposing his view is that of Schüle,[5] who demonstrated by his experiments that the strength of the acid secretion was not notably influenced by the quality of the ingesta. V. Jaksch and Schüle carried on their investigations by giving test meals of a definite character to their patients and then examining the stomach contents. Attention has been called to the paucity of data in this line, and undoubtedly during the present year there will be more contributions to the subject. Another method of determining the action of these two classes of food is to feed similar animals for long periods on a diet rich in carbohydrates and proteids respectively, and then determine the relative strength of HCl in their stomachs. Hemmeter records one such experiment in which two dogs were so fed for one year. At the end of that time the dog on the proteid diet showed the more HCl. With so few data it will be far better for us to wait further developments and not draw hasty conclusions.

It certainly is a most welcome contribution to gastric pathology that Jaworski, Hayem, Cohnheim, Einhorn and Hemmeter have established a pathological basis of hyperacidity; it narrows by one more circle the constantly diminishing class of functional disorders. For it is the *bête noire* of every gastric differential diagnosis, that we must include a neurosis in our scheme, no matter whether we have too much, too little or a normal amount of acid. These observers have found in one-half to two-thirds of their cases of hyperacidity an increase of the acid-secreting cells, and correspondingly an atrophy of the same in anacidity.

The most important factor of all in hyperacidity appears to be the motility of the stomach. Our whole conception of its motor power has undergone marked changes in the last few years. The experiments of Moritz,[6] Meltzer,[7] and those shown only last week by W. B. Cannon[8] at the Boston Society of Medical Sciences, have settled beyond a doubt that the peristalysis is confined to the antrum pylori, and that the little waves which pass over the cardiac region are of small account. We can make from our accumulated clinical evidence these two postulates:

(1) In the overwhelming majority of cases of hyperacidity we have an atonic or dilated stomach.

(2) Hyperacidity can cause a stenosis of the pylorus through a spasm of its muscles and so lead to dilatation of the stomach and stasis.

But whether the dilated stomach appears first, and through its stagnant contents leads to stimulation of the mucosa and so increases the HCl, or whether the increased HCl is the primary factor, and through its causation of pyloric spasm makes the dilatation, it is very hard to decide. It seems more probable that the dilatation causes the hyperacidity, because by its removal, either by medicinal or surgical treatment, the hyperacidity disappears. This has been well shown by Carle,[9] who has observed the diminution of hyperacidity following gastro-enterostomies.

Some results recently published by Dr. Hewes[10] are especially interesting, because they stand in close relation to what has just been said regarding stagnant food and hyperacidity, as well as to what was earlier commented upon, namely, the prevalence of hyperacidity in this country. After the Ewald test breakfast he found that the residue in the stomachs of healthy individuals was nearly twice as great as that obtained by European observers. Perhaps then we should say, the American tendency is toward diminished gastric motility, and that this is one of the causes of our many hyperacidity cases.

Hyperacidity is also met with in those cases of continual or periodic hypersecretion of the stomach described by Reichman. Between these and the cases of simply diminished motility it is hard to draw the line.

SYMPTOMS.

Hyperacidity of the stomach is a symptom. It is not a disease. It manifests itself, however, in so many ways and so often rules the clinical picture, that it merits a special symptomatology of its own. On the other hand, like gastric ulcer, it can exist in a latent form.

Pain brings the patient to the physician. This pain can vary from slight distress to that of so severe a character that morphia relieves only temporarily and the patient finally becomes an opium habitué. This was the case in two of the subjects whom I have seen. The pain has its seat most often in the epigastrium, in the vicinity of the pylorus. It remains localized, as a rule. At times it may extend even up to the shoulders, like the pain of gall-stones; again, it may be so low down as to simulate an appendicitis. Typically it comes between meals. But somehow the patient is no more apt to volunteer this symptom than he is to say that the pain is relieved by food. Both of these facts he acknowledges as soon as his attention is called to the matter. The pain is described as dull, heavy, more rarely gnawing. It is not affected by pressure. Of course, it varies with the cause of the hyperacidity.

The appetite is good; there is hunger-bolimia — but unlike patients with ulcer, these individuals are not afraid to eat.

Belching is a frequent accompaniment, especially in those cases of a functional, nervous origin. This belching is obliviously a neurosis, because it continues for such lengthy periods and in such great amounts that no fermentative process in the stomach could explain it. Then, too, the gas is odorless; such a case recently sent to me showed a total hyperacidity of 154 and 0.3066 per cent. free HCl.

Vomiting occurs, not on account of the hyperacidity, but is due to the underlying disease — a hypersecretion, an ulcer or dilatation of the stomach. Thirst is present in the severe, but absent in the mild cases.

The decisive test of hyperacidity is its demonstration, and the results of such an examination are so positive that one should pass the stomach-tube in as routine a way as the surgeon gives ether to examine a fracture. In fact, the two acts are very similar, for in both there is the heart to examine and the false teeth to remove;

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* Professor Chittenden's first article is in the American Journal of Medical Science, January to April, 1897. The second appeared since this paper was read, in the first number of the American Journal of Physiology.

and in each case if the patient is an alcoholic there is sure to be an uncomfortable experience.

The microscopic examination of the stomach contents is not of so much value for hyperacidity as for anacidity. The odor, though often sour at first, does not get putrid even if the fluid is kept some days.

Congo paper is little used in this vicinity. As you know, it reacts only to free HCl in the stomach contents like the phloroglucin-vanillin test of Günzburg. It is extremely sensitive, and from the depth of the blue color, which it takes on in the presence of HCl, can be made a shrewd guess as to an excess.

As for the quantitative methods, the one in general use is that of Mintz, in which we add one-tenth normal NaOH solution to 5 or 10 c. c. of filtered contents until we fail to get a reaction for free HCl, and then add phenolphthalein to the same solution and determine the total acidity. In these cases the examination is not complicated by the presence of lactic acid as this ceases to be formed when HCl is present to the amount of 0.12 per cent.

The diagnosis can also be made with the microscope. If meat has been taken, we seldom see a muscle fibre remaining; if the diet has been a starchy one, the starch granules look unchanged. If we see sarcinæ, we know HCl is present in connection with diminished motility.

The examination of stomach contents is a very simple procedure; and the confidence which the knowledge of such an examination imparts to the physician, and to the patient as well, is just what is needed in treating a stomach case.

DIAGNOSIS.

The diagnosis of hyperacidity, then, in modern medicine is easy. It is the doctor's fault if he does not make it. The recognition of the underlying cause of the hyperacidity is not so obvious, but in the vast majority of cases it will be disclosed by thorough study.

There are just two conditions among the many I will speak of in differential diagnosis:

The first, because of the rarity of its recognition, is ventral herniæ, more especially those of the linea alba [11] in the epigastric region. These cause small soft tumors, the size of a marble, contain a bit of fat, omentum or rarely the gut, and give rise in proportion to their size to an immense deal of disturbance. A cough will bring them out, and gives to the finger resting over the ring the impression of a handful of little stones being thrown against it — Litten's phenomenon. These herniæ can give rise to symptoms similar to those of hyperacidity even in its severest forms. Their recognition, treatment and cure by operation is sufficient to exclude hyperacidity.

The other condition was brought to my attention by Ewald's assistant, Kuttner. He emphasized the fact that in many of the cases of hyperacidity, hyperesthesia of the stomach is present. These patients resent pressure in the epigastrium; and this symptom, with the hyperchlorhydria, leads one to think wrongly of ulcer. There are several points in the differential diagnosis of the two affections which are too obvious to mention. One is not so well known and was emphasized by Kuttner. A patient with gastric ulcer will quickly respond to a rigidly enforced diet-cure and improve; a patient with the hyperesthetic abdomen is not benefited, but keeps on vomiting.

TREATMENT.

Our principle of action is to treat the cause of the hyperacidity. If it be a neurosis, conquer that; if it is an ulcer, the rules are definitely laid out for us; if it is a disturbed motility, there are several methods of procedure open. Of the neurotic treatment and the treatment of ulcer, I will not speak. The treatment of the motility of the stomach stands in such close relation to the relief of the hyperacidity as to deserve mention at some length. In general, anything that will build up the general condition of the patient will benefit the motor action of the stomach. Rowing and golf, by strengthening the abdominal muscles, will give support to the over-loaded organ. Massage by a skilful operator may empty it, and so be of value. At one time it was thought that electricity was of great use, but the experiments of Meltzer [12] have shattered our hopes. He sums up his results as follows: "The percutaneous and direct faradization of the stomach and of the intestine cannot produce any contraction in these parts."

In a medicinal way there is one drug which stands out above all others in the treatment of motility. That there is only one, means that one is of value. Whether it is the nux vomica itself or the method of administration recommended to me by Dr. James J. Putnam that gives the remarkably good effect I will not pretend to say. Probably it is both. The method is as follows: Ten drops of the tincture of nux vomica three times a day, increase one drop daily up to 20 or 30 drops t. i. d. The increasing doses have a mental as well as a medicinal effect on the patient.

Should these measures not suffice, our resource is to the stomach-tube. But this is exhausting, and a patient soon feels weakened by it. Then, too, a large amount of food is in this way removed from the body. This was clearly shown in a metabolism experiment I carried on in Ewald's laboratory last summer on a case of gastric cancer.[13] The estimation of the nitrogen in the stomach washings revealed the fact that 23.5 per cent. (nearly one-fourth) of all the food given by the mouth was removed by the tube on the following morning.

For those obstinate cases of gastric dilatation there is one indication and that a surgical one. The subject of gastric operations was considered by Leube and Mikulicz [14] in the last German surgical congress, and received such careful attention as to deserve mention here. It is simply astounding that with all our own surgical skill so little work has been done on the stomach. Perhaps it is partially the fault of the medical men that they fail to make an early diagnosis. Up to 1890, for benignant pyloric stenosis and gastric ulcer without complications, there were 72 cases operated upon, with a mortality of 36.1 per cent. From 1891 to the beginning of 1897, there were 162 operations, with a mortality of only 16 per cent.; that is, the mortality in six years was reduced one-half. Mikulicz himself has performed a great many operations, and his last ten have had a mortality of zero. These statistics speak for themselves.

As the stomach absorbs no water, it is in these severe cases of hyperacidity associated with gastric dilatation that thirst is so troublesome. This is best relieved by nutrient enemata of normal salt solution. That doctor is fortunate who can prescribe this for the first time to a patient who has been parched for days. Food is also absorbed extraordinarily well by the rectum, and

I was able to show that a cancer patient in Ewald's clinic took up over 87 per cent. of the rectal enemata given him.[13]

As for the hyperacidity proper, Jürgensen[15] has recently gone through the multitude of text-books on gastric diseases and his findings are worth noting. He places at the commencement of his article this sentence, writen by Leube in 1871, "In the laying down of dietetic rules, this consideration I believe must be placed before all others, that for the diseased stomach, decidedly no better diet exits than rest," and then calls attention to the two rules which must govern our treatment in hyperacidity. The first of these, the etiological, has been already touched upon. His second is, that an overstimulated function requires a sparing, quieting sort of treatment. He then goes on to consider what the books have to say on the subject. Nearly all recommend a proteid diet. But does not this do exactly what we are trying to prevent? Does it not stimulate the acid cells? Unfortunately the fact is not settled whether there is more free HCl in the stomach after a proteid or carbohydrate diet. But this we do know, albuminous matter will combine with more HCl than will the same amount of carbohydrate matter. The stomach appears normally to secrete HCl until free acid exists in a certain per cent. in the stomach contents. To accomplish this after a proteid diet it must secrete more than after a carbohydrate one.

Rationally, then, an albuminous diet is wrong in cases of hyperacidity. This view has steadily gained ground the last year as the literature in Germany, France and America shows. All writers acknowledge the good effects of proteids temporarily, and in the milder cases the symptomatic treatment seems indicated rather than the rational. Carbohydrates for the severe cases, proteids for the mild ones. Yet I must say that the proteid diet has given me satisfaction almost invariably in the cases in which I have tried it. In giving carbohydrates, however, it must be remembered that the action of the ptyalin is soon destroyed in the stomach. Therefore foods in which the starch has been converted into dextrine are indicated. Or we might attempt to produce the same result by giving one of the various forms of diastase.

The pain arising from the acid itself can be neutralized in various ways, the simplest of which is to dilute the acid by liquid. This, of course, should not be encouraged for fear of producing trouble with motility and thereby augmenting the existing condition. Another means is to give a diet which will combine with the excess. This diet is the albuminous. How powerful is its action in this direction is shown by Professor Chittenden in his book on "Digestive Proteolosis." One hundred grammes of dry egg-albumin, free from inorganic salts, will combine with three litres of 0.2 per cent. HCl.[16] Expressed in another way, two or three eggs will combine with a pint of 0.2 per cent. HCl.

In Professor Chittenden's little book another point is brought out worth remembering. The products of proteid digestion, that is, peptones, have the power of combining with a greater quantity of HCl than the original proteids.[17] This being the case it would be most rational to give our patients peptones, which so far as I know has not yet been done.

We prescribe frequent meals, but do these give that rest to the stomach which Leube holds to be so essential? Does this treatment not tend to still more impair the motility? The aim therefore should be to give food in small bulk, and such preparations as the malted milk tablets can be of service.

Indeed, they are useful in another way, because, like the Bergman chewing tablets, they are held for some time in the mouth and so increase the alkaline saliva. Thus the organism is made to furnish its own alkali. As for the alkalies proper all agree that they are temporarily of great use, though in time they lose some of their power and are purely symptomatic. The special variety is not of consequence. Combined with bismuth their action is promoted. If the alkalies are given at all, they should be given in large doses — in grammes, not grains.

No matter what our treatment or rule of diet is in any case of stomach trouble we should always bear in mind that fact, established a few years ago by v. Noorden,[18] that the marasmus of probably all stomach patients except those with cancer arises from the diminished amount of food eaten. Your patient can get along without a stomach, but he cannot get along without food.

REFERENCES.

1. Einhorn: Twentieth Century Practice of Medicine, vol. viii, p. 267.
2. Reed: International Clinics, 7, s. i, 165–172, 1897.
3. Brandt: Loc. cit. Riegel: Die Erkrankungen des Magens, p. 272, 1896.
4. V. Jaksch: Zeitschrift f. klin. Med., p. 383, 1890.
5. Schüle: Arch. für Verdauungskrankheiten, iii, 330-333, 1897.
6. Moritz: Zeitsch. für Biol., Bd. xxxii, N. F. xiv, p. 313.
7. Meltzer: Transactions Association of American Physicians, x, 127–140.
8. W. B. Cannon: Journal of Boston Society of Medical Sciences, ii, 6.
9. Carle: Sem. Med., xvii, 269–271.
10. Hewes: Boston Medical and Surgical Journal, November 25, and December 2, 1897.
11. Kuttner: Ueber Verdauungsstömngen, verussacht durch Bruchformen u. s. w. Mitteilungen aus den Grenzgebieten der Medizin und der Chirurgie Ersles Band, 1896.
12. Meltzer: Loc. cit., as above.
13. Joslin: Ueber Stoffwechsdunterenlungen mit Fleischpepton und Eucasin. Berliner klin. Woch., No. 48, 1897.
14. Mikulicz: Berliner klin. Woch., xxxiv, 448.
15. Jürgensen: Arch. für Verdauungskrank., iii, 225–242, 1897.
16. Chittenden: Digestive Proteolysis, p. 58.
17. Chittenden: Loc. cit., p. 51.
18. V. Noorden: Zeitsch. für klin. Med., xvii, Heft 6.

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ACCIDENT NEUROSES AND FOOT-BALL PLAYING.

BY MORTON PRINCE, M.D.
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In the Journal for April 14th an interesting editorial discusses the question, whether in naval wars of the future accident neuroses will not play a prominent part amongst the injuries likely to be received on a modern battleship. The article, the writer explicitly states, was only meant to be suggestive; but the question is asked, "Are we to suppose that men cooped up in extremely small spaces, stormed at from without by projectiles of enormous force, and subjected to terrific concussion of their own armament, should not suffer a like nervous derangement?" This raises the whole question of the real causal factor of accident neuroses, or, to be more specific, and call things by their right names, traumatic neurasthenia and hysteria.

Personally, I believe that the real factor is the psychical or emotional element, and that the physical concussion plays a part only in so far as it intensifies the emotional effect. Just as, if we are startled by a sudden noise close to the ear, we are still more startled if the sound is accompanied by a slap on the back. But it is not necessary for the purposes of this discussion to assume that the emotional factor is the sole and universal exciting agent, but merely that it is the principal agent in the majority of cases. This idea seems to be accepted by the writer of the editorial, for it obviously underlies his discussion of the *pros* and *cons.*

As to the question propounded, it seems to me very unlikely that accident neuroses will be found in any large numbers to follow a battle in a modern warship, and not at all in the same proportion as they follow railway accidents. In fact, I cannot help believing that they will be extremely rare; for, as is intimated by the editorial writer, all evidence points to the fact that a certain preparedness of the mind is necessary for the psychical factor to take effect. Some two or three years ago, while watching a foot-ball game, I was impressed with the fact of the tremendous force with which the players are constantly either thrown upon the ground or come into collision with each other. A man weighing 160 to 170 pounds, running at full speed, and suddenly thrown to the ground, must strike with a force fully equal to, and often greater than that with which he is thrown in many railroad and other accidents, which are followed by severe neuroses. In fact, it is well known that physical trauma, when these neuroses develop, may be very slight. When two foot-ball players meet in collision, the physical concussion must be still greater; and the physician who is a novice to the game, must sometimes be startled when seeing the violence with which often the heads of the players are bumped against the ground or kicked.

It occurred to me, that, if accident neuroses were due to the physical trauma pure and simple, they must, as a necessary consequence, follow foot-ball accidents; and if it were found that they did not follow such accidents, some other element than physical trauma must be the true etiological factor. I accordingly addressed a circular letter to the medical director or manager of the princepal foot-ball teams of the country. Answers were received from six colleges, namely, Harvard, Princeton, University of Michigan, Cornell, Williams and Dartmouth. The replies from the first four colleges were made by the surgeons in charge, and by the captains or managers of the other two. The reply in each case was negative, my correspondent stating that he had never known of an accident neurosis to be caused by a foot-ball accident. Although these answers were from only six colleges, it must be borne in mind that in most instances, probably in all, they covered an experience extending over several years of foot-ball playing, and therefore with many games and a large number of men.

It is possible, of course, that further inquiries might discover an occasional case from this cause, but such cases must be rare. It would seem that these results support strongly the theory that trauma, as such, will not produce traumatic neurasthenia or hysteria — that something more is required, namely, a psychical shock. But why does psychical shock not accompany the severe concussion of foot-ball playing? It would seem to me that it is for two reasons: First, the intense mental excitement and concentration of thought which dominates the mind of the foot-ball player, and crowds out every other form of mental excitation. Second, and perhaps more important, is the preparedness or negative expectation of the mind with which the player goes into the contest. A foot-ball player is perfectly well aware of, and prepared for, any accident that may follow; he knows the kind and extent of any injury he is likely to receive, and has made up his mind to the possibility of it; and therefore there is no shock or terror just antecedent to or at the moment when he is injured; and, above all, he feels confident that the danger to life is *nil.* In railroad accidents it is otherwise. All previous knowledge and experience has cultivated in the mind of the public and individual the idea that a railroad accident is a terrible thing, and that every sort of calamity, and especially death, is likely to result. Given a railroad accident, and there is at the critical moment an expectation, the result of a previous auto-suggestion, that the individual is likely to be killed or badly maimed; at the first crash or indication of an accident, these ideas at once arise in an indefinite form in the mind, and with them, terror and psychical shock. The same is true of the effect of earthquakes, which it is known are often followed by neuroses.

Now, in the absence of definite facts, but reasoning by analogy, it would seem that the psychical conditions of future naval-war battles would far more closely resemble those of foot-ball playing than railroad accidents. The soldier or sailor, by a long course of years of mental training, has made up his mind to all sorts of possible contingencies; he has faced beforehand the idea of wounds or death, and accepts the results. He is willing, as a rule, to take his chances; and there will be, as the writer of the editorial suggests in discussing this side of the question, no element of surprise, and consequently not that kind of terror which causes neuroses. Perhaps under exceptional circumstances, like that of the blowing up of the *Maine*, the elements of surprise and unpreparedness may enter.

This preparedness of the mind in expecting future nervous events, probably plays a large part in the slight accidents of social life. It is notorious that fainting has gone out of fashion amongst women as compared to its frequency in the last two or three generations. The heroines of the old-fashioned novel always fainted under certain circumstances. The psychological explanation of this probably is that a girl was brought up from childhood, by the subtle unconscious education of surroundings and public opinion, with the idea that under certain conditions of excitement she would faint. The suggestion is put into her mind as in a hypnotic experiment; later, some trivial but expected event occurs, and the future heroine of romances faints in accordance with the early-received suggestion. The suggestion acts here as it does in hypnosis in producing post-hypnotic phenomena.

Returning to the matter of foot-ball accidents, it may be mentioned that an analogous class of facts has been learned regarding the frequency of traumatic neuroses amongst railroad employees, as contrasted with their frequency amongst the travelling public. According to Van Outen, out of 18,275 injured employees of a railroad, there were only 8 cases of traumatic neurosis, or 1 in 2,284$\frac{3}{8}$; while of 844 injured passengers there were 11 cases, or 1 in 76$\frac{8}{11}$; all which points to the conclusion that mental preparedness or expectation is a very important factor in inducing that mental disorganization which is the neurosis.

Note. — Since the above was written it was stated during a discussion of the Medico-Psychological Society, that Dr. M. A. Starr had reported several cases resulting from foot-ball playing. The rarity of such accidents is, nevertheless, a fact, and that a few cases should occur in no way invalidates the above conclusions, but rather is what should be expected.

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A CASE OF CARBOLIC-ACID POISONING.[1]

BY FRANK HOLYOKE, M.D., HOLYOKE,
Medical Examiner.

At four o'clock P. M. on January 9th, Alfred S., an Englishman, fifty-three years of age, died suddenly in Holyoke at his sister's home, before medical aid could reach him. He had been a heavy drinker of alcoholic stimulants for many years; but the sister and others in the house were certain that he had not had any alcoholic drink for two days and had not taken food for twenty-four hours.

At six o'clock, two hours after the man's death, I viewed the body, which was found lying in his underflannels obliquely across the bed on his back. The head lay towards the foot of the bed. The bed-clothes (in disorder) were soaked with urine. The pillow, which had been placed under his head by his sister about twenty-five minutes before death, was wet with sweat where his face had lain. There was no sign of vomiting.

An empty two-ounce bottle labelled "Pure Carbolic Acid," I found under his pillow at the head of the bed. The bottle was corked. There was no trace of any carbolic acid on the outside of the bottle beyond its lip. It had been bought at a local drug store and the sale properly registered as sold January 3d to Alfred S. "for a wash."

His sister's child, sixteen years of age, was seated with a playmate in the room next to his bedroom. She heard him swear loudly and then begin to moan; and she called her mother's attention to her uncle's moaning, which lasted possibly for three minutes before she gave the alarm. Her mother rushed in and found him lying as described, and heard him shouting loudly "How goes it?" but he was unconscious. He died about twenty-five minutes after she entered the room, during which time he appeared to be unconscious, no twitching or convulsive movement, or respirative sighing being observed. The eyes, she said, were staring and glassy.

The body was that of a well-developed man of large, powerful frame, six feet tall, weighing about one hundred and seventy pounds. The skin-surface, except for some light-colored, hypostatic spots over the back, had a very pale, yellowish, waxy appearance, having a moist, clammy feel and non-elastic. The belly was flat. No rigor mortis had developed. The mouth and eyes were closed; the pupils were moderately contracted. The expression of the countenance was composed.

The mucous membrane of the mouth, tongue and inside of the lips was of an opalescent whiteness. I could detect no odor of carbolic acid upon the fingers, nor from the body, nor from the mouth, though its odor in the room was reported by the sister as having been very strong while he yet breathed. But she thought nothing of that, for he had often used it on a varicose ulcer of the leg. The ulcer referred to, however, had evidently not been dressed for a number of days.

I decided to make an autopsy on the following morning; not because I had any reason to suspect foul play, but, first, because I had never seen a case of carbolic-acid poisoning, and, secondly, because it occurred to me that I might require such practical knowledge, at some future time, to better serve the interests of the State — though I am not certain that such excuses are justifiable.

The autopsy was held in his bedroom at 10.30 A. M. on the following day, the body having lain on a cooler over night. Rigor mortis was now complete, and there were hypostatic spots, deeper in color and covering a larger surface of the back and limbs. The odor of carbolic acid was not detected by any one present before the body was opened. On opening the abdomen the excessive fatty condition of the abdominal walls, the omentum, etc., was marked.

The outer wall of the small intestine throughout the first six feet of its length from the stomach appeared to be hard and extremely congested, dark red in color, and presenting to the touch a boggy or sausage-like feel, retaining any indentation made upon its outer surface as though it were filled with feces. This effect seems to be due in part to the hardening effect of the carbolic acid by its coagulating the albumin, and in part to the thickening of its walls; for on opening the gut the mucous membrane was so deeply corrugated and thickened that its folds filled and reduced the lumen of the gut to such an extent that it was almost obliterated and contained only a very small amount of soapy-colored fluid of strong carbolic odor. The mucous membrane in parts was of a dirty yellowish-white color, in parts of a pinkish boiled-salmon color. The affected intestine seemed very much heavier than normal, probably due in part to the excess of water in its tissues. Bearing in mind the strong affinity which carbolic acid has for water, it might have been of interest to weigh the six feet of empty intestine so seriously affected, that we might compare its weight with that of an equal length of healthy intestine to get an approximate idea of how much water may be taken up by the acid under such conditions. To this end chemistry and the microscope would be more perfect aids.

The external appearances of the stomach were the same as those of the small intestine. It contained two ounces of opaque, light coffee-and-milk-colored fluid (with slight flocculent sediment of a yellowish cast) and smelling strongly of carbolic acid. The gastric walls were thickened and hardened, and the stomach as a whole was very markedly contracted. The mucous membrane was of a dirty yellowish-white color, roughened, and so deeply corrugated that it reminded one strongly, when turned inside out, of the convolutions of a brain; as one physician present aptly suggested, "his brains were in his stomach, and no wonder he died."

The mucous membrane of the esophagus was thickened, hardened and whitened but not markedly corrugated, and it looked like the surface of a wet, white, kid glove.

The spleen was more than twice its normal size, its capsule thickened, its surface of a light whitish-blue color. On attempting to remove the spleen it tore readily. Its tissue presented a deep purplish color, and was so much softened that it dropped to pieces by its own weight.

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[1] Read before the Massachusetts Medico-Legal Society, February 2, 1898.

The kidneys were deeply imbedded in fatty tissue; they were slightly enlarged and moderately congested. The capsules were easily removed. The anterior surface of the fatty tissue surrounding the right kidney had over an area of two by three inches, a light brown, dried, cauterized, granular appearance where it lay in contact with the small intestine, showing that the effect of the carbolic acid had passed through the intestinal wall.

The liver was hypertrophied, but quite normal in color.

The gall-bladder was fully distended with a pale, thin, green, biliary fluid. The bile-duct contained two gallstones, each the size of a hazel-nut.

The urinary bladder contained one and one-half ounces of pale yellowish urine, of acid reaction.

Just anterior to the prostate gland was a firm and very narrow stricture, which I learned later had been causing him much trouble. I was very much impressed by the fact that the pelvic and abdominal cavity throughout was noticeably free from moisture, as were also the pleural cavities and the pericardium; all these parts were exceptionally dry.

There were extensive and very general, firm, fibrinous adhesions of the pleura of the right lung to the chest wall and to the diaphragm, which, in turn, was firmly adherent to the liver. On the surface of both lungs there was considerable bluish-black pigmentation of carbon deposit. The same pigmentation was sprinkled throughout the lung tissue. Some postmortem hypostatic congestion of the posterior part of the lower lobes was seen; otherwise the lungs were not congested, but considerable mucus was found in the larger bronchial tubes, especially at the bifurcation of the trachea, where the mucus was thick, ropy and of a reddish cast. The mucous membrane of the trachea was reddened throughout its lower half, where it lay in contact with the esophagus.

The pericardium was normal. The heart was hypertrophied, and there was excessive fatty degeneration of the same. The left ventricle was firmly contracted. The right ventricle was flaccid; its muscular tissue had a pale lavender color, and was very friable as were also the columnæ carneæ. The valves were all normal. The veins were well filled with fluid blood; the arterial system was quite empty.

The blood was everywhere thin, black and fluid; not a trace of a clot to be found anywhere.

The head was not opened.

With the exception of the evidence of an old pleurisy, we find here some of the pathological conditions which are attributed to the habitual and excessive use of alcoholic stimulants blended with those quoted as directly referable to carbolic-acid poisoning; the latter being the extreme general pallor of the skin, the condition of the alimentary canal as described, the contracted pupil, the firmly contracted left and the flaccid right ventricle, the very dark and perfectly fluid condition of the blood everywhere, the reddened mucous membrane of the trachea and excess of thick mucus there found; and, may I not add, though I have nowhere seen it mentioned by any author, the peculiar freedom from moisture of the pelvic, abdominal and pleural cavities and the pericardial sac. This I suggest as a postmortem effect of a large dose of pure carbolic acid which it might be well for us to consider in our future cases, and which some one of you may have already noted, though I can find no reference to it in any work on toxicology. Some authors, Witthaus and Becker, for example, are most lamentably brief and incomplete in their description of the post-mortem appearances, while some others are inclined to be too dogmatic and not broad enough in their description of post-mortem effects of this poison.

The contents of the stomach answer all tests for carbolic acid; though from the one and one-half ounces of urine which was collected from the bladder I could not only discover no smell of carbolic acid but on standing exposed to the air for three days it never changed to the olive-green or other shades so frequently referred to in text-books, and upon which so much stress is laid as characteristic of carbolic-acid poisoning. On agitating it with ether I could not, on evaporating, get the slightest smell or trace of carbolic acid.

I believe that in most doubtful cases of carbolic-acid poisoning, accompanied with retention of urine, and in cases when death is not so rapidly fatal as in this, we are more likely to find the carbolic in the urine.

THE BUTTERS HOMICIDE AFFAIR.[1]

REPORTED BY GEORGE E. TITCOMB, M.D., CONCORD, MASS.,
Medical Examiner.

On the 4th day of September, 1897, J. M. Harris, aged forty-eight years, came to Concord from Waltham, arriving at a few minutes after 12 o'clock, noon. He proceeded to the house of G. S. Butters, in which were Mrs. Butters and her son Carl, shot and killed Mrs. Butters, fired two bullets into Carl and one into his own head. At between 12.30 and 12.40 P. M. of the same day, I was summoned, by telephone, to go in haste to the Butters house, about one-eighth of a mile distant from my office. On my way to the Butters house I met Carl with blood upon his face, neck and clothing. He exclaimed that his mother had been murdered.

At my arrival upon the scene, I found Mrs. Butters lying upon the kitchen floor, dead. Harris was in the adjoining shed, sitting upon the floor, with blood oozing from a bullet wound in the right side of the head and from his nostrils. On a line with the floor of the orbit, this wound was about one inch above and one inch beyond the external border. The edges of the wound were blackened and charred. Harris seemed somewhat dazed and under the influence of alcoholic stimulants; but when asked if he shot Mrs. Butters, replied, "I am twenty-one, as well as you." Harris and Carl were sent to the Massachusetts General Hospital for treatment.

I found upon inquiry that Harris entered the Butters house by the shed door; had some conversation about money with Mrs. Butters and Carl in the kitchen. Carl sat down and began to write, with Mrs. Butters and Harris standing. Carl heard a report, saw his mother fall, arose, received a shot, staggered, when he received a second shot and fell. As he again arose, a third shot was fired at him, but the bullet entered the body of Mrs. Butters. Harris then sent a ball into his own head.

At 7.30 o'clock in the afternoon of the day of the murder, I made an autopsy. The body was well nourished. Rigor mortis was present. Blood stains were upon the forehead, and blood was in the nostrils and in the wound in the left side of the head and over the left side of the head and face. Blood stains appeared also upon the fingers of the right hand. There was a wound in the right side of the body between the seventh and eighth ribs, two and a half inches below the right nipple and one inch to the right of it.

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[1] Read before the Massachusetts Medico-Legal Society, February 2, 1898.

Internal examination: About a pint of blood was found in the upper part of the abdominal cavity. A bullet entered the right side of the body between the seventh and eighth ribs, as noted in the description of the external wound, passed through the anterior part of the right lobe of the liver, lacerating the under side of the left lobe, thence to the stomach, perforating the anterior wall twice near the pyloric end; thence to the ninth rib on the left side, fracturing the same one and a half inches from its attachment to the costal cartilage. This ball was found in the tissues between the fractured rib and the outer surface of the body.

External to the wall of the uterus there were two small fibroid tumors. The kidneys were contracted. Other than this the organs of the abdominal and thoracic cavities were practically normal.

There was a bullet wound midway between the external canthus of the left eye and the lower end of the lower lobe of the left ear. A director was passed through this wound four and a quarter inches inwards, downwards and backwards. When the cranium was opened, the dura mater was seen to be normal. Clotted blood lay under the pia mater, between the convolutions and in the cavities of the brain. There was a comminuted fracture of the basilar process of the occipital bone and the bullet had lodged in the soft tissues to the right and below. The bullet did not enter the cranial cavity. It came in contact with the basilar process on the under side.

From the evidence obtained I come to the conclusion that the bullet which entered the left side of the head of Mrs. Butters was the one which she first received and the one which caused her death, that being the side of the body presented to the assailant when the first shot was fired. As Mrs. Butters fell she turned over upon her back presenting the right side of her body to the assailant, and the ball which entered this side was probably intended for Carl, as he was between his mother and the murderer when fired at the third time.

I find from the hospital records that when Harris entered, there was no vision in the right eye; no paralysis and no head symptoms. Observations with the x-rays gave negative results. On September 10, 1897, the right eye was removed and a shaving of a bullet was found in the substance of the lower lid.

Carl stated that the shooting occurred when his assailant was about four feet away. There were powder grains in the side of his face. Just outside the left ala nasi, there was a wound with ragged blackened edges. Another wound of entrance was found just outside the left sterno-mastoid, about one inch and a half from the clavicle. The x-rays showed one bullet near the transverse process of the vertebræ on the right side, close under the angle of the jaw; the second bullet was located just above the clavicle and outside the sterno-mastoid on the right side. There was no special disturbance from these bullets.

Harris at his preliminary hearing pleaded not guilty. He was indicted in October, 1897, by the grand jury. He was arraigned in December, 1897, and pleaded not guilty. January 10, 1898, he pleaded "guilty of murder in the second degree" and was sentenced by the court to imprisonment for life. At this session of the court, District Attorney Weir, after giving a brief account of the crime, stated the position of the prosecution, as follows:

> At the last October term, the grand jury for this county returned into court an indictment against Harris charging him with the murder of Mrs. Butters. To this indictment he has now pleaded that he is guilty of murder in the second degree. The attorneys for the Commonwealth, after careful consideration, have decided to accept this plea. They do this because they believe that the evidence does not warrant a finding beyond a reasonable doubt that the act of Harris was done with that deliberate premeditation which, if the case was tried, would justify a jury in returning a verdict of guilty of murder in the first degree. They believe that the evidence indicates that Harris was acting upon an impulse of the moment rather than upon any prearranged plan. There can be no doubt that Harris's attempt to take his own life was genuine. He was so seriously wounded that it was thought for a time that he might not recover. The bullet entered his head and has not yet been extracted and he has thereby lost the use of one eye. The fact that besides attempting suicide, he tried to kill two persons with whom he had been on more or less friendly terms has some tendency to show a want of deliberation. It is now known that it had been the custom of Harris to carry a revolver, and the fact that he had one with him on the day of the murder does not, therefore, of itself prove premeditation.
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> Since his confinement in jail he has been carefully examined by two experts on mental diseases, one, Dr. Jelly, of Boston, at the request of the Commonwealth's attorneys, and the other, Dr. Cowles, of the McLean Hospital, at the request of the counsel of the defendant. The physicians agree that he was sane at the time of the murder and is now sane, but they both admit that, considering all the circumstances, he might have been acting more or less automatically at the time, because of his long continued use of alcoholic stimulants and because of his excessive use of them on that and the preceding day, and they cannot say that he was not so acting. The Commonwealth has no evidence which can materially control the inference to be drawn from the facts of the case as here presented that Harris was acting upon impulse rather than from any preconceived purpose. There seems, therefore, to the prosecuting attorneys to be a want of proof of that deliberate premeditation which is and should be required in all cases before a verdict of guilty of murder in the first degree can be justified. For this reason the plea of guilty of murder in the second degree which Harris now makes and which means that his punishment is to be imprisonment for life is accepted. This decision, if it is right, means that a trial is now unnecessary and that the county is legitimately relieved of the great expense of a murder trial. It is also proper to state at this time, that Mr. Butters, the husband of Mrs. Butters, and their son, Carl, approve of this disposition of the case.

Mr. Adams spoke briefly for the defence, stating that the defendant's plea was made on the advice of his counsel, and that the end would probably be the same if a trial was held. Judge Fessenden then imposed sentence.

THE NEXT INTERNATIONAL MEDICAL CONGRESS. — M. Félix Faure, President of the French Republic, has consented to preside at the first session of the International Medical Congress to be held in Paris in 1900.

CHOLIN, THE ACTIVE PRINCIPLE IN FLORENCE'S TEST FOR SEMEN.[1]

BY WM. F. WHITNEY, M.D., BOSTON.

At the meeting of the Society a year ago, I presented the results of my investigations[2] of the iodine test for seminal stains first published by Florence[3] and which he regarded as the reaction of an alkaloidal substance peculiar to the semen, which he called "virispermin." Since then the subject has been studied by Richter,[4] who has shown that it is not a specific substance, but one of the products of the decomposition of albuminoid material, namely, licithin, or perhaps more properly one of its products, cholin, which gives the reaction.

He has been able to obtain the test crystals from portions of all of the organs of the body, white of egg, etc., which have been allowed to decompose, as well as from the isolated chemical substances themselves. I have also obtained them from the adrenal gland (which contains licithin in a relatively large per cent.) by allowing it to stand at the room temperature for twenty-four hours and then testing the fluid expressed from it.

The semen, however, still seems to be the only secretion in which this substance is always formed quickly and in large amounts after drying, and therefore these observations do not impair the value of the test as a preliminary one; for by it those stains can be readily picked out on which time should be spent in searching for the only positive proof of semen, namely, the spermatozoa.

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Medical Progress.

PROGRESS IN PUBLIC HYGIENE.

BY S. W. ABBOTT, M.D.

(Concluded from No. 16, p. 372.)

HOUSEHOLD DISINFECTION FROM A SCIENTIFIC AND PRACTICAL POINT OF VIEW.[8]

At a recent meeting of the German Society of Public Health, the two principal disputants upon this topic were Professor Dr. Esmarch, and Burgomeister Zweigert of Essen.

Dr. Esmarch's propositions were as follows:

(1) The propositions stated in 1890 by Professor Gaffky, and discussed later in the German Public Health Society, in regard to household disinfection may be regarded as correct to-day in every particular.

(2) Meanwhile, many districts have established arrangements by which disinfection of dwellings is made possible.

(3) The methods and regulations for the disinfection of houses in practice up to this date are susceptible of improvement in several directions, as follows:

(*a*) In the regulations for household disinfection as well as in its execution greater attention should be paid to the nature and mode of spread of the different infectious diseases, as well as to the local conditions; under certain circumstances, disinfection may not be necessary for the whole dwelling, but may be limited to the sick-room.

(*b*) The extent of the disinfection should be determined as far as possible by medical authority.

(*c*) Greater care should be taken, that the right time be chosen for disinfection, in order that a new infection of the dwelling may not follow the disinfection. In the case of cholera and diphtheria this can be decided by bacteriological examination. In other infectious diseases it must be determined upon medical authority.

(*d*) Care should be taken during disinfection, that the infection is not spread by the other occupants of the dwelling.

The burden of Zweigert's argument was to show that chemical and other special means of disinfection are not essential and that thorough scouring of surfaces of rooms and airing them is sufficient. He believed that science by means of bacteriological investigations should present more exact proofs that disease germs are actually present upon the ceilings, walls and floors of rooms during and at the close of cases of illness from infectious disease, and that they cannot be destroyed by simple scouring and airing of these apartments. He also urged the necessity of prompt notification of all infectious diseases by the attending physician, both as to the first occurrence of cases, and also as to the end of the illness when disinfection should take place.

The lively discussion which followed these propositions showed that the weight of opinion was not with Zweigert. Staff-Surgeon Pfuhl, of the German Army, could not agree with Zweigert, and said that airing rooms only removes the foul odor and the moisture, but does not destroy disease germs. Professor Pistor believed that new and efficient methods of disinfection should be adopted by local authorities without the necessity of waiting for legislation to introduce them.

Dr. Esmarch, in conclusion, urged the need of discrimination in regard to the disinfection of whole houses, or only the rooms occupied by the sick. He stated that houses are now in use in some German cities to which families can be temporarily moved while their own habitations are being disinfected.

The liability of physicians to become conveyers of infection having been suggested, he stated that much greater care is now taken by the profession to prevent its transmission. Many cases of infection occur through the medium of public conveyances.[9]

He alluded to the necessity of greater care in cleansing the lower half of the walls of rooms than is required for the upper half. But the character of the disease and the liability to spread through the medium of dust occasionally require equal care to be taken with all the surfaces of the room. The disputant closed by commending the use of formaldehyde.

FORMALDEHYDE DISINFECTION.[10]

Walter enumerates the following advantages and disadvantages of disinfection by formaldehyde:

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[1] Read before the Massachusetts Medico-Legal Society, February 2, 1898.

[2] The Identification of Seminal Stains, Boston Medical and Surgical Journal, 1897, No. 14.

[3] Du sperme et de tâches de sperme, Arch. d'Anthropologie Criminelle, tomes x et xi.

[4] Du mikrochemische Nachweis von Sperma. Weiner klinischer Wochenschrift, 1897, No. 24. Die Spermaprobe von Florence, Zeitsch. f. Medizinalbeamte, 1897, No. 24.

[8] Vierteljahrsschrift für öff. Gesundheitspflege, 1898, vol. xxx, p. 156.

[9] Out of a dozen cases of small-pox occurring in Massachusetts in the past two years, three or more were cleaners of Pullman cars. Small towns in Massachusetts located upon railway lines are found to suffer more from infectious diseases than other towns of equal size not so located. — Ed.

[10] Zeitschrift für Hygiene, vol. xxvi, p. 454.

Advantages.

(1) Certainty of disinfection without injury of objects.

(2) Easy connection with existing apparatus for disinfection by steam.

(3) The formaldehyde can be collected in water and used again in the form of a solution.

Disadvantages.

(1) For operation with increased pressure, the apparatus must be strong, under police control and requires an expert to direct its operation.

(2) It is doubtful whether, in a room of large extent, the formaldehyde gas will reach the walls with sufficient concentration and intensity to be effective.

(3) Disinfection of clothing cannot be performed in the dwelling, but it must be removed for that purpose.

The principal results of the critical, experimental work may be summed up as follows:

(1) We cannot, with formaldehyde, disinfect a room and all its contents in one operation, no matter how the gas is developed.

(2) Nevertheless, disinfection by formaldehyde constitutes a valuable addition to the general means of disinfection.

(3) Streaming formaldehyde is not a mere surface infectant.

(4) It is practicable by this means to disinfect clothing, uniforms and other articles, effectively and without injury.

(5) The present methods admit of technical improvement.

ON THE EXISTENCE OF TUBERCLE BACILLI IN BUTTER.[11]

Dr. L. Rabinowitsch reviews this question, and shows considerable variability in opinion upon the subject. Galtier made cheese from milk in which he had mixed tuberculous matter, and the inoculations of this cheese caused tuberculosis. Heim mixed tuberculous bacilli with butter and found that the inoculation of this butter produced tuberculosis as late as 30 days afterward. Gasperini found that the bacilli remained active for 123 days. Bang proved that butter made from milk of cows having advanced mammary tuberculosis is infectious. The following experimenters inoculated guinea-pigs with butter bought in the markets, with results as stated: Brusaferro produced tuberculosis with 1 specimen out of 9; Roth with 2 out of 20; Schuchardt with 1 out of 42; Gröning with 8 out of 17; Obermüller with 14 out of 14.

Rabinowitsch made inoculations representing 80 specimens of butter obtained in Berlin and in Philadelphia. The inoculations of guinea-pigs amounted to 119. In none of these cases was satisfactory evidence obtained of genuine tuberculosis. But in 23 specimens lesions were caused in guinea-pigs, which both macroscopically and microscopically appeared like genuine tuberculosis, but could be distinguished from it on close analysis.

The author admits that the dangers of transmitting tuberculosis through the medium of cheap butter are not serious, and the positive results obtained by the other experimenters admit of the same explanation. The investigation appears to have been suggested and investigated by Koch himself.

CIDER AS A CULTURE MEDIUM OF DISEASE-GERMS.

Dr. Vigot,[12] of Caen, has investigated the question whether the typhoid bacillus and the colon bacillus can survive and continue to be pathogenic in cider taken from the press, before fermentation. This question arose in consequence of a custom, prevalent in Normandy, of using very filthy water, under the pretext of giving a better taste to the cider. Neither the typhoid nor the colon bacillus would grow in pure cider, or cider diluted with distilled water, and inoculations of animals were, except in one instance, harmless.

The author discusses the cause of this circumstance, and concludes that it is not the acidity, but the fermentation which hinders the growth of the bacilli, and that when the bacillus is found, the cider has been diluted, with the water containing the bacillus, after fermentation has occurred. Hence there may be a danger here which has been overlooked in localities where the dilution of cider with filthy water is a common custom.

FATAL CASE OF LEAD-POISONING.[13]

A supply of water for a private house was taken from a spring by means of a lead pipe attached to a pump about 175 feet distant. The plumber who laid the pipe allowed a considerable amount of lead filings to remain at the joints which were soldered in the usual manner.

Soon after the work was completed a young woman at the house was taken ill, and the father and mother suffered severely with colic. The girl died, lead-poisoning was suspected, and a government investigation was made. The autopsy demonstrated lead in several organs, and the water, which was exceedingly pure, was found to have dissolved 0.95 mg. per litre. The hardness was only 1.4.

SCHOOL HYGIENE.

Considerable doubt has been raised as to the efficiency of systems of heating and ventilation, in which such systems include the methods of disposal of excreta, especially in the warm season, when the general heating apparatus is not in operation and other fires are apt to be neglected. The following quotation[14] has a direct bearing on this subject:

"The sole dependence of the system, therefore, lies in a continuous current of air from the rooms, through the closets, and up the vent shaft. The natural flow must, of course, be in this direction, the aspirating power of the vent shaft being depended upon to furnish the motive power. If by any chance the fire in the stack heater goes out, then there is liable to be a reversal of the current.

"In only one instance, however, did I find the fire out in the stack heater, due evidently to carelessness on the part of the janitor, who has since been removed. In general I found good fires in the stack heaters, so that whatever defects were found in the system could hardly be attributed to this source.

"To my mind the most serious defect seems to have been the attempt to combine at all this system with that of heating and ventilating, systems which are diametrically opposed to each other and which have no connection between them. For why should we be constantly running the danger of a backward draught; and why should the teachers and pupils be constantly blockaded behind closed doors and windows when there is no necessity; and why should the atmosphere be poisoned and the soil polluted merely for the sake of retaining excreta upon the premises?

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[11] Zeitschrift für Hygiene u. Inf. Krankheiten, 1897, xxvi, p. 90.

[12] Tribune Médicale, August 18, 1897, p. 648.

[13] Gesundheits-Ingenieur, March 31, 1897, p. 87.

[14] Report of the Health Officer of the District of Columbia, 1897, p. 68.

"With this part of the system removed, back draughts lose part of their terror."

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting, Wednesday, March 2, 1898, Dr. H. L. Burrell in the chair.

Dr. J. E. Goldthwait showed some tracings taken from the heads of infants and showing the distortion of the base of the skull which may result from a faulty position continued for a considerable length of time.

Dr. F. S. Watson showed a patient upon whom he had performed the combined operation of suprapubic and perineal prostatectomy, together with the specimen, a full report of which will appear in the next issue of the Journal.

Dr. G. E. Brewer, of New York, read a paper entitled

SOME OBSERVATIONS UPON IMPROVED ASEPTIC TECHNIQUE.

In this paper the writer gave the results of a series of experiments undertaken to improve the technique at the New York City Hospital. The reason for undertaking the investigation was the frequent occurrence of suppuration in presumably aseptic operative cases.

The first year was devoted to improved methods of hand disinfection, improved methods of sterilizing the ligature and suture material, improved methods of disinfecting the patient's skin and preventing errors in technics.

The second year was devoted to a thorough bacteriological investigation of methods and material, which showed a number of possible sources of wound infection, including the hands of the operator and assistants (which it was impossible to sterilize by any of the well-known methods), the skin of the patient, the dressings, towels, sponges, etc., and the air of the operating-room, which was found to be badly contaminated.

A number of changes were made in the technique formerly employed, the most important of which was the adoption of rubber gloves by the operative surgeon and all assistants. These it was found could be sterilized by boiling for five minutes.

A marked improvement in results followed these changes in technique.

The third year was devoted largely to the perfection of methods already introduced, and to a systematic study of the antiseptic value of formaldehyde and its preparations.

Dr. Harrington: The paper has been a very interesting one. Dr. Brewer's methods show a great deal of care and persistence. One cannot find fault with any method which improves our results. I never myself have used gloves, although I have seen them used at the Massachusetts Hospital. In the effort to obtain aseptic wounds it has always seemed to me that one of the most important things was to keep the operator's hands and the assistants' hands out of the wound as much as possible. The use of gloves of course will do this, but there is undoubtedly a loss of tactile sense. One can accomplish a great deal by careful attention to the use of instruments instead of the use of the fingers. One is very much inclined to put the hands into a wound oftener than is necessary; at the same time it is often necessary to do this, and if we are going to get an improvement of two per cent. in asepsis by the use of gloves, and no loss in other respects, I think we should use them whether they are a source of inconvenience or not. Dr. Brewer's statistics of septic wounds sound worse than they are, because he includes in septic wounds all stitch suppurations which hardly can be said, as a rule, to interfere with the result of the operation. Personally, I do not like to use any kind of antiseptics in aseptic wounds after the first incision, nor do I like to use drainage in such cases.

Dr. R. M. Pearce: In my first experiments on the sterilization of catgut with formaldehyde, the agent was applied by vaporizing small amounts of the 40-per-cent solution (formalin), into a glass chamber in which the catgut was exposed. Every experiment was eminently successful so far as sterilization itself and alone was concerned; but as sterility must not be obtained at the cost of strength and flexibility, these qualities must be taken into account. It was found that exposure to a moist atmosphere containing formaldehyde (and one containing vaporized formalin is necessarily moist) was very injurious to the smaller sizes. In fact, some skeins became so brittle that it was impossible to tie a hard knot in them since the mere drawing up of the knot was sufficient to break the gut.

I next tried the solid pastilles of paraform, heating them in the Schering lamp and conducting the vapor directly into the space in which the catgut was enclosed. This process gave exactly the same results in every way; the sterilization was perfect, but the atmosphere was moist from the water derived from the combustion of the alcohol in the lamp, and the strength of the gut was impaired as before.

Neither of these processes, therefore, was of the slighest practical use so far as the small and most commonly used sizes were concerned.

Believing that the moisture had much to do with causing the diminution in strength and flexibility, I determined to try the gas in a dry condition. But first I thought it best to see what effect, if any, the gas would have on strength. A preliminary series of strength tests indicated that injurious effects were improbable.

Then, well-handled specimens of catgut were exposed. Control cultures yielded abundant growths. Cultures taken at the end of one, two and three days yielded no growth, showing that whatever organisms there were in and on these specimens had succumbed.

In order to make the test as severe as possible, I determined to try the experiment of infecting different sized skeins of catgut in the most thorough manner with the most resistant pathogenic organisms, and then subject them to the action of the dry gas. The skeins, cut into inch pieces, were soaked for a week or ten days in bouillon cultures of sporulating anthrax. They were then withdrawn and divided into two equal portions, one of which was gently dried over night, the other being left in its wet condition. Control cultures showed very active growth, not alone of anthrax, but of other organisms which had been introduced by the catgut. The wet and dry specimens were then exposed to the dry gas, and pieces of each size, wet and dry, were planted at the expiration of twenty-four, forty-eight and seventy-two hours. With the exception of a growth which was obtained from a single specimen of the wet cultures after twenty-four hours' exposure, every culture was perfectly sterile. Next, a number of skeins of different sizes were exposed ten days, and others twice that time to the dry gas, and then tested as to strength and flexibility. Several hundred (481) tests made with sterilized and unsterilized gut, each test being of a piece about five inches long with a knot in the middle, showed that the dry gas acts only in the direction desired.

The application of the dry gas, besides giving perfect results in both directions, possesses the additional advantage of utmost simplicity. In other processes of sterilization, more or less manipulation, time, apparatus and after-treatment are required. With this method nothing is required but a wide-mouthed jar, some paraform pastilles, a piece of wire gauze or open-meshed cloth, and a small beaker or wide-mouthed bottle. In my experiments, two sizes of jars were used with the same results. In the smaller, a dozen pastilles were put at the bottom, and covered with a piece of wire gauze to prevent actual contact with the gut. In the larger, a dozen pastilles were put into a small beaker covered with gauze.

The pastilles yield to the surrounding air within the jar a very considerable amount of gas, sufficient at least for complete sterilization.

I send with this the larger of the two jars used by me. The other had a capacity of about three pints.

Dr. Lovett: It seems to me that in any discussion on asepsis we must remember that asepsis from a bacteriological point of view is a relative rather than an absolute term. There are so many factors entering into it, so many sources of wound infection, that it is a problem that cannot be dealt with in a scientifically accurate way. Researches have shown that the majority of wounds that heal by first intention contain bacteria; and that these bacteria are virulent has been shown by cultures taken from wounds that have healed by first intention, so-called aseptic wounds. Consequently the question seems to be one of limiting the dosage of bacteria; and I think Dr. Brewer's paper is valuable in showing certain directions in which we can limit that dosage. There are certain factors coming into operative procedures which may be classed as sources of infection. Those are (1) the material, (2) the hands of the surgeon, (3) the skin of the patient, (4) the question of infection by micro-organisms floating in the air, and (5) the question of accidental infection during operation by assistants through carelessness, improper training or lack of organization.

(1) With regard to the material. At the City Hospital I think it has been pretty definitely proved that we are using sterile material. There are two or three practical matters that I thought might be of interest to mention that have come out of a certain amount of experience in the sterilizing room. In the first place, I think it is exceedingly important that in a large hospital a record should be kept of all sterilized material, and that all sterilized material should be vouched for. The method we have instituted is this: the sterilizations are numbered consecutively, and the date and the time of each sterilization are recorded and the temperature reached. Each bundle of material is numbered. These sterilizations are recorded in a book consecutively. The material is all sterilized a second time and numbered with the number of the second sterilization, and the second sterilization is also entered in the book. Then a book of operations is kept, and all the material used at the operation is entered by the number in this book. If I do a hernia and that hernia goes wrong and I have reason to believe I used infected material, I have an opportunity of tracing every bit of material used and seeing the date that it was sterilized, the length of time and the temperature reached. A point that came up in the investigation I think is worth insisting on, namely, that it takes a good while to raise the temperature of the middle of the load.

A lot of cold cotton sheets and sponges are packed into the sterilizer and the temperature is necessarily slowly raised in the interior. In some work we did at the hospital — perhaps before we understood the sterilizer perfectly — it seemed to take in the neighborhood of twenty minutes to get up the temperature of the inside of the load, and the only temperature we allow the sterilizing nurse to record is the temperature registered by a self-registering Centigrade thermometer in the interior of the load, not the temperature on the gauge on the outside. The nurse in charge is required to show a temperature of 115° C. in every sterilization and to maintain that one and a half hours. That is excessive and may be damaging to the material; but it certainly, as far as we can tell, yields sterile material. Samples of sterile material are examined bacteriologically once a week.

Another thing we came in contact with was the question whether stitch abscesses were evidence of infected suture material, and, as Dr. Councilman called to my attention, this is not the case, since perfectly sterile suture material may give rise to stitch abscesses, as the localization of a slight general wound infection.

(2) The skin of the surgeon. Of course, there is no question about the superiority of rubber gloves from the bacteriological point of view.

(3) With regard to the skin of the patient it seems to me that we have there a source of infection very hard to eliminate. I was interested in some experiments of Lannestino that are probably familiar to you, where he cut out a number of pieces of skin without sterilization and found bacteria. Specimens of sterilized skin were taken similarly and a large proportion of them after sterilization contained bacteria. They were sterilized three days with soap and water, alcohol and ether and turpentine. That is discouraging in our attempts to sterilize the skin of the patient.

(4) The question of air infection is of a great deal of interest; and a certain number of experiments with agar-agar plates that I made tended to show that we had certain forms of pyogenic organisms in the air, but that the number varied greatly under different conditions. There is a recent paper by Pfluger on air infection and mouth infection in which he showed pretty conclusively that there was possibility of infection from the mouth and breath. He took into his mouth some cultures of the bacillus prodigiosus and found that after coughing and sneezing and loud talk these bacteria were projected a distance of several metres. During ordinary conversation and ordinary breathing they were unable to obtain cultures.

(5) The infection by imperfect organization or carelessness needs only to be mentioned to be avoided.

Dr. Goldthwait: Dr. Bradford expected to be here to speak for the Children's Hospital, but he was detained and telephoned to me, asking me to briefly state the peculiarities of the aseptic methods there. Of course, the general principles must be very largely the same in any institution, and it seems to me that the things in which especial difference is found in a child's hospital are, in the first place, that the operation wound is of necessity very much nearer the regions of infection than is apt to be the case with the adult. A foot is nearer the rectum or vagina and the arm is nearer the mouth, etc.; so that unusual precautions are taken to protect the whole surface of the child, the whole body being dressed in aseptic clothing before it is put on the operating table. The child being smaller is more easily rolled or moved about and by being dressed in this way the danger of uncovering a portion not sterilized is lessened. Also, in cases where very great precautions are necessary a union suit is used, and the incision made directly through the suit, that having been sterilized before it is put on. The table is a specially prepared one, so that there is free drainage; and the parts on which the patient lies and with which the surgeon comes in contact are movable, and can be sterilized each time before using. Care is taken with children that drainage is free, so that the disadvantage of having a child lie in wet clothing is removed as much as possible. Aside from this, it seems to me the methods there are similar to those in other institutions.

Dr. Elliot: I am pleased that Dr. Brewer has brought up this subject. I think there is no doubt that rubber gloves are a great improvement. I used them all last summer with the greatest satisfaction. I think it is practically impossible to keep your staff clean when the hospital is full of appendicitis and complicated wounds. Everybody there is working at high pressure. Beside rubber gloves I have used with great satisfaction sterilized cotton gloves, which I like really better. I have had only one accident with rubber gloves, I missed a gall-stone operating with rubber gloves. I should have taken my gloves off for a gall-stone operation, but I had an infected finger at the time. It being the first gall-stone I ever missed when my finger was really on it, I attributed it to the rubber gloves. I shall not try to do that particular operation again with rubber gloves. Other operations I have had no difficulty with nor cause for complaint with gloves.

There is another point of view worth considering in this connection and that is the protection to surgeon's hands. Having suffered from a septic infection without having even scratched my hands, I made up my mind that gloves were necessaey to protect the hands of an active surgeon from the wear of scrubbing with antiseptic solutions. I found that with the corrosive disinfection all the fat in the hands was dissolved out, and hence the hand deprived of a natural protection is more easily infected by contamination with pus. If you are operating four hours a day, as most men are in a large hospital, your hands are soaked most of the time and few men have the epidermis to stand that. The nails and hair wear off, the skin wears down, the epithelium wears off, so that a very slight scratch goes through. We have not the protection nature intended us to have in the epithelium. Without any scratch whatever I have been infected over and over again in the hair follicles, therefore my experience of last summer and since then has led me to use the rubber gloves in all so-called wet operations where I expected pus and needed a good deal of swashing and antiseptics, and the sterilized cotton gloves in all the dry operations like a breast operation or appendicitis operation in the interval. I have carried out this plan with very satisfactory results both in the way of non-infection of patients and in the way of not using up my hands. I also found that with very dry hands from soaking in corrosive, an ointment of lanolin and a little boracic acid is a very effective protection.

Concerning stitch abscess, and even before bacteriologists showed that the skin held germs in spite of disinfection, I discovered that the aseptic stitch was not satisfactory. I have always used, and use to-day, antiseptic stitches, stitches soaked in corrosive sublimate for a week or two. All but the finest silk will not deteriorate by three weeks in strong corrosive solutions. Even with an antiseptic suture it is very important not to tie it tight. If you tie a stitch very tight it will suppurate in five or six days. I have repeatedly sewed up one half of the wound myself and allowed the house-surgeon to sew up the other half and have noticed that only the tight stitches irritated, the same material being used for all. I have made experiments as to how long stitches can be left in abdominal wounds. I tried all sorts of materials and left them in varying lengths of time. I found I could leave wire stitches in three weeks or longer, and when they cut the tissue healed behind. I found sterilized silk usually had to be taken out in eight or nine days. I found that antiseptic silkworm-gut kept in corrosive could be kept in two weeks and longer. The tighter a stitch is tied the greater the danger of a stitch abscess. If you strangle a bit of skin with bacteria in it they are bound to become active.

I think there is no doubt that mouth infection at the operation is a very important thing which has been neglected, so that not much talking should be allowed over an operation — not much loud talking or profanity. I think that rubber gloves or some gloves have come to stay. I do not propose to do another hospital service without gloves.

Dr. Richardson: Since seeing Halstead using gloves two or three years ago at Baltimore I have considered the feasibility of it very seriously. I don't know but we are going to be forced to use them in spite of our great reluctance to do so. It seems to me that with an active hospital service, with the present complicated methods of preparing the hands, with the thrusting of the bloody hands into antiseptic fluids, with the constant irritation of the skin by irritating chemicals we get the hands into a state in which it is more and more difficult to keep them clean. Whether it is absolutely necessary both for the protection of the patient and for the protection of the hands to use gloves, I for one am open to conviction. I don't wish to use either rubber or cotton gloves, for it seems to me a very serious disadvantage in operations in which the tactile perceptions should not be in the least impaired; on the other hand, for the surgeon's own protection and for the protection of his patient it seems essential at times to put into the wound nothing but what has been baked or boiled, and of course the hands cannot be thus treated. The percentage of infections to-day is extremely small, whether from the unimportant stitch abscesses or in the fatal infections which occasionally take place, for instance, in clean operations like hysterectomy, although that operation is not essentially a clean operation as some others are. I should like to be convinced that it is not necessary to use gloves, and yet I feel that to go from an acute general peritonitis, in which the infection may be of the most virulent form, to a clean operation, like removal of the breast, was a danger to the patient. I always feel great reluctance to subject the patient to that danger; and yet in those cases which are necessarily strongly impressed upon the memory I do not recollect infection. Yesterday morning I operated at 11.30 on an acute infectious appendicitis, and then operated upon a breast, and put my hands through the most thorough methods, more thorough than usual. I disinfected my hands with the permanganate of potash, oxalic acid and the peroxide of hydrogen and corrosive sublimate; then I went to a private operation in which I used permanganate of potash, oxalic acid and peroxide of hydrogen. I felt as if I might be subjecting that patient to an unnecessary danger, for in the afternoon some hours after the breast operation I still smelt the peculiar odor of acute infectious appendicitis. But in that case there has been no infection; perhaps it is not time yet. I am ready to use gloves. I think, however, we can reduce the dangers of local wound infection to a minimum by being extremely careful about handling the wound, as Dr. Harrington has said. I have been very careful of that a long time, and have done such an operation as removal of the breast and dissection of the axilla without touching the wound either by my own fingers or the assistant's fingers. The wound is touched indirectly by the surface of the gauze which the assistant uses in the wound and to a slight extent in tying the arteries; but those very bloody operations can generally be performed without getting enough blood on the hands to show, and I have applied that method and did yesterday and day before to removal of the acutely inflamed appendix. I was surprised to see that I could take out an appendix without putting my finger into the abdomen at all. That was a chronic appendix. In the acute appendix the day before, we removed the organ without putting the finger into the abdomen. Of course, it is impossible to do that in many cases.

Another thing that seems to me very important. That is absolute hemostasis. I think that all wounds are infected as Dr. Lovett has said: the dosage differs in different methods, but if we can keep it at the lowest by handling as little as possible, having absolute hemostasis by tying everything, in that way we can and do get a very good average result. There remain those occasional cases in which the most careful retrospection, the most rigid self-accusation fails to reveal the source of infection. In such operations as hysterectomy, an operation which to my mind is the one most uncertain of all the abdominal operations, an operation which performed with the greatest care and an operation that perhaps pleases you better than any other, may be the very one which will be fatal in the course of a few days from general peritonitis.

I think this subject is one of the most important and most interesting, and I welcome the discussion. I am afraid we have got to come to the rubber glove or some other method of protecting the hands, but I do not want to do it unless I find that there are many cases in which I cannot prevent infection; I shall feel inclined to continue for the present in the way I have done for the last five or ten years.

Dr. Brewer: I agree thoroughly with those who have spoken of the probable infection of all wounds. I do not suppose any surgical wound exists that is not infected. I do think this, however, that the infection that makes the wound suppurate is an infection that can generally be avoided; and that it is, in my belief, usually carried by the hands provided we have our material sterile. It has been said here that stitch infections are supposed largely to come from the organisms residing in the skin because they occur often with perfectly sterile suture material. It seems to me that we must all recognize the fact that it is impossible to sterilize the hands by any known method, and that we can perhaps better explain these cases of stitch infection by hand contamination. We may have perfectly sterile suture material taken from the bottle, by an assistant — which becomes infected by handling. For several years I thought that stitch infection came from sources that could not be remedied, still the marked diminution in that class of infections after the adoption of rubber gloves led me to believe that in a large number of instances it was due to indirect hand infection. In regard to the use of cotton gloves I do not think they are comparable to the rubber gloves, for the reason that they do not overcome the danger from perspiration and I believe the perspiration is an infectious agent, and most people in a long operation will have a good deal of it. With rubber gloves we have absolute protection from that. I think many sutures do favor suppuration by being tied too tightly and certain materials favor it more than others. I have used for cutaneous sutures almost invariably silkworm-gut, and find if it is tied too tight it will form a stitch abscess. Sutures should not be left in the tissues too long, but I have found with the use of formaline on the outside of the wound, by several layers of gauze wet in a solution of 1 to 50 that silkworm-gut sutures can remain almost indefinitely.

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NEW YORK ACADEMY OF MEDICINE.

Section on Obstetrics and Gynecology, April 7, 1898.

Dr. Wm. M. Polk, Chairman, made the

FINAL REPORT OF THE COMMITTEE ON THE SEMI-CENTENNIAL CELEBRATION.

In connection with this he presented a framed autograph copy of the address of President Grover Cleveland on the occasion. He said that there remained of the money subscribed for the celebration the sum of $660, and recommended, on behalf of the committee, that of this, $160 should be devoted to the publication of the anniversary addresses in the *Transactions* of the Academy, and that $500 should be set apart as the nucleus of a fund to be known as "The Semi-Centennial Library Fund." The recommendation of the committee was adopted by the Academy.

The subject for the evening's discussion was

UTERINE FIBROIDS.

Dr. George C. Freeborn read a paper on their

PATHOLOGY,

in which he reviewed the varieties and structure of the growths and the changes and degenerations to which they are subject. He stated that the largest number of fibroids which had been found in one uterus was 50, and that the largest tumor on record was that reported by Dr. Hunter, the weight of which was 140 pounds. A paper on

FIBROIDS COMPLICATING PREGNANCY,

by Dr. Henry C. Coe, was read by Dr. Tucker, Dr. Coe not being able to be present.

Allusion was made to the difference of opinion held by various authorities as to the significance of this complication. While some contended that it was almost invariably attended with the greatest possible danger, others went to the opposite extreme of making too light of the danger resulting; and Dr. Coe thought the safest position to occupy was one midway between these two extremes. On account of the diversity of conditions existing in different cases it was impossible to lay down any general rules in regard to the matter; but, from the standpoint of the general practitioner, there were a few definite facts which it might be of service to bear in mind. In the first place, the prevalent idea that conception is rare in women with uterine fibroids was without doubt correct; but at the same time it must be remembered that no variety of fibroid absolutely precluded the possibility of its occurrence. If the myoma were situated in the lower segment of the uterus the chances were greater of conception taking place.

In the case of an unmarried woman suffering from fibroid, he believed it was the duty of the physician to state plainly the dangers likely to arise from pregnancy and warn her against matrimony. Conception having occurred in a uterus affected with myoma, the indications calling for interference were: continued increase in the size of the tumor, hemorrhage and pressure symptoms. The site of the growth was of the greatest importance, and, as a rule, it could be stated that if it were near the fundus it would probably give rise to but little trouble. Possibly there might be no disturbance whatever. Situated in the true pelvis even a small tumor might cause the most serious results. In the case of intra-uterine polypi sloughing almost invariably resulted. It was well to bear in mind, however, that it was almost impossible to predict the sequel even in cases that appeared most threatening. Generally the most imminent danger was from hemorrhage.

The hope that subinvolution after parturition would put an end to the growth was usually fallacious. Pregnancy was by no means a cure. The diagnosis was a matter of great importance to the general practitioner, and the diagnosis, particularly if the fibroids were of the interstitial or submucous variety, was often attended by difficulty. Asymmetry of the uterus was not an infallible sign, for the reason that this condition had sometimes been noted in normal pregnancy. If there were any doubt on the matter, an examination under anesthesia was absolutely called for. There was no doubt considerable truth in the reproach sometimes heard that the gynecologists of the present day have become more careless in diagnosis as they have advanced in operative skill. The excuse offered was that it was now such an easy matter to perform celiotomy and find out the exact condition existing. It was hardly necessary to say that an interstitial fibroid having been recognized, it should be most carefully watched. It was scarcely possible for the patient to go to full term, and the medical attendant should be prepared to bring on premature labor or perform hysterectomy whenever the circumstances of the case called for one or the other of these procedures.

As a rule, the abdominal was preferable to the vaginal route for the removal of the pregnant fibroid uterus. In some circumstances a conservative myomectomy was advisable. If in any case there was a reasonable doubt about the diagnosis, an exploratory celiotomy should be made. Should the tumor not be discovered until the latter half of gestation, it was better to wait until near term if possible, and then perform Cæsarean section with subsequent supravaginal hysterectomy.

Dr. Wm. M. Polk read a paper on the

SURGICAL TREATMENT.

At the outset he dismissed as having been proved valueless such methods as ligating the uterine arteries. Our reliance, he said, must be placed on hysterectomy and myomectomy; and in the development of the latter method he thought would be found the field for the greatest progress in the future. Having decided in any case that hysterectomy was called for, was the abdominal or the vaginal operation to be selected? The latter was called for, in his opinion, when the size of the tumor was not greater than that of the normal uterus at the fourth month of pregnancy, if the pelvic and vaginal passages were of ample size, and if the uterine appendages were in a healthy condition. Any suspicion of suppurative disease in the ovaries or tubes would at once decide the surgeon in favor of celiotomy. Another complication that called for abdominal section was malignant degeneration of the myoma. The most frequent degeneration of this kind was sarcoma.

In performing vaginal hysterectomy the average operator should have a roomy pelvis and vagina. The normal type was the only one in which the procedure was admissible. A virginal vagina or a male pelvis were each contraindications. Vaginal hysterectomy was, then, preferable in cases with roomy pelvis and vagina, and where there was no malignant complication or disease of the appendages, and where the size of the tumor was not greater than the uterus at the fourth month of gestation. If any of these conditions are present abdominal hysterectomy was to be selected.

In performing the operation the foremost problem met with was the control of hemorrhage. It was now pretty generally agreed upon by surgeons that the best plan was to tie as the vessels were separated. Having spoken of some other points in the technique, Dr. Polk referred briefly to myomectomy. It was now recognized, he thought, that there were some cases in which this was imperative. In interstitial fibroma there was great danger of infection. Everything depended upon securing free drainage, and the mortality of the procedure was more a matter of drainage than anything else.

Dr. H. J. Boldt said that in the admirable paper by Dr. Freeborn on the pathology, he had been disappointed not to hear anything in regard to the primary origin of uterine fibromata. So far as his own microscopical studies went, it seemed probable that these growths really arose from the muscular structure of the smaller blood-vessels. It was from an examination of the smallest myomata only that we could hope to obtain any light on this subject. Among the changes occurring in the tumors enumerated by Dr. Freeborn was suppuration resulting from infection derived from the bladder and other adjacent organs. For his part he believed that it was impossible to trace any such infection. The only cause of suppuration in these growths, he thought, was intra-uterine traumatism, such as that resulting from the passage of a sound or instruments for inducing abortion.

Dr. Coe had stated that it depended chiefly on the situation of the fibroid whether there was a chance of the gestation going on to full term without endangering the patient's life. It was a fact, however, that in the great majority of cases abortion occurred anywhere between the second and fifth months of pregnancy. The cause of abortion was the same changes which ordinarily prevented conception, namely, those due to inflammation of the endometrium. If a patient should go to term it was far safer to perform abdominal section than to attempt to deliver *per vias naturales.* But in the event of a normal delivery, which sometimes occurred, there was always great danger in the puerperium. When such a threatening condition confronted us he thought we had no right to employ ordinary palliative methods of treatment, which were here only a loss of valuable time, but ought to remove the uterus at once.

Personally, he preferred the total extirpation of the uterus to the Porro operation, and he did not believe that in this class of cases the Porro operation was destined to remain in surgery. As to Dr. Coe's position in advising against matrimony in one who had uterine myoma, he thought this rather extreme ground to take. It was well known that in a large majority of instances women thus affected did not conceive at all, and that if they did, abortion usually resulted.

Taking up the discussion of Dr. Polk's paper, he said that with the present methods of operating we had come to consider hysterectomy not more serious than ovariotomy. As one of the conditions for vaginal hysterectomy, Dr. Polk had laid down the rule that the growth should not be larger than the gravid uterus at the fourth month; but many French surgeons were accustomed to operate through the vagina when it was considerably larger than this. For himself, so far as room from below was concerned, there was only one point that would deter him from vaginal hysterectomy, and that was the presence of a male pelvis. He would not hesitate on account of the size of the vagina. If it was too small it could be enlarged by incision; and while such a complication was certainly not desirable, it did not materially increase the danger of the operation. It was undoubtedly a fact that myomectomy was not performed as frequently here as its merits would seem to deserve, but in Germany it was oftener resorted to. Many myomectomies included one-third of the uterus. Dr. Polk had stated that in performing abdominal hysterectomy it was his practice to allow the ovaries to remain if these organs were healthy, for the purpose of leaving the system of the patient as undisturbed by nervous outbreaks as possible. He (Boldt) thought it was decidedly better to remove the ovaries as well as the uterus.

Dr. J. Riddle Goffe said there would seem to be considerable reason for leaving the ovaries and tubes undisturbed, for we all know what tremendous nerve-strains were apt to follow these operations. But in two cases in which he had allowed the ovaries to remain he had found it necessary to perform subsequent ovariotomies, although at the time the hysterectomy was done these organs were apparently perfectly normal. It would seem better, as a rule, therefore, to remove the ovaries along with the uterus. In performing hysterectomy he was a very strong advocate of leaving the cervix, as it seemed to him that this had a number of advantages over total extirpation. Among these were the following: Less hemorrhage; no suppuration following the operation; and a smooth and satisfactory convalescence. In addition, the natural supports of the vagina were restored as nearly as possible to their normal condition. Dr. Goffe demonstrated on the blackboard his method of operating, and in conclusion stated that before closing the abdominal walls he was accustomed to cauterize the cervical canal with pure carbolic acid. One advantage of this operation was that after it was concluded it was unnecessary to make any examination or dressing of the parts until the time came for removing the external abdominal stitches. In performing hysterectomy Dr. Polk had truly said that the most important question was the avoidance of hemorrhage, and he fully agreed with him as to the advisability of ligating each vessel separately. He was in the habit of using catgut, No. 8, and had always found it entirely satisfactory.

Dr. Vineberg said that Dr. Polk's advice to allow the ovaries and tubes to remain, in order to avoid the nervous disturbances likely to result from their removal, served to illustrate the fact, he thought, that we had yet a good deal to learn in regard to the functions of these organs. In other kinds of cases it sometimes became necessary to remove the ovaries simply on account of profound nervous disturbances of the system, and he mentioned one such instance met with in his own experience during the past year, in which the removal was followed by a cure. As to the matter of hysterectomy, he had been most successful with the total extirpation of the uterus, and every time that he had deviated from this he had had cause to regret it. One case had terminated fatally from peritonitis, and this was the only case of hysterectomy that he had lost in a number of years. In another case, while the patient's life was saved, there was considerable trouble. Free drainage was of the utmost importance in these cases, and the operation he thought demanded an unusual amount of skill.

He had hoped to hear more than had been said this evening in regard to the indications calling for operative interference. It seemed to him that, with our present knowledge as to the serious consequences likely to result from these growths, if we met with small uterine fibroids it was our duty to warn the patient of the risk incurred by allowing them to remain and increase, and to advise their early removal by the vagina. In regard to the ligation of the uterine arteries, which Dr. Polk had not thought it worth while to consider, he thought it might be of interest to state that he had resorted to this procedure in five cases. In four of them it was entirely without success, but in the fifth the results had been very satisfactory, and for several months now the patient had been practically well. With this case in view he believed that the method was deserving of a further trial.

Dr. Edward S. Peck has been appointed Professor of Diseases of the Eye at the New York Post-Graduate Medical School and Hospital.

Recent Literature.

The International Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners. By thirty-five British and American authors. Sixteenth year. New York: E. B. Treat & Co. 1898.

This well-known and useful publication has been thoroughly revised and brought up to date. It is enriched by a very handsomely illustrated atlas of the bacteria pathogenic to man, by S. G. Shattock, F.R C.S.

In a book of this size a careful and judicious selection has to be made from an immense amount of material, in order to publish the most valuable additions to medical and surgical methods during the year. The selection for this volume has in the main been carefully done, and the illustrations are numerous and well reproduced.

The book is an excellent handbook for ready reference with regard to new methods of treatment.

Outlines of Anatomy. A Guide to the Methodical Study of the Human Body in the Dissecting-Room. By Edmund W. Holmes, A.B., M.D., Demonstrator of Anatomy, University of Pennsylvania; Surgeon to the Methodist Episcopal Hospital; Consulting Surgeon to the State Asylum for the Insane, Norristown; Consulting Surgeon to the Northern Dispensary, etc., Philadelphia. 1897.

This little book is a praiseworthy attempt to enable the student of anatomy to systematize his work of dissection and the study of his part in such a way as to gain as thorough a knowledge of it as possible.

The work of each day of the twenty-one which are allotted to a "part" is thoroughly described and illustrated by diagrams.

The practical importance of a knowledge of the fasciæ, which are too often neglected by the student, is insisted upon, and the dissections of the thorax and abdominal cavity are described with a fulness commensurate with their importance. The difficulty of understanding the peritoneum and its relations is, however, so great, that the student would be much helped by the addition of a brief description of the development of the peritoneum.

The work is intended to supplement, and not replace, the larger text-books of anatomy, and ought to prove of distinct value to the student in enabling him to get the maximum benefit from his practical course in dissection.

Rush Medical College out of Debt. — The affiliation of Rush Medical College with the University of Chicago is now practically assured, the debt of $71,000 on the college having been paid off by members of the faculty and friends of the institution. Principal among those who rendered this assistance are Drs. Ephraim Ingals, Nicholas Senn and E. Fletcher Ingals. When the affiliation was announced by President Harper of the University of Chicago, it was conditional on the wiping out of the debt of $71,000, the change in the methods of choosing trustees, and the advance requirements for students. — *Journal of the American Medical Association.*

THE BOSTON

Medical and Surgical Journal.

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THE TESTIMONY OF GASTRODIAPHANY AS TO THE POSITION OF THE STOMACH.

Our knowledge in regard to the position of the stomach in the human body is derived principally from two sources: the record of the anatomists obtained by inspection of the cadaver; and the record of the clinicians obtained by the application of the several clinical methods of determining this question in the living.

A comparison of these records reveals the existence of a considerable discrepancy between the results obtained from the two separate sources. In the records taken in the living the position of the lower border of the normal stomach is much lower than in those from the cadaver. The discrepancy in question may be determined by a comparison of the anatomical records with those of any one of the accepted clinical methods of examination. Its existence and its extent are, however, most apparent and clearly defined in the records of the method of electrical illumination of the stomach known as gastrodiaphany.

In the cadaver, according to Luschka, the lowest point of the wall of the moderately filled stomach lies opposite a point in the anterior abdominal wall midway between the tip of the xiphoid cartilage and the navel in the xipho-umbilical line. This record of Luschka is accepted generally by anatomists to-day. Poirier gives a rather more precise record, placing the point opposite the disc which separates the third and fourth lumbar vertebræ, corresponding to a point on the anterior abdominal wall seven and one-half centimetres above the navel.

In the living, according to the record of the gastrodiaphane, the extreme lower border of the empty stomach, in the recumbent posture of the subject, lies within an area extending from a plane three centimetres above the umbilicus to the plane of the umbilicus. In the erect posture this border may lie in a plane two centimetres below the umbilicus. In the moderately distended stomach the lower border lies at or below the umbilicus in the recumbent posture, below it in the erect. The border may sink to a plane four centimetres below the navel with marked distention.

That is, there is a discrepancy of at least four centimetres, and in some cases seven centimetres, between the two records.

If the records of the gastrodiaphane are accurate or even approximately accurate, we must conclude that the lower border of the stomach occupies a considerably lower position in the living than that in which it is found in opening the abdomen after death.

The acceptance of a conclusion on this matter will depend then upon the proof of the accuracy of the records of the diaphane.

This question of the accuracy of the diaphane records has been investigated by Martius, Meltzing, Kuttner, Schwartz, Remond, Renvers, Kelling, Langerhans, Pariser, Hering, Einhorn and others. Theoretically, the error, if one exists, is in one of two directions. If inaccurate, the record is either too small, owing to the capacity of some of the tissues which lie in front of the stomach to absorb the light; or too large, owing to the capacity of the organs or tissues which lie in juxtaposition to the stomach to break or diffuse the light rays.

Schwartz has investigated the question on these lines by experiments on animals. His results show that none of the tissues in front of the lower border of the stomach, the fasciæ, muscles, or flesh absorb the light, and that of the organs or tissues in juxtaposition to the border, the intestine, the omentum and the fat tissue in the visceral and abdominal walls, none effect the light in such a manner as to magnify to a marked extent the actual dimensions in the illumination record.

The intestine filled with chyme or other contents, or with its walls coated with these substances as in the normal conditions, absorbs the light. Even when irrigated and distended with air it does not diffuse the light from the adjacent stomach in such a manner as to confuse the record. The fat tissues of the visceral and abdominal walls do possess some power of breaking and diffusing the light. In a thin subject this diffusion is of slight extent. In a fat subject it may enlarge the image to the extent of one centimetre, not more.

Kuttner, Renvers, Remond, Kelling, all claim from investigations conducted upon the living and the cadaver that the adjacent intestine when distended with gas does transmit the light from the stomach. In none of these investigations were the methods used as thorough as those of Schwartz. Of the above authors, Kuttner alone has investigated the point thoroughly, making one hundred observations; and he admits that no confusion need arise from this condition under the observation of an experienced observer, as the part of the illumination figure due to the effect of the intestine can easily be distinguished by its relative dimness, from the rest of the figure. Also the intestine is, in the living, almost invariably coated with chyme and does not diffuse or transmit the light.

From these investigations it would appear that none of the factors which have been suggested as capable on theoretical grounds of falsifying the record, actually do so to any marked extent. The results affirm its value as a record of closely approximate accuracy.

Empirically the accuracy of the record has been investigated by comparison with the records obtained by other clinical methods of localization in the same cases. The investigations of Martius, Meltzing, Kuttner, show that the area of illumination corresponds to that obtained by percussion in the stomach distended by gas or water.

Martius found that the record of the lower limit of the stomach, as obtained by palpation of the lamp end of the diaphane in the stomach, corresponds with the record of the illumination.

Meltzing has investigated the subject by comparing the record of illumination with that obtained by localizing the end of the lamp by magnetic attraction. He attached an electro-magnet to the lamp, and localized its position on the lower border of the stomach by running a steel plate over the abdominal wall until it was held by the magnet within. The position of the magnet corresponded in all cases, within one to two centimetres to the lower border of the illumination record.

The investigations of the observers mentioned comprise the largest part of the work done upon the subject.

The accuracy of the method has been tested by investigation of patients which were later subjected to laparotomy. Martius found the record to correspond to the actual position of the stomach in two cases examined. Langerhans found the record only approximately correct in eight cases. The observations of both investigators are not, however, of much value in their bearing upon the subject, as in all the cases the position of the organs was abnormal and also altered by the opening of the abdomen. Langerhans specifies that he does not attach any importance to his results for these reasons.

The results of these control investigations leave us little ground to doubt the approximate accuracy of the records of gastrodiaphany. The investigations are few in number and distributed among few observers, but they are practically of one accord in regard to the point in question. Even the critical and adverse publications admit this approximate accuracy. And this assurance is sufficient for the establishment of one general conclusion. There can be no question of an inaccuracy which would account for such a discrepancy as actually exists between the two records.

The conclusion that the lower border of the normal stomach occupies a lower position in the living than that in which it is found, according to the records of the anatomists, in the cadaver, would then seem to be justified by the records of the gastrodiaphane.

As we have stated, this conclusion is supported by the evidence obtained by other clinical methods of examination, as percussion, palpation and sound palpation.

The records of clinical text-books based upon the evidence obtained by the application of these methods of examination to the living, place the lower border of the moderately distended normal stomach within an area two to three centimetres above the umbilicus.

Pacanowsky, in an investigation of the subject by the method of percussion, found the position with the stomach empty three to five centimetres above the navel. Penzolt in his investigation found the average position four centimetres above the navel. Dehio found the position, with moderate distention, from two to four centimetres above the navel, with fulness at the navel. Scherer found the position at the navel line in fourteen normal cases with the inflated stomach. Leube, by sound palpation, found the level of the empty stomach at four centimetres above the navel; and Schreiber found the level at the navel, with inflation.

In two only of these sets of investigations is the level placed as low as with the gastrodiaphane, but all place it much lower than in the cadaver records.

We can accept the records of gastrodiaphany, then, as evidence that the position of the lower border of the normal stomach is much lower in the living than it is placed in the records of inspection of the cadaver. As evidence of the actual localization of the position, however, we can accept this record as approximate only. The same evidence upon which we have established its approximate value excludes its value as an exact record. Thus Schwartz proved that the fat tissues of the visceral and abdominal walls may magnify the image to a slight extent, perhaps one centimetre. Meltzing, in his control investigations with the electromagnet, shows that the record of the magnet and that of the illumination correspond within one to two centimetres. Within these limitations the records may be taken as accurate. Taken thus, the results of the many investigations which have been made indicate that the lower border of the moderately distended normal stomach in the living frequently extends to the plane of the umbilicus. To this fact, of which the results of percussion and palpation have proven a true but hardly accepted witness, the testimony of gastrodiaphany must prove an assured witness.

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MEDICAL NOTES.

Sir Samuel Wilks Re-elected. — Sir Samuel Wilks, Bart., has been re-elected President of the Royal College of Physicians for the ensuing year by a practically unanimous vote of the College.

The Astley-Cooper Prize. — The Astley-Cooper Prize, of Guy's Hospital, London, of the value of $1,500, will be awarded at the beginning of 1901 for the best essay on the subject of "The Physiology of the Pancreas."

The Western Ophthalmologic and Otolaryngologic Association. — The third annual meeting of the Western Ophthalmologic and Otolaryngologic (*sic*) Association was held in Chicago, April 7 and 8, 1898. New Orleans was unanimously selected for the next meeting, which will take place just before the Mardi Gras of 1899, thus allowing the members to conclude their scientific session with the gayeties of the carnival season.

Plague Declines in Bombay, and Increases in Punjab. — The epidemic of plague which in a recrudescent form has prevailed in Bombay for six months is rapidly declining. An increase is reported in several districts in the Punjab.

"Mathews's Quarterly Journal of Rectal and Gastro-Intestinal Diseases." — This able periodical is to be henceforth known as the *Louisville Journal of Surgery and Medicine*, and will appear monthly. — *Philadelphia Medical Journal.*

Delegates to a Spanish Congress. — Major Jirard and Medical Director Tryon have been in attendance at the Congress of Hygiene, Madrid, as delegates from the medical departments of the army and navy of the United States. They are presumably on the way home.

Presidency of the General Medical Council. — Sir William Turner, who holds the chair of anatomy at Edinburgh University, has been unanimously elected to the presidency of the General Medical Council of Great Britian, made vacant by the death of Sir Richard Quain.

A Convent Hospital. — The commander-in-chief of the Gulf Squadron, Captain Sampson, has accepted the offer made by the Mother Superior of the Convent of Mary Immaculate, Key West, to place the convent and two school buildings at his disposal for a hospital, and tendering the services of the sisters as nurses. in the event of hostilities in Cuba. — *Hartford Daily Courant.*

Dr. Northrup Lectures in Philadelphia. — Dr. Wm. P. Northrup, Professor of Pediatrics in Bellevue Hospital Medical College, gave an address on April 12th before the Philadelphia Pediatric Society, his subject being "The Portal Entry of Tuberculosis in Childhood." The meeting was largely attended and after it a reception was tendered Dr. Northrup.

Serum Therapy in Excelsis! — Dr. Evelyn, of San Francisco (*Quarterly Journal of Inebriety; Kansas Medical Journal*, April 9, 1898), professes to cure inebriety by "equisine," which he obtains from the blood of a horse that has been injected with alcohol. The equisine is sterilized, mixed with chloral, and frozen, and a paper saturated "in the fluids" is baked. The patient's skin is scarified, and one of these paper "plaques," moistened with boiled water, is applied once a week for eight or nine weeks. It "never fails if no sedatives or narcotics are used." San Francisco can now add another laurel to its "oxytuberculin" wreath! — *New York Medical Journal.*

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, April 27, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 32, scarlet fever 26, measles 61, typhoid fever 8.

WARREN TRIENNIAL PRIZE. — This prize has been awarded this year to Dr. Howard Ames Lothrop, of Boston, Mass., for an essay on "The Anatomy and Surgery of the Frontal Sinus and Anterior Ethmoidal Cells."

CENSORS' EXAMINATION. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on May 12, 1898, at 2 P. M. Candidates should make personal application to the Secretary, and present their medical diploma or its equivalent at least three days before the examination. For further particulars, apply from 2 to 3 P. M. to John Dane, M.D., Secretary, 29 Marlborough Street, Boston.

THE BROOKLINE PUBLIC BATH. — The report of the Committee on Care and Management of the Brookline Public Bath for the thirteen months from January 1, 1897, to February 1, 1898, states that 47,793 baths were taken, of which 33,332 were baths in the natatorium, and 6,981 were rain or tub baths; 7,570 baths were taken by the pupils in the public schools. The actual cost of the maintenance of the bath for twelve months was $3,310.16, which includes various repairs and improvements. During twelve months, 14,895,500 gallons of water were used. During the first year of its existence this excellent and well-equipped bathing establishment may be said to have amply proved its value to the town.

THE SHARON SANITARIUM. — The report of the seventh year of the Sharon Sanitarium for Pulmonary Diseases shows that twelve patients were admitted during the year, eight being cases of incipient phthisis, all of which showed marked improvement during their stay. Of the eight cases remaining over from the preceding year, four were discharged as "arrested" cases, two as much improved, and two are still at the sanitarium, both improved. The results show according to the report that "incipient consumption can be arrested by such methods in a large percentage of cases, even in the vicinity of Boston. The earnest appeal is made for funds to enlarge the work, an official building, a new dormitory, and suitable rooms for the treatment of patients and for bacteriological work being greatly needed.

NEW YORK.

LECTURES ON CLIMATOLOGY. — The Faculty of the New York Post-Graduate Medical School and Hospital announce a course of six illustrated lectures on Climatology for practitioners of medicine, by Dr. S. E. Solly, the distinguished authority of Colorado Springs, to be given during the fortnight commencing April 25th.

NEW YORK NEUROLOGICAL SOCIETY. — At the meeting of April 15th, the following members were elected to serve the society as officers for the ensuing year: President, Dr. Frederick Peterson; First Vice-President, Dr. Joseph Collins; Second Vice-President, Dr. J. A. Booth; Recording Secretary, Dr. Pearce Bailey; Corresponding Secretary, Dr. L. Stieglitz; Treasurer, Dr. G. M. Hammond; Councillors, Drs. B. Sachs, M. A. Starr, George Jacoby, C. L. Dana and M. P. Jacobi.

THE CARTWRIGHT LECTURES OF THE COLLEGE OF PHYSICIANS AND SURGEONS. — These lectures will be given in the hall of the New York Academy of Medicine on Tuesdays, April 26th and May 3d and 10th, at 8.15 P. M., by W. W. Keen, M.D., professor of the principles of surgery and of clinical surgery in the Jefferson Medical College, Philadelphia. The subject will be "The Surgery of the Stomach," and the lectures will deal with it as follows: I. Gastrotomy and Gastrostomy; II. Gastro-Enterostomy, Pylorectomy, Pyloroplasty, Gastroplication and Gastroplasty and Gastrogastrostomy for Hour-glass Stomach; III. Tumors of the Stomach, Ulcers of the Stomach and Gastrectomy.

A DECISION OF INTEREST TO EX-CRIMINALS WHO MAY WISH TO PRACTISE MEDICINE. — The Supreme Court of the United States has affirmed the constitutionality of the act of the New York Legislature of 1895, prohibiting persons who have been convicted of and punished for a crime, from practising medicine in that State. The question arose in the case of Walker *vs.* the State of New York. Dr. Walker had served a sentence of ten years in the State Penitentiary for an offence committed in 1878, and at the time the law in question was enacted was practising his profession. The opinion in the case was delivered by Justice Brewer, and Justice Harlan dissented from the Court, holding that the law in effect added to the punishment already imposed and carried out and was *ex post facto*.

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Miscellany.

DENVER MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE New England Railroad Committee of Arrangements would announce that the rate to Denver from all stations is one fare *plus* two dollars for a round trip. The tickets will be good for one month, with stop-over privileges. This will enable a large number of physicians and their families to make a delightful excursion.

The meeting promises to be socially and scientifically a most successful one, and a great opportunity will be given to see the Rocky mountains and some of the great cities of the West.

The committee are anxious to arrange for a special excursion train, and desire to consult the wishes of those who expect to go. Two routes have been mentioned: one by Niagara Falls, Detroit, St. Louis, Kansas City, etc., returning via Omaha, Chicago or any other route; the other route, via New York City, Washington, Chicago and some Western line. The time will be from two to three weeks, depending on the excursions around Denver.

We would request all who wish to go to write to Dr. R. E. Campbell, Secretary, Bellows Falls, Vt., stating the number of persons and friends who may accompany them, and the route they would prefer from Boston, Springfield, Albany or New York. Also write him for information, with any suggestions. Those not members or delegates are cordially invited to make this trip.

We understand that a great many New England physicians intend to avail themselves of this opportunity of taking a vacation and visiting the great West, in addition to the professional advantages which are inseparable from such a meeting as that of the American Medical Association.

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NIGHT DUTY FOR ADOLESCENTS.

"It would be difficult to exaggerate the services rendered to the public by the admirable organization which provides for the prompt services of messengers at all hours of the day and night. Nevertheless, one cannot but commiserate the fate of the lads who are called upon to pass the night on this fatiguing duty, especially when, as is often the case, they are of microscopic dimensions, and, therefore, presumably of very tender age. It cannot be doubted that the employment on night duty of undeveloped and still growing boys must be fraught with great danger to their future careers from a physical point of view, and we would suggest to the managers of these institutions the propriety of restricting night duty to youths not less than sixteen years of age. Otherwise, it may be necessary to agitate for an amendment of the existing laws on the employment of labor, in order to protect these willing little workers against themselves." — *Medical Press and Circular.*

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SOUTH AFRICAN DENTISTS.

A recent number of the *Dentist* contains an amusing account of South African dentists, furnished by "a Birmingham gentleman connected with dentistry," who has practised his profession in various parts of the Dark Continent. The South African dentist, we learn, has no drawing-room practice, and the cost of appliances is very high. It is cheaper to import them, but the cost of getting them "up country" is great. Yet it is "up country" that the dentist finds not only profit but amusement. The gentleman referred to and his partner made close on £200 in three weeks — not a bad haul (to use his own expression), considering that their work lay chiefly among a class made up largely of a race noted for the fine quality and condition of their dental apparatus. In such practices as these the dentist covers a very large area. Owing to the distance, the appointments have to be made two or three months ahead. Thus, if a native goes up with a racking toothache (say) in December, he may, if he is lucky, have an appointment for some time in March. So victims to toothache have to exercise more patience there than civilized man exhibits under the same trying circumstances. The dentist gets an accumulation of practically three months, and makes money and disperses teeth at a rapid rate. He is held in great regard, and, unlike his brethren in Europe, he is looked upon as a kind man. The natives think that to have a tooth drawn in the approved style is almost a pleasure. They have been used to less refined methods. — *British Medical Journal.*

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TUBERCULOSIS IN FISHES.

"The frequency of tuberculosis in cattle, especially milch cows, the extreme susceptibility of rabbits and guinea-pigs among rodents to artificial inoculation with cultures of the bacilli, and the occurrence of the disease both spontaneously and by accidental infection among fowls, have all been well known for many years, but that fishes were susceptible does not seem to have occurred to any one.

"M. Dubar, M. Bataillon and M. Terre, however, reported to the Académie des Sciences an instance of this which is not only probably unique, but presents several points of great scientific interest. The sputa and dejecta of a woman in an advanced stage of pulmonary and intestinal tuberculosis having been thrown into a fishpond many of the carp were observed to swell and die, and on examination their livers and spleens were found to be filled with tubercle bacilli. Others, experimentally fed with tuberculous matter from human subjects, rabbits and fowls, died with the same appearances in two to three weeks and the bacilli of the diseased fish were equally infective to others which devoured them. But when ingested by, or inoculated into, rabbits and fowls the results were negative, the explanation being obviously that they had been so attenuated by cultivation in the colder blood of the fish as to have lost their virulence to warm-blooded animals.

"Fish must therefore be more susceptible than even rodents, though the conditions under which they live offer few opportunities for infection, those of the carp in a confined pond being, in fact, artificial. Under any circumstances, however, the danger of the communication of tuberculosis from the use of such fish as food must be infinitesimally small should this attenuation of the virulence of the bacilli be a constant phenomenon." — *Lancet.*

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ETHER DRINKING.

"Ether drinking, which was so prevalent in certain parts of Ireland a few years ago, was attributed by some to the success of Father Mathew's crusade against alcohol. The propounders of this theory appeared to hold with Byron that 'man being reasonable must get drunk,' and that if he could not fulfil his hypothetical law of his being by means of the stimulants in common use, he was pretty sure to find some other agent for the purpose. According to Dr. Sohn, a medical official of East Prussia, men, women, and children in that province indulge so freely in ether drinking that the roads and markets reek with the mawkish fumes of the drug, just as the railway carriages on the lines of some market towns in the north of Ireland used to do on fair days. The schoolmaster's teaching is powerless against the pernicious habit; and it may be gathered, though the fact is not expressly stated, that the pastor's homilies are equally ineffective. Lithuanian peasants, says Dr. Sohn, are the chief victims, and the favorite tipple, known as 'Schwefeläther,' and consisting of ether and spirits of wine, can be bought without the least difficulty in grocers' shops. Dr. Sohn attributes the spread of the practice to the imposition in 1887 of a duty on corn brandy, which costs about eightpence a quart, whereas ether, being untaxed, can be purchased for sixpence. The local authorities have prohibited the sale of the noxious stuff, save by apothecaries, and under medical authority; but it is anticipated that strong measures will have to be taken by the government to stamp out the evil." — *British Medical Journal.*

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PROGRESS IN ADOPTION OF UNIFORM SYSTEMS OF CLASSIFICATION OF DISEASES AND CAUSES OF DEATH.

The following extracts from a recent editorial of the Registrar of Vital Statistics, of Michigan, show that he is alive to the importance of securing uniformity in methods of classification throughout America. It is gratifying to note that several States and provinces have already fallen into line in this direction; and it is only a question of time when all States having registration will also take progressive action in the matter:

> It goes without saying that real advancement in the comparative statistical study of causes of death cannot be made until registrars generally are agreed on the meaning and inclusion of the terms employed. Only by the adoption of a uniform system of classification can the identity of the terms representing causes of death be assured. No perfect classification has yet been proposed, nor can such hardly be expected in the nature of things, as medical science is constantly progressive, and a system fully up to date on adoption will necessarily be behind the most advanced line of medical knowledge by the time that it has been put into practical operation and returns have been compiled thereunder. Furthermore, any system of classification must be subject to revision from time to time, and therefore no insuperable objection should obtain against the adoption of a fairly satisfactory system on the ground of a few defects, since in the course of a few years, by concerted action on the part of the registrars employing it, it may be so modified as to eliminate all serious objections. The best criticism of a system can only come from its practical use, and the great advantage of uniformity so far outweighs any of the minor objections which might be raised against the Bertillon system, that we have seen no reason to regret for an instant the formal adoption by this Department of that classification for the compilation of the mortality statistics of Michigan.
>
> The progress of the classification elsewhere is very gratifying. It is now in use in the following important registration offices on this continent.
>
> Canada: Province of Ontario, Province of Quebec.
> United States: State of Michigan, State of Vermont, City of Buffalo, City of Milwaukee.
> Mexico (Superior Board of Health).
>
> The above list does not profess to be complete, but it is especially noteworthy that with the exception of Quebec, Mexico and the city of Buffalo, the Bertillon classification has been adopted during the present year. No other classification has at the present time as extensive and uniform prevalence in this country. Several States having registration now employ very antiquated systems, and have expressed their readiness to make a change to modern methods as soon as a fairly satisfactory classification should come to the front. It is believed that the prospect is excellent for a wide extension of the use of the Bertillon system in the near future.

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Correspondence.

[Special Correspondence.]

BERLIN LETTER.

Student Duelling and Psychology of Sport. — "Mensur" and Foot-Ball. — Phlorizin Diabetes and the Renal Rôle in Glycosuria.—The Builder of the First Pyramid a Physician.

A recent bit of university news from Tübingen in Würtemburg is, that during a *mensur* (a student's duel) there, one of the duellists-for-fun was struck so severely just above the orbit with the duelling *schläger* — we can scarcely translate it *foil* — that the eye was forced from its socket. This is the second serious accident during the present semester. In the other case, at one of the smaller universities in the southern part of Germany also, a surgical complication after a duelling wound caused a fatal issue. Erysipelas set in in a scalp wound, and the streptococci were carried by emissary veins to the interior of the skull and set up meningitis which terminated fatally.

The so-called sport would bear interesting comparison with our own foot-ball, where fatal accidents are not all too rare. The two would seem to suggest the principle in the psychology of sport, that, for that middle term between boyhood and manhood, interest in sport is almost inevitably bound up with an element of danger. I am sorry to say that university men's sisters here seem to be quite as proud of a brother's prowess in *mensur* as American girls are of their own and other people's brothers' success on the football field; which will have to go down as another psychological paradox, I suppose.

The hideous scars the sport leaves might, one would think, at least deter the sex from interest in it; but it does not. Very few German students are without them; very few German professors but carry traces of the sport of twenty-five to fifty years before. When Macaulay's New Zealander has grown tired of standing on the broken arches of London bridge, sketching the ruins of St. Paul's, and goes home to study, from the remains found in the ruins of the British Museum, the details of university life in our day, one cannot help but think that the scarred faces of German University students, the representatives of the greatest university life of our day, will prove a mystery to him. With a true commentator's spirit, however, he will have to have a theory, and it will, I suppose, read something like this:

"As university education became more generalized, there had to be some ready way of distinguishing university from non-university men; and so on entrance to the university, the students inflicted on the left side of their faces deep wounds which were not allowed to heal by primary intention (for it must be remembered that it was just at this time that Lister initiated the first great scientific advance in the treatment of wounds), but which were irritated so as to leave a scar. The number, depth and ugliness of these scars, then, showed the student's earnestness of purpose and his devotion to science and education."

The explanation will be no farther fetched than the lucubrations of many a scholiast of our day. The fact of the matter is, that, paradoxical as it may seem, the easiest way to tell a German University man is by looking for traces of scars on his head and cheek.

Here, of course, duelling is forbidden by the police and university authorities; but there is no serious effort made to stop the practice, and towards the beginning and end of each semester young university men strut proudly on the principal streets or drive around ostentatiously in open carriages with their heads and cheeks bebandaged and beplastered. Some of the medical men have taken a decided stand against the practice, but this avails little, as society generally and the kaiser are sympathetically inclined to tolerate — one would almost say, encourage — the sport. One hears a good deal of a spirit of manliness that it engenders, of personal courage, of the lesson of not minding a little knock or two or the flow of a little blood, of learning to keep one's temper under trying circumstances, that sounds wonderfully familiar to an American who has heard people talk who held a brief in the foot-ball case.

Of course, I would not think for a moment of comparing this brutal indoor sport, that has none of the claims of our great outdoor game in its favor, with foot-ball. (May I say that no German would either, because he considers foot-ball beneath notice, a matter of fisticuffs and brute strength.) I have thought that a bringing them together under a psychological aspect might make it clearer how a false university spirit may conceal the brutality of something that is at once evident to disinterested outsiders.

The discovery some time ago that phlorizin would produce artificial diabetes awakened the hope, openly expressed by many, that at last some explanation of the immediate etiology of the disease would be found. A discussion at the Verein für Innere Medicin at the April meeting would not seem to encourage this hope much. Experimental evidence seems to show that in phlorizin diabetes it is the kidney that is at fault; and so a reversal of opinion somewhat in the direction of the old opinions as to a kidney diabetes seems imminent.

A very interesting set of experiments were reported by Dr. Marchuso, which would seem to demonstrate not alone the kidney function in the matter, but also to indicate precisely what special part of the urinary secreting apparatus is at fault. Milk-sugar, it is well known, when injected into the circulation, is excreted as such, the system being unable seemingly to make any use of sugar in this form for any of the nutritional processes that are accomplished in the circulation. If Haidenhain's ligature of the renal arteries, however, be made, then the milk-sugar fails to appear in the urine; but if now phlorizin be given the animal, the milk-sugar at once begins to be excreted. As Haidenhain's expedient practically shuts off the glomeruli from any share in any action of the kidney that may take place, it would seem as though it was some influence of the phlorizin upon the cells of the urinary tubules that led to the excretion of the sugar. Experimentally it can be shown by the iron-chloride reaction that phlorizin is present in the cells of the urinary tubules some time after its ingestion, and its presence would seem to result in that lowering of their function which allows the passage of sugar. This, of course, is to revert to an old theory and makes the etymology of diabetes from *διαβαινω* "to go through," true once more.

The whole subject of diabetes is gaining very greatly in interest over here. More exact diagnostic methods have shown that slight forms of diabetes are much more common than was thought some time ago. Then, too, all the great clinicians are agreed that the disease is not only relatively but absolutely more frequent than it used to be, and the conjugal form of the disease in which it attacks both husband and wife has attracted a good deal of attention, as possibly pointing to an infectious element in the disease. There are even those who assert that the modern liking for sweets has so reduced generally the power of metabolism for the carbohydrates that the limits of alimentary glycosuria are lower than they were, and the tendencies to diabetes much more outspoken.

Some recent study of antique Egyptian papyri, especially the Ebers papyrus, No. 99.3, seems to show that the builder of the first pyramid was a physician. The hieroglyphic with which he constantly signs his name means servator, preserver, and was a usual designation of physicians at the time. As he uses the designation on all occasions to the exclusion of other titles, though he is known from other sources to have had very honorary titles, and it was not the usual custom of the Egyptians to let their titles remain unknown for lack of mention, he would seem to have been proud of his right to the title of physician, and is probably the first worthy member of the guild on record.

METEOROLOGICAL RECORD

For the week ending April 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..10	30.12	44	48	41	63	81	72	S.W.	E.	2	5	C.	O.	.02
M..11	30.18	48	54	43	85	85	85	E.	S.E.	6	5	O.	C.	.11
T ..12	30.06	48	55	40	86	60	73	N.	N.E.	8	10	O.	C.	
W..13	29.80	52	59	46	15	42	44	N.	N.	18	11	O.	O.	
T ..14	29.65	43	46	40	86	96	91	N.E.	E.	8	13	O.	R.	
F...15	29.56	40	42	38	96	100	98	N.E.	N.E.	15	25	R.	R.	1.02
S...16	29.61	46	54	38	84	63	74	N.	W.	10	7	O.	C.	.04
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, April 16, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	3,438,899	1267	456	8.96	16.10	1.33	2.80	1.47
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	507	175	11.59	13.49	.38	6.46	2.09
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	180	—	3.30	21.45	.55	1.65	.55
Baltimore . .	550,000	212	71	6.11	14.57	.47	2.62	.47
Boston . . .	517,732	229	57	2.64	20.24	.44	1.76	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	108	41	10.12	19.32	1.84	.92	—
Washington .	277,000	87	31	9.20	18.40	—	4.60	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	36	15	8.31	19.39	—	—	—
Nashville . .	87,754	28	7	3.57	13.28	3.57	—	—
Fall River . .	95,919	45	23	17.76	17.76	13.33	—	—
Lowell . . .	87,193	27	6	11.11	18.50	—	—	—
Cambridge . .	86,812	22	6	18.16	27.24	—	4.54	—
Lynn	65,220	16	4	6.25	6.25	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	18	9	11.11	—	16.66	—	—
Lawrence . .	55,510	10	5	30.00	10.00	—	20.00	—
Springfield . .	54,790	22	5	—	31.78	—	—	—
Holyoke . . .	42,364	10	6	20.00	10.00	10.00	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	2	0	50.00	—	—	—	—
Brockton . .	35,853	11	2	—	9.09	—	—	—
Malden . . .	32,894	6	0	—	—	—	—	—
Chelsea . . .	32,716	11	4	—	—	—	—	—
Haverhill . .	31,406	9	4	—	22.22	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	11	1	9.09	9.09	—	—	—
Fitchburg . .	28,392	9	3	22.22	—	—	—	—
Taunton . . .	27,812	10	1	—	20.00	—	—	—
Quincy . . .	22,562	5	0	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	6	4	33.33	—	16.66	—	—
Everett . . .	21,575	4	1	—	25.00	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	9	0	—	11.11	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,809; under five years of age 962; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 280, acute lung diseases 518, consumption 337, diphtheria and croup 98, diarrheal diseases 38, measles 38, whooping-cough 34, typhoid fever 28, cerebro-spinal meningitis 23, scarlet fever 18, erysipelas 3.

From whooping-cough New York 18, Philadelphia 4, Baltimore and Pittsburg 3 each, Worcester 2, Boston, Lowell, Cambridge and Fitchburg 1 each. From typhoid fever Philadelphia 8, Pittsburg 5, Washington 3, Fall River and Somerville 2 each, St. Louis, Lowell, Cambridge, Lynn, Lawrence, Salem, Newton and Fitchburg 1 each. From cerebro-spinal meningitis New York 12, Baltimore and Somerville 2 each, Philadelphia, Washington, Providence, New Bedford, Holyoke, Malden and

Waltham 1 each. From scarlet fever New York 16, Philadelphia and Lowell 1 each. From erysipelas New York 2, Worcester 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending April 9th, the death-rate was 20.2. Deaths reported 4,352; acute diseases of the respiratory organs (London) 372, measles 234, whooping-cough 125, diphtheria 57, fever 34, scarlet fever 33, diarrhea 31.

The death-rates ranged from 12.6 in Portsmouth to 27.7 in Liverpool; Bradford 21.9, Birmingham 22.9, Cardiff 15.3, Gateshead 16.1, Hull 20.9, Leeds 23 5, Leicester 21.0, London 19.6, Manchester 18.7, Newcastle-on-Tyne 22.9, Nottingham 19.9, Salford 25.6, Sheffield 23.0, Sunderland 19.9, Swansea 16.4, West Ham 14.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 16, 1898, TO ARPIL 22, 1898.

Colonel Charles R. Greenleaf, assistant surgeon-general, will transfer his duties pertaining to the Medical Supply Depot at San Francisco, Cal., to **Lieut.-Col. Johnson V. D. Middleton**, deputy surgeon-general, chief surgeon, Department of California, who will perform them in addition to his present duties, and will also perform the duties of chief surgeon, Department of the Columbia, during the remainder of the absence on leave of **Lieut.-Col. William D. Wolverton**, deputy surgeon-general.

Major John Van R. Hoff, surgeon, is relieved from duty at Vancouver Barracks, Wash., and from the temporary charge of the office of the chief surgeon, Department of the Columbia.

Colonel Greenleaf and **Major Hoff** will repair to this city and report in person to the surgeon-general of the Army for duty.

Major Egon A. Koerper, surgeon, is relieved from duty at Fort Crook, Neb., and will report by letter to the commanding officer, Department of the Missouri, for assignment to duty as chief surgeon of that department.

Captain Rudolph G. Ebert, assistant surgeon, is relieved from duty at Fort Missoula, Mon., and will proceed to Tampa, Fla., and report to the commanding officer, 17th Infantry, for duty.

Lieut.-Col. Albert Hartsuff, deputy surgeon-general, will proceed from Headquarters, Department of the Lakes, Chicago, Ill., to Chickamauga Park, Ga., for temporary duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING APRIL 16, 1898.

L. L. Van Wedekind, passed assistant surgeon, detached from the Naval Academy and ordered at once to the "Minneapolis."

L. L. Spratling, passed assistant surgeon, detached from the Naval Hospital, Philadelphia, Pa., and ordered at once to the "Columbia."

H. H. Haas, assistant surgeon, detached from the "Vermont" and ordered at once to the "Texas."

E. V. Armstrong, assistant surgeon, commissioned assistant surgeon from April 5th.

W. H. Bucher, assistant surgeon, commissioned assistant surgeon from April 5th.

D. Dicjerson, medical inspector, ordered to Marine Headquarters, Washington, D. C.

D. N. Bertolette, surgeon, detached from the Marine Headquarters, Washington, D. C., and ordered to the "Vermont."

W. H. Rush, surgeon, ordered to the "Dixie" at once.

J. M. Edgar, surgeon, detached from the "Vermont" and ordered to the "Prairie."

J. M. Pickrell, passed assistant surgeon, detached from the hospital, Washington, D. C., and ordered to the "Yosemite."

A. M. D. McCormick, passed assistant surgeon, detached from the Naval Academy and ordered to the "Yankee."

M. R. Pigott, passed assistant surgeon, ordered to the Naval Academy at once.

L. G. Henneberger, surgeon, ordered to the Bureau of Medicine and Surgery.

M. C. Drennan, medical inspector, detached from the "New York" and ordered home to wait orders.

C. U. Gravatt, medical inspector, detached from the "San Francisco" and ordered at once to the "New York," as fleet surgeon.

A. C. H. Russell, surgeon, detached from the Naval Museum of Hygiene and ordered to the "San Francisco" at once.

F. J. B. Cardeiro, surgeon, detached from the "Michigan" and ordered to the "New Orleans" at once.

W. H. Bucher, assistant surgeon, ordered to the "Vermont" temporarily.

E. V. Armstrong, assistant surgeon, ordered to the "Scorpion."

APPOINTMENT.

Dr. Frederic M. Briggs has been appointed professor of clinical surgery at the Tufts College Medical School.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, May 2d, at 8 o'clock.

Dr. J. B. Blake will read a paper entitled: "Traumatic Abdominal Hernia."

Dr. E. W. Taylor: "Tumors of the Frontal Lobes; with Special Reference to a Case simulating Neurasthenia until Shortly before Death."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, May 4, 1898, at 8.30 p. m.

Papers: "Some Considerations on the Treatment of Fecal Fistula and Artificial Anus," by Dr. C. B Porter.

"Cases of Intestinal Surgery," by Dr. M. H. Richardson.

"A Case of Congenital Deformity of the Thumbs, with Plaster Casts of the Hands," by Dr. Agnes C. Victor.

The presentation of specimens, apparatus, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

American Gastro-Enterological Association. – The first annual meeting will be held at "The Shoreham," Washington, D. C., Tuesday, May 3, 1898. The following papers will be presented.

"A Case of Atrophy of the Stomach, with Exhibition of Specimen," Dr. Julius Friedenwald, Baltimore, Md.

(*a*) "A Case of Acute Pancreatitis," (*b*) "Carcinoma of the Cardia," Dr. Morris Manges, New York.

"Nervous Dyspepsia, with Report of Cases," Dr. Frank H. Murdoch, Pittsburg, Pa.

RECENT DEATH.

David Webb Hodgkins, M.D., M.M.S.S., died in East Brookfield, April 19, 1898, aged sixty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the Pathological Society of Philadelphia, April 15, 1898. New Series, Vol. I, No. 6.

The Surgery of Tuberculosis of the Peritoneum. By Parker Syms, M.D., New York. Reprint. 1898.

Solution of the Proprietary-Medicine Question. By C. C. Fite, M.D., New York City. Reprint. 1898.

A Description of Hospital Buildings on the Pavilion Plan. By Albert Vander Veer, M.D., Albany, N. Y. Reprint. 1898.

On the Necessity of Repeated Examinations in the Correction of Errors of Refraction. By Cassius D. Westcott, M.D., Chicago. Reprint. 1898.

The Diseases of the Stomach. By William W. Van Valzah, A.M., M.D., Professor of General Medicine and Diseases of the Digestive System in the New York Polyclinic Medical School and Hospital. Philadelphia: W. B. Saunders. 1898.

An American Text-Book of Genito-Urinary Diseases, Syphilis, and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York, etc.; late Professor of Genito-Urinary and Venereal Diseases, New York Post-Graduate Medical School and Hospital; and W. A. Hardaway, A.M., M.D., Professor of Diseases of the Skin and Syphilis in the Missouri Medical College, St. Louis; Physician for Diseases of the Skin to the Martha Parsons Hospital for Children, etc. Illustrated with 300 engravings and 20 full-page colored plates. Philadelphia: W. B. Saunders. 1898.

Address.

SOME REMARKS ON HOSPITAL ABUSE.[1]

BY FREDERICK C. SHATTUCK, M.D., BOSTON.

HOSPITALS are so beneficent and the lives of many of us are so bound up in them and their work, that we may at times fail to realize that they have any possibilities of evil, either as regards the public in general or our own profession.

With your permission I shall venture to lay before you a few thoughts which come into my mind on this question; some general subject pertaining to medicine seeming to be more suitable for the address with which it is my great privilege, thanks to your unmerited kindness to me, to open our session.

Though it is over 400 years since this country was discovered, and more than 250 years since real settlements by highly endowed members of the Anglo-Saxon race were effected, the first hospital was founded not much more than a century ago. Until approximately fifty years ago the population was relatively homogeneous, and even the largest cities were small enough for the inhabitants to know each other and each other's affairs. There were few poor, and neighborly succor efficiently met illness and the distresses which so often follow in its train. Then began the great Irish immigration, followed by that from almost every overstocked European country; the older cities grew apace, and new cities sprang up as the tide moved westward. The conditions of life changed with enormous rapidity, and every large city developed a class whose earnings or whose lack of thrift do not permit provision against the almost inevitable day when the bread-winner, afflicted with acute or chronic disease, can win no bread, while the requirements of himself and his family can be but little if at all diminished.

We all know from personal experience how wonderfully helpful the members of this class are to each other in trouble of all kinds; also, that their helpfulness has clearly defined limits. The larger the class grows the more imperfectly are its members acquainted with one another and with one another's special needs; and much less are they, as individuals, known to the easier classes. Thus organized and public must supplement private and individual help in time of need, and it is natural that the hospital should take a high, if not the first place among the forms of help. We are all mortal; the vast majority of us are unsound somewhere; illness and disability come to many without any fault on their part. Health is an almost indispensable condition of support and usefulness. Its preservation, therefore, appeals directly alike to the head and heart of the community.

All the first hospitals in this country were founded by private individuals, public spirited, anxious to benefit their less fortunate fellow-mortals and fellow-citizens. But as cities grow large it is often found necessary for the tax-payers to aid and supplement private effort. We see, then, that the original cause for hospital foundation lay in charity — charity in its best and highest sense. Hospitals were designed to help those who could not help themselves; and it has been and is the pleasure as well as the duty of the medical profession to contribute its full share by rendering its services without direct pecuniary reward. But we should never forget that no physician can do conscientious work in a hospital without indirect reward, a portion of which is pretty sure to be pecuniary. The gain in knowledge, the stimulus to its acquirement, the development of the man and doctor alike which the honest performance of hospital work surely bring, almost as surely lead to the better performance of private work, and hence to the demand for it. As hospital physicians we are, I think, sometimes inclined to strike a false balance between the sacrifice of time and strength which hospital work demands, and the return, which is none the less real because it is indirect and cannot be estimated with mathematical accuracy. Personally, I believe that this natural return is ordinarily ample, and that any conscious and deliberate attempt on our part to enhance it can only be lowering to ourselves and unfair to the general body of the profession.

And just as there are indirect advantages flowing to physicians from hospitals, so also do they flow indirectly to the rich who endow and maintain them; in that the rich profit by the skill acquired by the staff, and by the advance in scientific knowledge secured by the minute study of collected cases of disease. Virtue may be its own, but it is not necessarily its only, reward.

I repeat that the primary purpose of hospitals is charitable; hence, their immediate benefits should be reserved for the poor, for those who are unable to pay for medical attendance. Poor and rich are, of course, relative terms and not easy of exact definition. A person may be able to pay one fee, perhaps several fees; but totally unable to pay for prolonged attendance. Medical attendance, moreover, stands on quite a different footing from almost every other necessary of life. There are different grades of food and clothing, even of fuel and light, between which, within certain limits, one can choose without detriment to health but with advantage to the pocket. The first cuts of meat are no more nutritious than the lower grades; and style alone may be the larger element in the cost of clothing, to say nothing of the choice of material. But the poorer a person is, the more purely dependent he and his are on his own exertions, the more important is it for him to have the best medical care attainable. Here economy may be the wildest extravagance. This is an aspect of hospital abuse which cannot be lost sight of. There is no clearly discernible line of cleavage, and therefore abstract justice cannot be done in every case; as in most other branches of human activity substantial justice is the best we can hope, at present at least, to attain. Medical charity in hospitals and dispensaries should be freely extended to those who require it; denied to those who do not, and from ignorance or parsimony demand it. The community suffers if provision is insufficient or proper access is difficult. The community also suffers if no questions are asked, the independence and self-respect of the laity being undermined, and the medical profession failing to receive returns which justly belong to it. Alike as citizens and professional men, we should carefully scrutinize the claims of every new charitable medical institution, and refuse our aid and countenance unless satisfied that it is likely to meet a real need in the community.

The same care should be exercised with regard to abuse creeping into existing institutions. The matter lies really in the hands of our profession. If no physician would serve or aid in promoting a medical charity, so called, founded mainly on sentimental or selfish considerations, such would soon cease to exist — and the millennium would be at hand. There is too much reason to believe that hospitals and dispensaries are sometimes started purely in the selfish interest of members of our profession.

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[1] President's Address delivered before the Association of American Physicians at its Annual Meeting in Washington, May, 1898.

The second great function of hospitals — second in point of time evolution, though not, I believe, in point of importance — is the educational function, the advancement and dissemination of knowledge. On this function I need not dilate to this audience. It is, of course, more obvious to us than the laity. But their attention is being more and more called to it. They are quick to see the truth and to recognize the powerful stimulus to the staff to do first-class work afforded by the critical eyes of bright students. The clinical teacher must study his cases carefully: compulsion acts more imperatively on him than on the hospital physician who is not also a clinical teacher. The necessities of teaching and the demand for much material from which to select has been used as an excuse for the abuse of hospitals and dispensaries, and to a certain extent such excuse may be valid. Students should become familiar with as wide a range of disease as possible. The didactic lecture in medicine and surgery is slowly but surely falling into the background, teaching becoming more and more clinical. Patients may be made to pay in their persons if not from their pockets. The student and clinical teacher demand material, the practitioner wants patients. When the student becomes a practitioner his point of view changes. But he should not forget that he, when a student, probably gained in remunerative knowledge more than the equivalent of a few cases which, after he has gone into practice, seek advice at a hospital instead of paying his fees. Our direct losses loom up larger than our indirect gains. I do not mean to imply that a teaching hospital is free from responsibility in regard to this matter. I merely want to indicate that there are two sides to this question, at the same time stating my conviction that very little injustice need be done if a due sense of responsibility is felt and influences action.

Complaint in the medical press of hospital out-patient departments and dispensaries seems to be endemic in England, and there has been of late an epidemic in this country; legislation on the subject has even been seriously considered. It is claimed that the doors of these institutions are thrown open so widely as to entail great hardship on many worthy members of the profession. That there is some ground for these complaints I fear there can be no question. For some eight years I did out-patient work in the Massachusetts General Hospital, and have no reason to believe that the conditions are materially different now from what they were at that time. The number of cases of deliberate intention to avoid payment for advice was, as I remember, small. Some residents of the city, apparently able to pay, came, seemingly without wrong intent, to get an opinion and see how far it coincided with that of their doctors. More came thus from the country, under the impression that the city must contain more wisdom, not knowing whom there to consult, and not having told their regular advisers that they wanted further advice. The reputation of the hospital, and sometimes the idea derived from the name "Massachusetts General," that it is a State institution, to the benefits of which as tax-payers they had a right, determined their coming. Not infrequently patients would come, more commonly from out of town, either with their physician or with a letter from him, asking for a consultation and perhaps a detailed opinion in writing — no light demand considering the number of patients requiring attention.

For some years now at the Massachusetts General Hospital a paid medical officer questions applicants to the Out-patient Department as to their circumstances, and refuses entrance to those who do not seem to him proper cases for free advice. It is also his duty to exclude such diseases as measles, scarlet fever and the like from the waiting-rooms in order that their spread may be limited. This is a plan which does not involve a hospital in great expense — five hundred dollars per annum at the Massachusetts General Hospital, with an average of about one hundred new patients a day — as the services do not require more than a couple of hours a day, seems to me as efficient as any plan which has been suggested, and one which it is not unreasonable to expect all similar institutions to carry out.

There is another ground for complaint against hospitals about which less has been said. I refer to the growing practice of attaching pay-wards to hospitals, which, let me repeat once more, are founded and exist for charitable and educational purposes. Patients who pay from twenty to fifty dollars per week for private rooms ordinarily serve neither of the above purposes, and provision for them here seems to me unfair and improper, unless to a very limited extent. This is not a legitimate mode of providing revenue for the care of the sick poor. Our well-to-do citizens are amply able, and I am convinced more than willing, to provide for such care through gifts, bequests and taxes. The chances are strong that a hospital which cannot be maintained without resort to this practice is in whole or in part unnecessary to the community in general, and should, consequently, in whole or in part, close its doors until the community in which it is situated grows up to it. One great and well-known hospital derived fifty-five thousand dollars from this source last year. I am told that other great hospitals are making large investments in this field. I am perfectly well aware of the fact that strangers in the city fall ill in hotels, and that residents are for one reason or another sometimes so situated at their abodes that proper care is difficult or impossible to secure. I know what a boon it sometimes is to patient and physician alike to have access to a well-organized hospital. But this need not and should not be a charitable hospital. This class of cases is sufficiently large in every considerable city to maintain one or more hospitals or infirmaries; private in that they are designed for private patients, public in that any physician can send his patient thither and assume personal care of him, making such professional charges as his wisdom and conscience dictate. This is free trade in medicine. In a large hospital it is, from a administrative point of view, impossible to allow physicians other than members of the staff to care for patients within its walls. The small private hospital or infirmary can be made to yield a good return on the investment and no injustice is done to anybody. And it seems to me that injustice to somebody is inevitable when well-to-do patients are admitted to hospitals designed for the sick poor. If the staff is allowed to receive fees for attendance on such patients, its members are given an unfair advantage over those members of the profession without hospital appointments, and the hospital becomes a sort of medical trust. The indirect benefits of hospital service are quite sufficient. If the members of the staff are not allowed to take fees, the well-to-do patient is injured by receiving gratis services for which he is able to pay and should pay; the time and skill of the attendant is diverted from the sick poor or from such use as he might wish to make of them; and the sum of professional earnings, now none too large, is unfairly diminished. Commercialism tends to degrade the medical profession, and if well-to-do patients are to be cared for in our great hospitals, it seems to me that the evils of free are less than those of paid professional service.

The Massachusetts General Hospital has eight private rooms of the class I now allude to. Years ago the staff itself established the rule that no fees should be received for attendance on inmates of the hospital, and a printed notice to that effect is placed in each of the private rooms.

The hospital physician can keep his private hospital if he will; or he can, just like any other physician in the town, send his patients to an infirmary. The charitable and educational institution should not step in to save its staff the trouble of housekeeping, and of providing and superintending nursing for patients in easy circumstances. It should not demand of its staff unrequitted service save for the sick poor. It should not place any unnecessary obstacles in the way of full and free competition between members of our profession. To the exaction of the payment of a few dollars a week from patients who can afford it, who are treated in the ordinary wards, and who can be used for teaching if suitable cases, I can see no valid objection. The self-respect of the patient is maintained by rendering some return for much-needed care which his circumstances preclude his securing at home, and no just ground for complaint is afforded practising physicians unattached to hospitals.

In this whole question we have a responsibility which we cannot escape. The more fortunate a man is the more mindful should he be of the rights of others, especially of his professional brethren. The staff of the hospital or dispensary should co-operate fully with the trustees, giving them the full benefit of their more intimate knowledge of all professional matters, and always remember the broad therapeutic principle, "Ne quid noceat."

Herbert Spencer and Vegetarianism. — It having been reported, according to *Food and Sanitation*, that Herbert Spencer was a vegetarian, he was one day questioned by an ardent disciple of that cult as to whether he really was of that "hygienic persuasion." Mr. Spencer replied, "Yes; I was a vegetarian for a year." Delighted, his interlocutor now demanded if he had maintained the vegetable *régime* — and surmised that in any case he had found immense benefit from it, particularly mentally. "At the end of that year," went on Mr. Spencer in his dry voice, "I read over all that I had written during the period, and forthwith consigned it *in toto* to the fire."

Original Articles.

CASE OF REMOVAL OF THE ENTIRE STOMACH FOR CARCINOMA; SUCCESSFUL ESOPHAGO-DUODENOSTOMY; RECOVERY.

BY CHARLES BROOKS BRIGHAM, M.D. (HARV.), SAN FRANCISCO.

HISTORY.

Lora Maginni, widow and housewife, sixty-six years of age, had complained of pain in her stomach for the last year. She was able, however, to digest her food until Christmas time, when she vomited any solid food that she took. Not caring for bread and meat, she confined herself to liquids and to thickened gruels, and so was able to keep her usual weight of 135 pounds. She did not worry about her forced abstinence from solid food, because she was unable to chew properly, having but six teeth in the lower, with no corresponding ones in the upper, jaw.

She is a remarkably healthy woman in other respects, having a strong heart and lungs, a clear complexion with a good deal of color in her cheeks. She is a woman of simple tastes; born in the country, in the north of Italy; active, and a woman of good common-sense. It is a difficult thing to keep her in bed in any ordinary illness, and she does not complain of pain unless it is severe. I saw her first in February, 1898. She came to me for advice on account of the pain which she felt in her stomach. There was a hardness in the pyloric region which was painful on pressure. All solid food was vomited soon after it was taken. My diagnosis was cancer of the pylorus. At a subsequent visit a few weeks later an operation for the removal of the growth was suggested and agreed upon, and the patient entered St. Luke's Hospital in San Francisco.

OPERATION.

On the 24th of February, 1898, Dr. Samuel G. Boyd assisting,[1] strict antisepsis being observed, the patient was etherized. I made an incision three inches in length half-way between the ensiform process and the umbilicus. The omentum was adherent to the parietal peritoneum the entire length of the incision. Once the peritoneum was opened, a hard mass was felt at the pyloric extremity of the stomach, extending over half its surface and involving its walls. The stomach was freely movable. There were no nodules in the omentum; but there were several of varying size, from two inches in diameter and less, upon, and attached to, the surface of the stomach. The tumor could be felt extending into the interior of the stomach, just beyond the middle line. The abdominal fat was over an inch in thickness, and it was necessary to enlarge the incision to seven inches in length, so that it extended from the ensiform process to a point an inch below the umbilicus. Hot gauzes frequently renewed completely surrounded the wound, covering everything but the part operated upon. I then began to tie off the omentum from the greater curvature, using catgut for ligatures; the length tied off at any one time did not exceed half an inch; the omentum was divided between the ligatures. After three or four inches of the greater omentum were tied off, work was begun on the lesser omentum; and so, by working alternately on the two omenta, rotating the stomach as was necessary, the tying off was accomplished. The most difficult part of the work was on the lesser curvature, it being in the deepest part of the wound. When both curvatures were free from omenta, the duodenum was clamped, and a ligature of silk being placed around the duodenum half an inch above the clamp, the tissue was divided by scissors between the two; the divided extremity was carefully washed in salt solution and wrapped in iodoform gauze. The stomach was then free for any desired manipulation.

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[1] Among those present at this operation were Dr. J. V. D. Middleton, Deputy Surgeon-General U. S. Army; Dr. Charles S. Mann; Dr. C. C. H. Carlson; Drs. Robert Porter (who gave the anesthetic), and Samuel Huntington of the staff of St. Luke's Hospital.

As the tumor occupied already more than half the organ, with a hardness extending some two inches beyond along the greater curvature, I decided to remove the entire stomach above the cardiac orifice. The gastro-splenic omentum was tied off, the stomach held with moderate tension, and a clamp was placed just above its cardiac orifice. An intestinal clamp was then placed on the esophagus a little over an inch higher up, and the tissue was divided between the two, nearest the cardiac orifice. The esophageal extremity was then washed and wrapped in iodoform gauze; the esophageal clamp followed each movement of the diaphragm. I then brought up the duodenum, and found it would touch the esophagus without undue tension. It was somewhat a question of time, as the patient's pulse had become weakened by the length of the operation; so that I decided to use the Murphy button for approximation of the parts instead of suturing them. One-half of a No. 3 Murphy button (fifteen-sixteenths of an inch in diameter) was then inserted in the duodenum and fixed in position. Finding that there was not room enough in the divided end of the esophagus to apply the button, I seized the free extremity with a T-forceps and applied the clamp higher up, so that it was placed at the nearest possible point to the diaphragm. I then had an inch and a quarter of free esophagus of equal diameter throughout, measuring an inch and an eighth across — the mucous coat was entirely distinct from the muscular and glided freely upon it. A fine-silk drawing suture was placed an eighth of an inch from the free extremity, and the other half of the Murphy button was applied. New iodoform gauze was packed over the bottom of the wound, and the halves of the button were pressed together. When the clamps which had been but a short time on the duodenum and esophagus were removed, the button was drawn up about half an inch by the muscular contraction of the esophagus. As the parts on either side of the button became distended, they were apparently of equal diameter; the tension on the parts was sufficient to keep them suspended over the iodoform gauze; no Lembert sutures were used, as the parts were in close apposition. The iodoform gauze was then removed from the bottom of the wound, the omenta arranged somewhat, and the peritoneal cavity closed with a continuous catgut suture; silkworm-gut closed the abdominal incision.

The operation occupied two hours and a quarter. There was practically no loss of blood in removing the stomach; two ounces representing the entire amount, and that came from the abdominal incision and the peritoneal adhesions. The anesthesia was effected by chloroform at first, until unconsciousness was reached, and then ether was administered throughout the operation; eleven ounces of the latter were used. The patient had an exceedingly fat abdomen, so that the incision through its walls was necessarily a long one.

The photograph of the stomach was taken shortly after the operation. The stomach was empty and in the same condition as when it was removed from the abdomen. The measurements were taken from a tracing as it lay on a sheet of paper, and are as follows: lesser curvature five and three-fourths inches; greater curvature (not including the outline of the growth which measures two inches more) ten and a half inches; greatest width between the curvatures three inches; across the pyloric orifice, three-quarters of an inch; across the cardiac orifice, one inch; weight, six ounces and seven drachms Troy. The pins are attached to exactly opposite points of each orifice; the sagging noticed being from the lax tissue and not from any removal of substance. The growth was chiefly on the anterior surface of the stomach; it extended internally beyond the middle line, with a hardness along two-thirds of the greater curvature. It was impossible to introduce anything larger than a sound through the pyloric orifice on account of the growth. The posterior view shows a puckering of the thin walls of the part of the stomach which is yet healthy; the mass of omentum near the cardiac orifice makes the latter appear wider than it really is. It shows also the outline of the growth as it extends along the inside of the stomach and greater curvature. At either end half an inch of tissue may be added which was enfolded in the Murphy button.[2]

TREATMENT.

February 24th. At noon, after the operation, pulse 116, temperature 98°, an enema of brandy and water was given, and three hours after an enema of eggs, peptonoids, milk and broth; these nutrient enemata were continued every four hours. The patient was very restless and thirsty. An eighth of a grain of morphine was given subcutaneously, and the mouth was frequently washed out with water. Towards evening she vomited about two ounces of bloody mucus. Evening pulse 110, temperature 100.8°. A quarter of a grain of morphine was given subcutaneously, and the limbs and chest were rubbed with alcohol. At midnight, pulse 108, temperature 100°. The longest sleep at any one time was not over an hour; but there were many short naps, which refreshed the patient.

February 25th. Pulse 96, temperature 99.6°. Excessive thirst, but no pain; no vomiting, but twice belched some gas. Thus far no water was allowed the patient, but the mouth was constantly moistened. Evening pulse 100, temperature 99.6°. Amount of urine passed since the operation 20 ounces. Hot water in three-drachm doses was given every hour, which soon relieved the intense thirst. Midnight pulse 98, temperature 99.6°. Considerable flatus passed.

February 26th. Pulse 100, temperature 99.7°. Claret and water in two-drachm doses, varied occasionally with the same amount of hot black coffee, or chicken broth, were given. Evening pulse 100, temperature 100°. The act of swallowing does not cause any inconvenience, but after two teaspoonsful are taken there is no desire for more. As to pain, it is indefinite both as to situation and amount; generally near the abdominal incision. Midnight pulse 96, temperature 99.8°.

February 27th. Pulse 92, temperature 100°. Up to this time only two-drachm doses of any liquid were given, but now the patient is able to take a little more than double the quantity at each time. Coffee, with milk and chicken broth with an egg beaten up in it. Each day the back and extremities are bathed in alcohol. Evening pulse 94, temperature 100°. The restlessness is still marked, and without the morphine at night there would be little sleep. Complains of burning in urinating; this was relieved by

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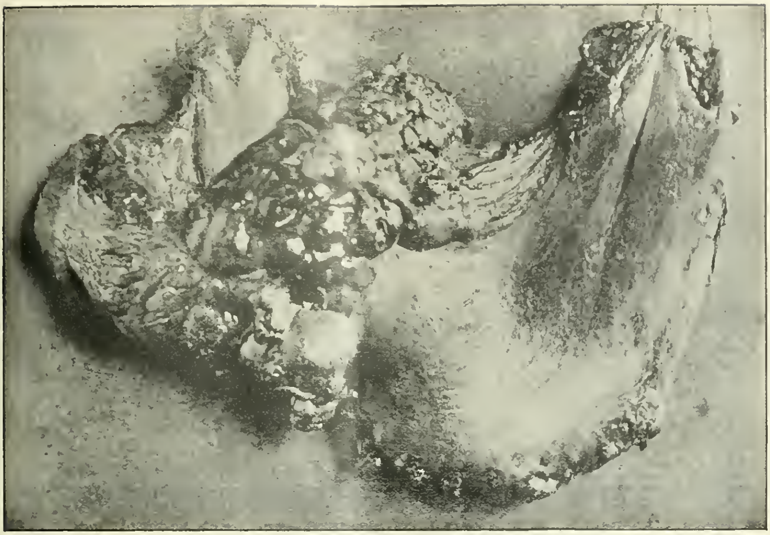
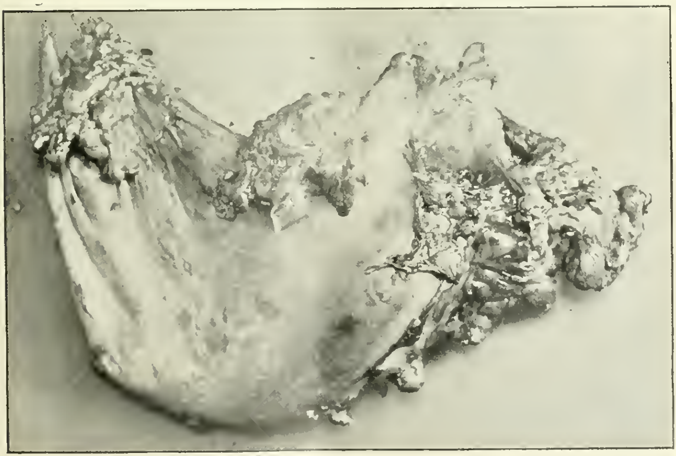
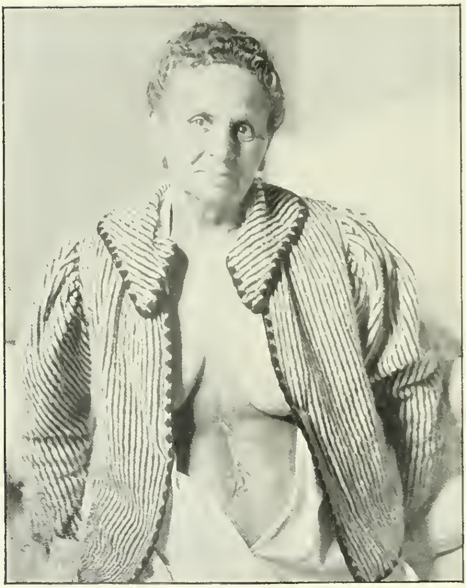
[2] I am indebted to Mr. P. S. Bruguière, of San Francisco, for the photographs, and also for the microscopical examination, which showed the growth to be adeno-carcinoma.



Stomach. — Anterior View.



Stomach. — Posterior View.



The Patient Seven Weeks after the Operation.

lithia water. The nutritive enemata given every four hours up to this day have been discontinued. The first free movement of the bowels occurred to-day by the aid of a simple enema; it was partly formed and without indigested food. Midnight pulse 94, temperature 100.2°.

February 28th. Pulse 92, temperature 100°. During the day the patient had a free, dark brown, well-formed movement of the bowels. Evening pulse 98, temperature 100.6°. There was some pain in the abdomen, which was relieved by rubbing. A fresh egg slightly boiled was relished by the patient, who said that "it tasted nice and sweet." Midnight pulse 99, temperature 99.6°.

March 1st. Pulse 94, temperature 99.4°. The patient takes six drachms of some liquid nourishment every hour night and day, missing it only when asleep. She complains of a sense of fulness at the seat of the Murphy button if she takes a teaspoonful too quickly after another, and often it needs some persuasion to make her take sufficient nourishment. Midnight pulse 100, temperature 100°.

March 2d. Pulse 96, temperature 99.4°. In the afternoon a well-formed movement. The patient complains of faintness and dizziness, probably due to the small amount of nourishment she receives, as it is impossible to make her take more than six drachms at any one time. Evening pulse 100, temperature 100.7°. The temperature has been taken always by the rectum. Midnight pulse 100, temperature 100.2°.

March 3d. Pulse 96, temperature 100.2°. A seidlitz powder was given in two doses, half an hour apart; and a partly-formed movement of the bowels resulted two hours later. Again the bowels moved in the afternoon. One or two eggs were taken daily, broth, gruels made with germea or barley, prune juice, and coffee with milk. Evening pulse 106, temperature 101°. Midnight same.

March 4th. Pulse 98, temperature 100.2°. In addition to claret and water, drachm doses of whiskey were given every three hours, and, in order to give more nourishment the nutritive enemata were given every four hours, day and night; these consisted of two eggs, an ounce of brandy and half an ounce of peptonoids or bovinine. Evening pulse 106, temperature 101°. Midnight pulse 108, temperature 100.6°.

March 5th. Tongue dry, with a brown coating. The restlessness has somewhat disappeared and the sleep is more quiet and refreshing. Pulse 102, temperature 100.6°. The dressing of the wound was changed; there was primary union throughout the incision except at the uppermost stitch, where there was what appeared to be a stitch abscess discharging a drachm of pus. The patient feeling remarkably well, sat up in bed and was photographed. The amount of liquid taken by the mouth in the last twenty-four hours was a little more than a pint; this did not include two eggs; there were also five nutritive enemata given. Urine voided, one pint. Evening pulse 104, temperature 101.2°. Midnight pulse 100, temperature 100°.

March 6th. Pulse 102, temperature 100.6°. During the day the patient had four semi-solid movements. All the sutures were removed from the abdominal incision. The tongue is moist and clear. Since the operation there has not been the least fetor of the breath, nor has there been any vomiting except the mucus vomited soon after the operation. To-day the patient took a drachm of sweet oil with a view of facilitating the downward passage of the Murphy button. This was regurgitated soon after, the patient declaring that it was not Italian oil. As there was a burning sensation in the lower abdomen soon after the enemata were given, the brandy was omitted. Evening pulse 110, temperature 100.2°. Midnight pulse 106, temperature 99.6°.

March 8th. Pulse 100, temperature 99.8°. There is to-day a distress after swallowing and a pain in the upper part of the abdomen. Evening pulse 104, temperature 99.6°. Midnight pulse 98, temperature 99.4°.

March 9th. Pulse 100, temperature 99.4°. There is still a burning pain in swallowing, and a disinclination to drink on that account. During the morning about two ounces of pure bile were vomited, the bile having a distinct smell of urine. Two hours later, after a sleep of three-quarters of an hour, the patient awoke, and found she could swallow easily. There was no longer an obstruction to the passage of food, and she said she did not know where the food went to, so easily did it pass along. Evidently the Murphy button had left the position which it had occupied for thirteen days. The amount of nourishment now given each time was three ounces and more. Evening pulse 100, temperature 99.8°. Midnight pulse 98, temperature 99.6°. The nutritive enemata were discontinued.

March 10th. Pulse 102, temperature 99.4°. The amount of liquid taken in the last twenty-four hours was 37 ounces; amount of urine voided, 27 ounces. The supposed stitch-hole abscess had been discharging but slightly; and as the opening was too minute to admit of anything larger than a probe, chloroform was given and the opening dilated. A shred of necrosed tissue was removed with the forceps, the wound washed out with a hot normal salt solution, and packed with iodoform gauze; it extended about two inches beneath the peritoneum, and was well walled off from the cavity of the abdomen. (The wound became smaller daily and ten days subsequently was closed.) Evening pulse 108, temperature 100°. Two semi-solid movements of the bowels in the afternoon. Midnight pulse 98, temperature 99.6°. Vin Mariani in half-ounce doses was given instead of whiskey.

March 11th. Pulse 104, temperature 99.8°. Vomited two ounces of flaxseed tea as soon as it was given, but after a short nap took two ounces of hot coffee with milk, and retained it. Evening pulse 100, temperature 99.6°. Midnight pulse 102, temperature 99°.

March 12th. Pulse 100, temperature 99.6°. Evening and midnight the same.

March 13th. For breakfast this morning the patient had some minced chicken, a cup of coffee, a soft boiled egg, half a slice of toast and two ounces of water. Pulse 108, temperature 99°. From this time food was given at regular intervals of three hours. The soups given were vegetable purées of green peas, asparagus or artichokes. The patient has never cared for bread in any form even before her illness. She wishes no salt either in gruels or soups. Evening pulse 106, temperature 100°.

March 14th. Pulse 100, temperature 100°. After two tablespoonsful of castor oil given in hot coffee, the patient had two soft movements rather grayish in color. There is still much restlessness. Evening pulse 100, temperature 100.4°.

March 15th. Pulse 108, temperature 99.7°. Two ounces and a half of castor oil were given this morning; two hours after, a formed bowel movement, followed by two liquid movements in the afternoon. The patient sat up in a chair for an hour and a half without fatigue. Evening pulse 100, temperature 99.8°. Midnight pulse 98, temperature 99°.

March 16th. Pulse 102, temperature 98.8°. The patient took twelve oysters at noon. These were the native Californian oysters, quite small, resembling those of Ostend. Sat up to-day two hours and a half. Evening pulse 104, temperature 100°.

March 17th. Pulse 106, temperature 99.4°. The patient's nourishment to-day consisted of: breakfast — cup of coffee with milk, a soft boiled egg, a third of a baked apple; noon — a cup of green-pea soup and a dozen oysters, an ounce of milk with somatose; afternoon — some orange jelly, one raw egg, half a cup of pea soup, a dozen oysters; evening — half a cup of asparagus soup; in the intervals she took four drachms of whiskey with water, and an ounce and a half of Vin Mariani. Had a natural movement from bowels. Evening pulse 102, temperature 100°. Midnight pulse 98, temperature 99.4°.

March 18th. Pulse 92, temperature 99.2°. The patient is up in a chair daily and walks a little in the room. In addition to two dozen oysters she took a part of a lamb chop and several spoonfuls of ice cream. In the afternoon her pulse was 76, temperature 99.8°. In the evening pulse 104, temperature 100°. Had a formed movement of the bowels. On account of the tendency of the pulse to lag, a twentieth-grain granule of strychnine was given every four hours during the day.

March 19th. Pulse 92, temperature 99.4°. Patient on the hospital piazza in a rolling chair for nearly two hours. In addition to her regular nourishment the patient enjoyed a squab. There were two formed movements of the bowels to-day.

March 20th. Pulse 98, temperature 99.4°. Thus far the patient has not vomited food; sometimes a teaspoonful of sweet oil would be regurgitated; and to-day when some bromo-caffeine was given for restlessness, a part of it came up — there was no sensation of sickness, however, and some nourishment taken almost immediately afterwards was retained. Somatose is added to milk whenever it is taken. The patient was on the piazza for three hours to-day, sleeping at times. Three formed movements of the bowels. Evening pulse 98, temperature 100.4°.

March 21st. Pulse 100, temperature 100.6°. An ounce and a half of castor oil taken at noon gave two free liquid movements in the afternoon. The respiration was rather labored at times, apparently due to nervousness. Evening pulse 96, temperature 101.4°. Seven ounces of mulled wine were given at bedtime. Slept at intervals. Midnight pulse 100, temperature 100.6°.

March 22d. Pulse 100, temperature 101.4°. Has still times when the breathing is difficult. Three hours out of doors. In the afternoon the patient vomited part of some minced chicken she had taken. Pulse 108, temperature 101.6°. Midnight pulse 98, temperature 100.4°.

March 23d. Pulse 102, temperature 100.6°. After a comfortable night's rest, the best perhaps since the operation, the patient walked from her room to the piazza, where she sat for two hours in the sun, and then walked back to the room; two hours again in the afternoon on the piazza. Evening pulse 110, temperature 102.4°. Midnight pulse 106, temperature 101.6°.

March 24th. Pulse 102, temperature 101.8°. A week ago the patient weighed 116 pounds; to-day she weighed 121 pounds, a gain of five pounds in one week. Evening pulse 108, temperature 101.8°. There is a slight hardness in a line with the middle of the incision extending an inch and a half on either side; there is no redness whatever of the skin, but deep pressure is somewhat painful. The gradually rising temperature suggested an abscess; the position in the line of the transverse colon suggested an impaction of fecal matter with the Murphy button; the free and natural movements of the bowels daily led me rather to regard the swelling as due to a collection of pus.

March 25th. Pulse 104, temperature 101.2°. A high enema of olive oil was given with no effect on the hard swelling. The patient has some difficulty in breathing, entirely due to the pressure of the swelling. The pulsations of the aorta are distinctly felt through it. Evening pulse 108, temperature 102°. I decided to cut down on the mass, and the patient being prepared and etherized, two inches of the primary incision were carefully opened. The union was strong. There were adhesions throughout the line of incision. While exploring at the depth of an inch with the left finger, pus was reached, and some six ounces evacuated; it was quite odorless; it was washed out with a hot solution. Four sutures were taken and the abscess sac was packed with iodoform gauze. Adjacent tissues were soft and in a healthy condition. No sign of the Murphy button. There were no shreds of tissue evacuated with the pus. After this the patient was fed with nutritive enemata in addition to the nourishment taken by the mouth. When she came out of the ether she vomited some six ounces of mucus. Midnight pulse 110, temperature 101.8°. Two doses of a quarter of a grain of morphine were given at four-hour intervals.

March 26th. Pulse 100, temperature 101°. Evening pulse 104, temperature 100.5°. Patient very restless and troubled with much flatus.

March 27th. Pulse 96, temperature 99°. Two loose bowel movements. The drainage was removed from the wound, which was thoroughly washed with salt solution and packed with fresh gauze. The discharge was moderate and odorless. Evening pulse 96, temperature 99°. No pain whatever.

March 28th. Patient out in the reclining position on the piazza most of the day. For the first time since the operation she said that she felt really hungry, and the way she ate a squab amply proved it. It is still a question with her, how to produce sleep without an opiate: sulfonal, trional, bromo-caffeine and bromide of potash all excite rather than soothe the restlessness. Morphine alone is sufficient, if given in quarter-grain doses. Of course, the peristaltic action of the bowels is affected by the morphine as well as by the removal of the stomach, and that may delay the passage of the Murphy button, which, by the way, produces no discomfort wherever it may be.

March 30th. Pulse 96, temperature 99.8°. The earthquake at midnight excited the patient somewhat.

March 31st. Pulse 90, temperature 99.4°. It is five weeks to-day since the operation. The patient weighed 116 pounds, losing what she had gained the previous week. Pulse 84, temperature 99°. The abscess sac is free from discharge, but is daily packed and washed out with hot normal salt solution, of which it now holds a drachm. The patient is taking more milk at times, and enjoys it.

April 4th. Pulse 78, temperature 99°. There is much restlessness at night and more natural sleep. The morphine, which had been gradually left off, is now omitted. The patient is on the piazza all day, walks alone, reads the papers and is very active and cheerful.

April 7th. Patient again weighed, with the gain of one pound.

April 10th. The following shows the amount of food taken by the patient to-day: at 6.30, a cup of coffee and a raw egg; at 10, two dozen oysters and a bowl of broth; at 1, half a broiled chicken with toast and stewed strawberries; at 5, half a broiled chicken, two slices of toast and a cup of tea. Pulse 84, temperature 99°.

April 11th. The abscess sac is completely closed. The patient's condition is excellent.

April 14th. Weight, 122 pounds, a gain of six pounds in the last week.

REMARKS.

The operation for removal of the stomach belongs to middle or old age, the disease necessitating it occurring at these periods. Where there are no adhesions the operation is not very difficult; with ordinary care hemorrhage is not likely to occur. The effect of surgical shock upon the patient is most to be feared, and should be guarded against by *heat*, stimulants and quick work in operating. The Murphy button saves much time and has proved of great service in the present case. It is not always possible to do esophago-duodenostomy, and the button would do as well in esophago-enterostomy, for it could be applied where it would be impossible to make a sound suture, as in cases where the esophageal end is very short. If, however, careful sewing could be done quickly and accurately over some form of tube that could be pulled out through the mouth when the sutures were placed, it would save considerable worry to the patient and surgeon. The cases could be well imagined which would be difficult to nourish for two weeks through the openings of a No. 3 button. Besides the impossibility of taking much nourishment at a time, there is the difficulty of swallowing, which the presence of the button in the esophagus causes by reflex action. This reflex action was very slightly marked in this patient; but with a more sensitive nervous system it might be enough to prevent swallowing sufficient nourishment to sustain life, especially if added to this it became impossible to retain nutritive enemata.

It would seem easy, from what is seen in anatomical plates, to join the duodenum with the esophagus, for apparently they are on the same plane; but in reality the esophageal orifice is on a higher plane and behind the pyloric orifice. If the duodenum is not bound down by adhesions, it can be approximated without much tension to within an inch of the diaphragm allowing the abdominal part of the esophagus to be only two centimetres in length, which is Cruveilhier's estimate.[3] There is even then room to place a purse-string suture and apply the Murphy button. It would seem that tension on the elastic tissue of the abdominal esophagus would easily give an increased length; it does stretch to a certain point, but it is disappointing and much more limited than one would suppose.[4] From the experience which this case gives, I think it would be easier to tear the esophagus than to pull it down from its opening in the diaphragm. It may have been that the esophageal clamp interfered with its elasticity, but it seemed at the time of the operation as if the stretching could be accomplished much more easily sidewise than lengthwise. A slight gain in the length of the esophagus can be made if the clamp is applied vertically instead of sideways; there is thus less chance of making an oblique cut in the division of the esophagus. Unless there is enlargement of the left lobe of the liver, there is much more room to work in than would be supposed, especially if the abdominal incision is a large one. In fat patients the incision can hardly be less than seven inches in length, and then there is no room to spare.

In the treatment of this case no attempt has been made to predigest the nourishment which was given to the patient. The precaution was taken, however, to supply easily digested food; and when meat was allowed it was cut in very small pieces. The food was taken slowly, whether liquid or solid. It is no hardship for the patient to live on simple food, for she has done so all her life; and especially, as age has advanced, she has been obliged to eat food that required the least chewing. The food was given of medium temperature; water was taken as it came from the pipe and wine as it stood in the room; iced cream, of which the patient was particularly fond, was taken slowly so that it dissolved in the mouth before it was swallowed. At first everything was too salt; as the patient got well, she wished salt on both eggs and oysters. The amount of flatus in the bowels was enough to cause pain only a few times in the early part of her illness. The urine has been normal throughout. Never since the operation has any undigested food been seen in the movements from the bowels, and for the most part these have been wholly or partly formed. The patient has vomited but a few times since the operation; twice after etherizations, twice after some laxative had been given, once after the button left its place, and twice after coughing — not more than six ounces at any one time, generally much less. On three or four occasions a mouthful of food would be regurgitated — an oyster, some shreds of meat or a few teaspoonfuls of coffee. As a usual thing the food was well retained and well digested. Milk, which would sustain most patients under such circumstances, was not liked, and an important food was thus unavailable. The patient's skin is in a natural condition without any dryness; this may be due to the thorough washing which the entire body has had daily since the operation. The symptom which gave the most anxiety after the operation was the restlessness, which was unusually marked. This was without doubt the result of the surgical shock, which was caused by the removal of so important an organ as the stomach, and the interfering with its vessels and nerves.

The season of the year in California, with mild sunny days, and the careful and constant nursing, are among the factors which made the operation a success. The age of the patient counted for something also; the effects of the change of life had long passed by, and there had been for many years an even condition of good health. Many old people can stand in a surgical point of view much more than is generally supposed. The patient was not worried about herself. All she wished for was to be restored to health; how this was to be accomplished she never asked, and to this day she does not know that her stomach has been removed. She has a fine color; complains of nothing so far as the functions of her body go; eats whatever she wishes; has no pain whatever; is of a very cheerful disposition. She is out of doors most of the day from 10 till 5 o'clock, taking occasional walks around the hospital grounds; her temperature and pulse are normal; she sleeps well without an opiate. Although she has food every three hours, she feels quite hungry at times, and feels that she could eat twice as much as is given to her. She is gaining in weight; and her general condition at the present time, April 14th, seven weeks after the operation, is satisfactory in every respect. She leaves the hospital to-day for her home.

In conclusion, I wish to acknowledge my great indebtedness to Dr. Carl Schlatter, of Zurich, for his description of the operation and subsequent treatment, which has been invaluable to me in making this case successful.

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[3] Anatomie Descriptive, vol. ii, p. 113.

[4] "In its abdominal portion (if at any time we admit an abdominal portion) the esophagus is *en rapport* with the esophageal opening of the diaphragm, to which it is very solidly adherent." Cruveilhier, vol. ii, p. 113.

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SOME ASPECTS OF MEDICAL PRACTICE.[1]

BY ALEXANDER ROVINSKY, M.D., BOSTON.

"Amicus Plato, sed major amica veritas."

It is somewhat of an unpleasant and too often ungrateful task to introduce into the midst of festivities an unpopular subject. The propriety of interrupting this evening's occasion, participated in as it is by men whose daily occupation is of too sombre a nature and lacking the ordinary pleasantries of life, may well be questioned, if it were not for the fact that the subject to be brought before your notice is of so serious a nature as to demand our closest attention.

Our self-glorifications in the great progress made in all the domains of the healing art, have been rather rudely disturbed by the tendency observed of late to discuss in a more or less candid manner the various abuses and evils from which the profession has been suffering uncomplainingly for some time past. I allude here particularly to the hospital and dispensary abuses — a subject that is engaging at the present time the earnest attention of a very great portion of the profession, and is even beginning to find its way into the lay press. Ordinary considerations of humanity and love of, as well as respect for, our profession, which we never fail to opportunely designate as honorable, grand, and so on, demand of us a thorough investigation of this most important subject.

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[1] Read at the first Annual Meeting of the Boston Medical Society, March 15, 1898.

That commercialism, with all its blighting and corrupting influences, has invaded the ranks of the profession, is a fact become stale by frequent repetition. To be sure, the medical profession, as an organic part of the modern social system, cannot escape the tendencies of the age; but who will deny that a great deal of the evil is remediable, and can be corrected within, and by, the medical profession itself? By shutting our eyes and persistently denying, as is done in certain medical quarters, without the least shadow of investigation, the existence of a truly deplorable condition of things, we certainly do not even approach the solution of this problem.

Although both the young and the older practitioners are subjected to these abuses, it is particularly the former who are the greatest sufferers by them, and as in the young generation lies the seed of, and the hope for, the future, the question acquires a still greater importance. It is the younger practitioner, with his plastic mind, with his enthusiasm for work, his ability to grasp, and readiness to utilize, new discoveries, who paves the way for scientific progress and professional perfection. The older man, the "experienced" practitioner, is frequently unyielding, and is liable to become too conservative to embrace new teachings; his conservatism — an excellent quality, when needful — becomes to him a second nature, from which he can very often, but with difficulty, dissociate himself.

To bring into clearer light what follows, let us take a cursory survey of things medical in general, as the question before us is far more complicated than it may seem at a first glance, and, moreover, by putting cause and effect together we may hope to arrive at a clear understanding of it.

The 146 medical schools of the country instruct some 23,000 young men, and graduate annually about 5,000 new doctors. As compared with Europe, which can only boast of 130 schools, we doubtlessly suffer from what the political economist would designate as an "overproduction" of medical schools, resulting, as could be expected, in an overcrowding of the professional market. Driven into the field of competition, the majority of these schools crowd each other in cities large and small, causing the degree M.D. to become a somewhat cheap article, so much so, that its possessors will in the near future be placed in a position similar to what was once threatened by a celebrated minister of France, who declared, that he would create so many dukes, "that it would be a shame not to be a duke, and no honor to be one."

The medical schools being the least endowed — by private donations or State assistance — of all the professional schools, their existence (outside of the few connected, not nominally, however, with a university) depends entirely on the tuition fee of the students, and these last must therefore be attracted to them by all and every means; as a result we see the doors of the great majority of these institutions all but widely open to any one who evinces any inclination to enter, the examinations being often of such a puerile nature as to give no adequate idea of the student's educational standing. The fact has been complained of, that too many improvident young men enter our medical schools without any idea as to their chances of success in the vocation. It seems to me, however, that the fault lies, not with the young men but with the schools, many of which in their eager hunt for students lure them by promises of but a nominal entrance examination, small tuition fee, and easy means to graduation. A great number of these young men could well remain where they are, growing up into useful members of the community, with an activity in a social sphere suited to their abilities and natural inclinations; as it is, they naturally tend in the direction of the medical school, which holds out for them such bright prospects in the future.

I will here but touch on the fact, that in the schools which lack the clinical and laboratory requisites — and of such there are many! — didactic instruction is unfortunately prevalent to the exclusion almost entirely of bedside experience; while in others valuable time is wasted by the student in attending upon clinical and hospital practice before he has had the time to master the rudiments of medical and surgical principles, his mind being then in a condition when he is unable to assimilate and profit by the experience offered to him.

Turning now to the recent graduate, we find — and so does he very soon — that he is thrown into competing with difficulties of which he very likely had not the slightest idea; for no profession is made up of so many heterogeneous elements as is the case with what is known popularly under the broad appellation of the profession of medicine. Besides the great numbers of graduates of the many schools,[2] there is the by no means inconsiderable class of the so-called irregular practitioners, or, in common parlance, quacks, who cannot as yet be eradicated by any State legislation. They constitute a class of people of a wide range of variable intellectual and moral aptitude; in the majority of cases living by imposition on the ignorant and credulous, under the cloak of religion or falsified science. Quite frequently they are people who have grown tired of less congenial occupations and are not bothered by such trivialities as conscience, honesty, scrupulousness and similar rubbish. They are the ones who flood our "great" dailies with advertisements of a questionable nature, adorned by likenesses of prominent members of the community — strange to say, mostly ministers of the Gospel, who in glowing terms laud to the skies the efficiency of this or that nostrum, in curing their ailments, after "the greatest doctors of both hemispheres gave up all hopes." One bottle — nay, at times, one dose — was sufficient to revive the shattered system which was on the verge of being gathered to its forefathers![3]

In certain parts of our large cities the foreign medical men — German, French, Russian, Swiss, etc., — form the predominating class of the practitioners of medicine. Some of these are regular practitioners from the other side; but the greater part of them came here because they have no right to practise in Europe. As an example, in Germany and Switzerland a holder of the degree of M.D. is not entitled to practise. To obtain this right he must pass a very rigid State examination, in comparison with which the examination for the degree is but a mere trifle. The State recognizes as lawful practitioners only those physicians who have passed their State examinations. They alone have a license to practise; they alone can receive appointments to any medical office. Those who passed only the university examinations for the degree can hold no appointments, and have no legal right to insist upon the payment of fees from their patients. The value of this degree may be judged from the fact, that the Illinois State Board of Health (the pioneer body in medical reforms) adopted March 31, 1891, a rule, according to which the holders of the foreign degree of M.D. must pass an examination before that body to be permitted to practise in Illinois, unless they were allowed to practise medicine in the countries from which they received their degrees. As a matter of fact, a very considerable percentage of those who come up for their State examinations in Europe are rejected annually by the examining commission. These, and many who did not even attempt the State examinations, come here and enjoy privileges denied them at home.

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[2] We have proportionately twice as many physicians as Canada; three times as many as England; four times as many as France; five times as many as Germany; or eight times as many as Russia. The average ratio is one physician to 550 inhabitants; but in some States it is as low as one to 350, or even less.

[3] The other day I chanced to come across the following advertising gem: "Mrs. X. Y. Z. [a well-known abortionist], having established a new office, is ready to attend on ladies suffering from *perineorraphy*, *ovariotomy*, *gynæcology*, and similar (*sic!*) female complaints." And this in a Boston newspaper — *horribile dictu!*

A condition quite prevalent in the middle-class and poorer districts of the large cities is the practice of medicine in which many of the druggists are engaged, to the detriment of both the overcrowded profession and the unsuspecting public. The extent of this practice, on the one hand, and the ease with which combinations of drugs in the attractive and convenient form of pills, tablets, etc., can be readily made or obtained, induce many of the practitioners to act the part of the druggist for their patients. This, however, they do reluctantly, considering it rightly as an invasion of the apothecaries' rights; but they are compelled to resort to it as a means of self-protection, for the unscrupulous druggist will frequently prevail on a patient by promises of a cheaper and more rapid cure. At the same time, the formation of the habit of using ready-made tablets and pills, while seemingly doing away with the necessity of prescribing, relegates the art of prescription-writing to a second place, and it is little by little entirely banished from the armamentarium of the busy practitioner, who thus deprives himself of his most potent weapon — the knowledge of skilfully combining effective drugs.

Characteristic of the large city are also the numerous societies, lodges and similar bodies, the practice among which is known under the generic name of contract practice. A certain number of men bind themselves together for various purposes, among these also to employ a physician for the whole body of members belonging thereto; the fee for the individual member is usually very small, frequently outrageously so, while the demands made on the physician are often of such a nature as to render his life — especially if he possess any self-respect at all — a long chain of misery and degradation: for the self-will of your unorganized mob, which frequently acts suggestively or subconsciously under the control of one or more leaders, cannot be compared with the organized tyranny of a well-regulated body of men, who are constantly aware of the fact that your material well-being depends entirely on their good-will. They brook no independence on the part of the physician, they admit no self-respect; as if mortgaged, you belong to them body and soul, and they exploit you — for there are among them such as are well-to-do and even rich — in a manner altogether indescribable. Sad as this condition of affairs is, the competition among physicians is so intense that almost Tammany Hall tactics are resorted to by some of the competing candidates for employment by these bodies, as fair and honest means have been found time and again to fail.

There are but few agencies that debase and corrupt both the physician and the patient to the extent that this is accomplished by the contract practice. The extremely low remuneration compels the physician to engage himself to several societies, and physicians who have to attend several hundred families, that may live in widely separated parts of the city, are by no means rare; the hurry-scurry of the medical attendance breeds superficial habits of examination and a certain contempt for a thorough investigation of the case, which may with some grow into routine habits, bringing about results disastrous to both the physician and patient. On the other hand, just like the hospital abuse, these practices corrupt the patients as well. It is either human nature or the part of it constituting folly, to set but a slight value on articles obtained cheaply or free of charge, and to estimate the commercial worth of an article paid for, usually proportionately to the price paid, and not to its immediate utility or the results obtained from its use. The value of a commodity in the market being dependent on the law of supply and demand, it is self-evident that, the supply exceeding the demand, the value of the commodity depreciates, becomes low. Apply this to the physician — whose work in this case is the commodity — and the results, although somewhat unpleasant to contemplate, are identically the same.

But the greatest, the most formidable competitor of the young as well as of the older practitioner, of the recent graduate as well as of the skilled and mature physician, of the poor and rich alike, is the unbounded abuse of the various hospital and dispensary charities. This subject has been so thoroughly discussed and ventilated of late, that it remains for me but to give a brief *résumé* of the opinions held by competent men concerning this matter. The fact has been established beyond peradventure, that we have many more hospitals and dispensaries than the community is in urgent need of. The majority of these institutions openly violate the very fundamental stipulations of their charters, which accord them the right and privilege — for such it is — of assisting the sick poor who are unable to obtain the needed medical aid in any other way; whereas these institutions treat thousands upon thousands of persons who are well able to pay their private medical advisers. They thus, on the one hand, rob the indigent sick of the medical aid to which they are justly and legitimately entitled, by indiscriminately wasting it on the rich and well-to-do; again, by affording medical service to this last class of patients, they invade the clientele of the average practitioner, intruding without any absolute necessity therefor upon his legitimate means for subsistence. It is claimed that in some cities these institutions, under the cloak of charity, serve but too frequently as sub-offices for some of the attending physicians; it also is unfortunately too true, that no serious, honest attempts are ever made by these institutions to discriminate between those who cannot pay, and those who will not pay.[4] As a result of such a condition of affairs, pauperism is systematically encouraged, the moral sense of the applicant is blunted, while by withdrawing patients from the practice of so many physicians a sort of professional proletariat is being created, whose ranks swell rapidly, and who are driven into resorting to means for a livelihood which are frequently unprofessional and at times dangerously near to dishonest; and as the bitter struggle for existence becomes more and more intense, they are bound to tend lower and lower; the so-called professional etiquette that they see violated on every side by men whom they were taught to consider as leaders becomes in the course of time a dead letter to them; the scientific side of medicine is gradually lost sight of, and the great science is converted into a trade — a change to be seriously deplored, as it is bound sooner or later to breed contempt from the intelligent portion of the community towards such tradesmen.

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[4] Even vaccination, which is done but once during the year, and entails, therefore, but a very slight expenditure even on the poorest, has been monopolized by our dispensaries where this trifling operation is performed gratis upon thousands and thousands of children of the well-to-do or even rich, who can, surely at least once a year, pay a private physician.

The above is but a feeble, and certainly imperfect attempt to depict the condition of things medical as seen at the present day. I dare, however, trust that it will give at least an approximate idea of what it was intended to describe, and with the knowledge thus derived of cause and effect, we may attempt to suggest some possible remedies. Right here I am tempted to present an interesting, although by no means novel fact. While scanning the list of vocations of the members of the fifty-fifth Congress, I was struck with the meagre representation of the profession of medicine as compared with other professional callings; out of a membership of 356 there were but five physicians; the same obtains to a greater or lesser extent in almost every State legislature in the Union. It occurs to me that the average physician does not take a sufficiently active participation in the government affairs of the city, State or Union; and I cannot help thinking how much different would be the social status of the profession if it had a sufficiently strong representation in the legislative assemblies. What a humiliating spectacle to witness the impotence of the representatives of a profession which counts among its members many able and intelligent citizens, to pass a bill for the regulation — loose and trivial though it be — of the practice of medicine in a civilized community! Verily, a spectacle for the gods! With the creation of a representation in the legislative assemblies of the land, there will soon appear that *ésprit de corps* which forms the very essence of a united profession, and which is so sadly lacking in the profession of this day. It will then be possible to effectively repel the many unjust attacks for which the profession has for a long time past served as a tempting target on the part of many who would not dare attack in a like manner any other profession.

One of the important causes that tend to increase the number of our medical schools is the ease with which charters for such institutions are granted by a great number of our State legislatures. In doing so they often commit a grievous error, as the degree of M.D., which these institutions are empowered to grant, is more than an honorary title. It confers upon its holder a right to the confidence and patronage of the people as regards their health, the most vital element of their existence. It puts him into the possession of honorable means, whereby it becomes "a property right of great pecuniary value." No other degree, *per se*, possesses a similar significance or valuation. The possessor of the degree of M.D. comes in closer contact with the community than does a member of any other profession; the scope of the physician's activity is much greater than that of the theologian or lawyer, since, as Mr. Evarts justly remarks, "there are many who have no property to be cared for, and there are some with regard to whose possession of soul there may be a question; but everybody has a body which is at times liable to require skilled management to avoid suffering and death, and enable it to do its work, although some bodies, it must be confessed, are hardly worth preserving."[5]

No charter must, therefore, be granted to any corporation for the purpose of establishing a medical school, unless it can prove that the community stands in urgent need of one; it must also give evidence of its ability to equip the prospective school with all the requisite laboratories, show its connection with hospitals, dispensaries, etc. It is not going too far to require that the instructors in these schools should be men of recognized worth and ability, and not such as use their "professorships" as an advertising medium with their clientele. The medical schools of our cities should, by some manner of means, either be joined into one large institution, or they should be required by an act of the legislature to attach themselves to the neighboring university, as a department thereof.[6] This would give them a prestige not obtainable in any other way, while at the same time it may also give them the opportunity of enjoying, at least to some extent, the beneficence of the numerous donations, which are showered yearly by the hundreds of thousands into the coffers of the universities of the land. As soon as the medical schools will thus change their now quasi-independent character, their dependence on the tuition-fee of the students will be greatly diminished, and the standard of admission as well as of teaching is certain to be raised. You will observe, in connection with this, that with the exception of very few independent medical schools, the best ones constitute departments of universities.

As regards the hospital and dispensary abuses, the only measure of effective struggle against this growing evil would be the establishment of a method whereby a distinction, more or less accurate, could be made between those who are entitled to treatment, and those who are not. It would seem to me, that if every applicant be required to present some sort of a certificate from either his religious adviser, or his landlord, or from any physician, or generally some reputable citizen, the number of applicants would be materially lessened, without in the least affecting the really needy. This is by no means an ideal measure, but it seems possible and not difficult of application; and even if it present opportunities for being abused, it will nevertheless be of undoubted benefit, if employed seriously, honestly, and as thoroughly as possible. Such an application of this method can only be effected by the concerted efforts of the attending staff and the trustees of the hospitals. It would also be practicable for each institution to employ a corps of inspectors, whose duty it should be to investigate either the majority of the applicants, or at least those who would seem suspicious. This the institutions owe, both to the community and the profession. The latter, we may rest assured, will be only too ready to coöperate with the hospital and dispensary authorities in the application of any measures that will tend to eradicate or circumscribe the evil as much as possible.

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[5] The Forum, vol. xiv, p. 729.

[6] In this connection it may be interesting to note that Chicago has twelve medical schools (not including three post-graduate ones), or three more than the whole of Russia, or as many as Austria, Switzerland and Denmark combined. St. Louis is not to be outdone with her nine schools. New York, Baltimore and Cincinnati possess seven schools each; and so on.

It is high time that our State legislatures take a hand in the amelioration of medical affairs in the land. The *laissez-faire* system, with its resulting individualism run mad, has about reached its highest stage of development. Decisive, intelligent interference will in the course of one or two decades revolutionize our medical schools, correct, as far as it lies in human power to do so, the various medical abuses, and elevate the profession to a position where it shall command the respect, not only of the immediate community, but of the whole civilized world. I am well aware of the fact, that such utterances will call out a cry against paternalism, and will be stamped as an invasion of the personal rights of the individual, fostering attempts on the constitutional liberty of the freeborn citizen, etc. I can hear this cry all around me. I heard it from the lips of the opponents of the State regulation of the practice of medicine; and I could not help paraphrasing mentally Jefferson's famous saying about patriotism being the refuge of a certain class of people. But facts are the best arguments. The same hue and cry was raised while State regulation of the practice of medicine was being introduced into almost every State of the Union. But the system has existed for ten years or so, and it has resulted in an undoubted improvement of the general educational standard of the profession. I have no doubt, but that, when rigorously enforced, the State regulation of the practice of medicine will become a potent factor in the medical reform movement.

While discussing the question of State interference for the regulation of this practice, W. H. Purrington, an eminent New York lawyer, counsel for the New York County Medical Society, proved some ten years ago, that such interference is constitutional, and that the principle involved in this sort of legislation stands settled and approved by the Supreme Court of the United States, and that of every lesser community, before which it had been brought.[7] It is the great principle of *salus populi* — the principle of security and self-protection against fraud and ignorance.

It is by all means time that we had not only city or State, but also national representation. There should be a Central National Bureau of Medicine, as a branch of the Department of the Interior, endowed with discretionary powers, serving as the highest tribunal on medical questions of a national character, such as quarantining, appointment of medical coroners, unification of the State Boards of Examination, and questions of a like nature.

These propositions, as I am well aware, will be relegated by some into the domains of Utopia, or dismissed as impracticable or premature. But there is an undercurrent in the present social life of the community, the rumblings of which are heard by every attentive ear, and which is bound, sooner or later, to appear on the surface; and that is the tendency to widen more and more the sphere of government and to increase its power — wisely and with circumspection — as against the encroachments of individuals or corporations; for no individual, however powerful, no corporation of individuals, however mighty, can or will benefit the community at large, as much as can the State, forming a part of the people, kept in check by the people, and legislating for the people.

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Clinical Department.

PROSTATECTOMY BY COMBINED SUPRAPUBIC AND PERINEAL METHODS.[1]

Recovery with Complete Restoration of the Bladder Function.

BY F. S. WATSON, M.D., BOSTON.

The patient, who is fifty-four years of age, four years ago began to experience symptoms of prostatic obstruction, dysuria and frequent urination; these gradually increased and not long afterward he had an attack of acute retention of urine. Attempts to relieve this were fruitless and resulted in a severe hematuria, probably due to a false passage. The hemorrhages have continued periodically ever since, at times being abundant. Pyuria appeared shortly afterward and has continued ever since.

The acute retention relieved itself after about twenty-four hours; but there was great difficulty in urinating for ten days. Since this time, although there has been no actual retention, dysuria, frequent and painful micturition have become worse; the frequency is now from one to two hours in the daytime, and three or four times during the night.

Patient's condition has become threatening. There has been a marked loss of flesh and strength. The urine contains a considerable quantity of blood, pus and mucus.

Examination by rectum shows a very large bilateral hypertrophy of the prostate.

Operation, combined suprapubic and perineal prostatectomy, December 26, 1897. The abdominal wall was very fat and dependent and in order to make the bladder more accessible the fascia covering the abdominal muscles was exposed by a *crescentic incision extending from one anterior superior spinous process to the other*, with its convexity towards, and its middle point just above, the upper margin of the symphysis pubis. The prevesical space was then opened by the usual vertical incision in the median line between the recti and the pyramidales muscles. It contained a large quantity of fat. The peritoneal fold was raised about four finger-breadths above the symphysis by Petersen's rectal bag, containing nine ounces of water, which was filled first and then the bladder was injected with ten ounces of fluid (sterilized salt solution). The patient was placed in Trendelenburg's posture. Just before doing this the bladder was held by a tenaculum passed through its anterior wall immediately below the insertion of the peritoneal fold. It was then opened by a longitudinal cut of an inch in length. The index finger was inserted, and the bladder was temporarily sutured to the edges of the abdominal wound by a stitch on either side.

The mucous membrane of the bladder was normal to the touch, and no stone was present. The two lateral lobes of the prostate were largely hypertrophied, the left much more than the right. There were marked intravesical projections from both lobes. That from the left being about the size of a small pullet's egg. Upon the upper part of this was an ulcerated surface which extended into the fissure just below *B* in the illustration and which was evidently the source of the hemorrhages that had occurred from time to time. The slightest touch upon it caused an abundant bleeding. An external perineal urethrotomy was then performed to provide for subsequent drainage and also to bring the prostatic lobes better within reach from within the bladder by pushing them upward from below by the finger-tip inserted in the perineal wound. The mucous membrane and fibrous capsule over the top of the intravesical projection of the left lobe was incised with a scalpel, and a large fibroid growth (see Illustration *B*) could then be easily enucleated by the finger. Its measurements were as follows: length two and a half, breadth two, and thickness one and a half inches respectively. Hemorrhage was free but not serious. (*A* in the illustration represents the middle lobe, which was removed in the same manner.) A Cabot bladder tampon was packed into the space left by the removal of the tumor, the lower string being carried out through the perineal wound.

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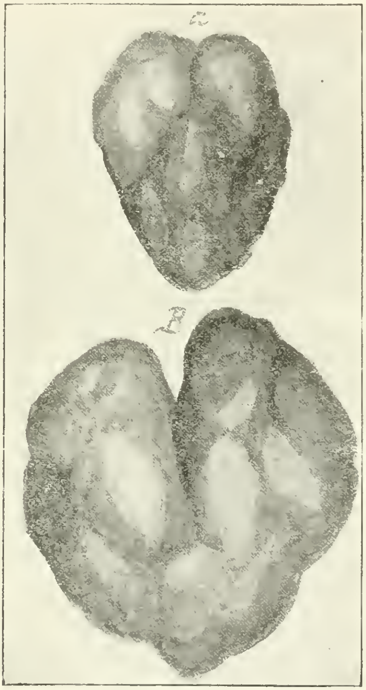
[7] American Social Science Association, session September 5, 1888, p. 29.

[1] Read before the Surgical Section of the Suffolk District Medical Society, March 2, 1898.



The patient bore the operation well; there was but little shock. The crescentic skin flap was incised in the middle, to allow of the passage of the drainage-tubes, which were two parallel rubber ones having a hole cut in them close to the ends. The bladder was sutured close around the tubes, and the abdominal wound was united at its upper and lower angles and the skin flap sutured by a separate row of stitches. The rectal bag was retained until after the removal of the left lobe had been effected. The tampon was removed on the third day, in doing this the suprapubic drainage-tubes were pulled out and could not be replaced; there was consequently no further drainage. The skin incision was kept open at its middle point by a small wick of iodoform gauze.

The *suprapubic bladder* wound healed on the fourteenth day and voluntary urination was re-established at once. The urinary stream, which prior to the operation had been weak and very small, was now full, and projected with force.

On the twenty-first day blood ceased to appear in the urine. The intervals of urination after the closure of the bladder wound were lengthened at first to two hours, and shortly afterward to four; and the patient slept from five to seven hours undisturbed. There was no residual urine.

The urine after the fourth week contained much less pus and mucus than before the operation, and pain and bladder irritability had wholly subsided.

The patient's strength and general condition rapidly improved. There was but very little rise of the patient's pulse or temperature at any time after the operation.

On the twenty-sixth day the patient was out of bed.

The perineal wound closed at the end of a month. The suprapubic superficial abdominal wound did not close until the end of the sixth week, when the patient was discharged well. He has continued in excellent condition both as to his general health and the local conditions ever since (April 30th).

This case is an example of the striking benefits that in a certain number of instances follow the operation of suprapubic prostatectomy, and which may be hoped for in a very fair proportion of the cases, when, as in the present instance, the surgeon has the opportunity of performing it upon a patient whose age and general condition are such as to lessen the risk of a fatal result of the operation which must always remain a serious one and whose bladder has not yet lost its expulsive power, or at any rate the capability of regaining it when the obstacle to the outflow of urine has been removed.

The writer would call attention also to the suprapubic crescentic incision through *the skin* as described above, as being of decided advantage in very fat abdomens, in that it shortens the distance to the bladder which would otherwise be very great, and thereby greatly facilitates the subsequent operative steps for this and some other intravesical conditions. The skin flap, formed by dissecting upward from this incision, is intended only to include the tissues down to the fascia covering the abdominal muscles. The flap is turned upward over the belly, and may be conveniently attached to the skin above by one stitch passed through the latter and the edge of the flap to keep it out of the way until the end of the operation.

This growth is an excellent example of the fibromyomata, which are so similar to those of the uterus, and which, as in a certain proportion of the latter, form a distinct mass within a more or less well-defined capsule, from which they can be readily enucleated by the finger. Their removal is greatly facilitated by the combined perineal and suprapubic operation, the detail of which I will not describe here, but merely note that by it the prostate is made much more accessible by being pressed upward toward the suprapubic or downward toward the perineal incision, according to which of the two routes is to be utilized for its removal.

The only other point to which I would call attention is the complete control of the compressor urethræ muscle, or outer voluntary sphincter of the bladder, in preventing the outflow of the urine, for it is presumable in this case, that the inner sphincter must have been too seriously injured to have been able to retain the urine unaided, and there the control of the bladder in this respect has been complete.

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Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

NEW ORLEANS, APRIL 19–21, 1898.

FIRST DAY. — MORNING SESSION.

After Dr. J. Holt, of New Orleans, had delivered an Address of Welcome and the various committees had made their reports, the President of the Association, **Dr. T. F. Prewitt**, delivered his address upon

THE FUTURE OF THE ASSOCIATION.

After referring fully to the organization of the Society and to some of its former presidents, especially its founder, he dwelt upon the standing in the profession of its present and future members, and especially to their advances in the art of surgery. He also referred to the many signs of progress of the nineteenth century, alluding among other things to the railroads, steamboats, telegraph, telephone and electric-light, as well as to the rapid strides made in surgery, and concluded by urging the hearty co-operation of all distinguished surgical practitioners, writers and teachers in enabling the Association to occupy the proud position its founders destined for it.

AFTERNOON SESSION.

Dr. Charles A. Powers, of Denver, read a paper entitled

THE QUESTION OF OPERATIVE INTERFERENCE IN RECENT SIMPLE FRACTURES OF THE PATELLA.

The author first referred to the writings of Dennis, Bull, Czerny and Myles upon this important subject, and then commented upon the two most important tests, the structural and functional, for these fractures. As to the mechanism, he believed that the majority of these fractures were due to muscular action, the patient endeavoring to save himself from falling, strongly contracting the quadriceps femoris. He showed, in treating on the question of the pathology, that there are but two fragments in the fracture due to muscular action, the upper one being generally the larger, the fractured surfaces being, as a rule, irregular and the line of fracture transverse or oblique. The author enumerated the conditions tending to cause imperfect union and the obstacles to union as follows:

(1) Separation of the fragments, due to (*a*) retraction of the upper fragment from contraction of the quadriceps femoris, and a slight drawing down of the lower fragment through a shortening of the ligamentum patellæ; (*b*) effused blood.

(2) Tilting of the fragments (this may be present to a marked degree and unrecognizable without operation).

(3) Rupture of the tendinous expansion of the vasti and of the lateral portions of the capsule of the joint.

(4) Prolapse of pre-patella tissues into the breach.

(5) Atrophy of the quadriceps femoris due to (*a*) disuse, (*b*) arthritis, (*c*)marked contusion of the muscle, (*d*) blood extravasated from the joint through the rent in the upper part of the capsule.

(6) Arthritis of the knee-joint, this possibly resulting in —

(7) Adhesion of the patella.

Further, though of little value, may be added —

(8) Natural poverty of the blood supplied to the bone (rendered negative by the fact that the vertical fractures healed satisfactorily) and

(9) Exceptional tendency to osteitis, seen in fat people, in the aged and in certain conditions of the blood.

The speaker considered that as to the non-operative management of fractured patella by mechanical means no better evidence of the unsatisfactory results need be adduced than the large number of devices and plans which have been resorted to from time to time. Some of the devices were spoken of, among others the so-called "Dutch" method or massage, Malgaigne's hooks, and the use of properly applied bandages or strips of plaster followed by a plaster-of-Paris dressing or a splint.

He then quoted fully from numerous personal letters from prominent surgeons all over the United States, each giving his opinion and preference as to the treatment of this fracture. The results of various kinds of treatment by many different surgeons, and the comparative mortalities from these various methods, were given in elaborate statistics which followed.

Dr. Powers then took up the subject at great length under the headings of "Limitations Attending the Operation," "Selection of Cases," "Time of Operation," "Operative Procedures," "Dangers" and "Immediate and Remote Results of Operative Management, and Comparison of these Results with those Attained without Operation."

Dr. J. D. Bryant, of New York, in computing the comparative worth of the different methods, in his discussion on Dr. Powers's paper, referred to the work of the late Prof. Frank H. Hamilton on this subject, and called attention to the importance of the following determining factors: (1) the degree of physical infliction; (2) the duration of confinement in bed, as bearing respectively on the comfort, health and business demands of the patient; (3) the character and importance of the inherent and acquired complications of respective methods of action; and (4) the final burdens imposed by the sequels of different plans of cures.

He again quoted to some extent from the writings of Hamilton, and discussed these four points at great length.

The doctor said that, except in cases emphasized by a special indication, he was not inclined to the practice of suturing the patella, but thought it a justifiable measure in selected cases.

At present the technique which he employs consists in making a short vertical incision; removing the blood-clots from the fractured borders of the bone, along with the interposed fibrous tissue that is sometimes present, and cleansing the joint cavity; draining the joint with a few strands of silkworm-gut at the outer side; uniting the fracture with a small wire so placed as to cause retention and proper apposition of the fragments; closure of the wound, antiseptic dressing and fixation in bed for two weeks, followed by plaster-of-Paris spica, and out of bed on crutches.

In closing he called especial attention to a mechanical method wholly or in part employed by himself during the last twenty years in the treatment of fifteen cases of simple fracture, for which he claimed greater comfort and efficiency, less danger, only a week's confinement to bed, and results equal to the best of other mechanical methods. Drawings illustrating this method were shown.

Dr. M. H. Richardson, of Boston, spoke of the importance of good surroundings, good health of the patient, and surgical experience in aseptic technique in the treatment of these cases. He thought wiring should be seriously considered if one cannot get complete control of extension owing to extensive laceration. He also thought that in ordinary cases the time of confinement should be six months. He thought that a wound of the knee-joint was especially liable to infection. When the failure of the conservative methods had been demonstrated, he thought the wiring of the patella should be considered.

Dr. James E. Moore, of Minneapolis, thought that the opinion of American surgeons of the present day was represented by Dr. Powers's paper, believing operative results to be better than the results reported by using non-operative methods, and commented on such a low mortality as less than one per cent. He believed that an open arthrotomy would be less fatal than the passage of ligatures around the patella, and strongly advocated asepsis, proper environment and experience in performing operations about the knee-joint. If immediately operated upon, he believed the approximation of the fragments would thus become easier. By avoiding over-distention and interference with circulation he believed better results would be gotten by temporary drainage. However, he did not feel that the amount of separation was any index as to the future usefulness of the limb.

Dr. W. S. Halsted, of Baltimore, was in favor of draining only when the tissues were not able to take care of the micro-organismal infection themselves. He advocated the immediate opening of the joints and thoroughly washing out, and the wearing of rubber gloves during these operations.

Dr. Powers closed the discussion by stating that he had expressed the opinion in the body of his paper, that if a surgeon felt able to make one of these operations, he ought to feel equally safe in dispensing with drainage.

Dr. Nicholas Senn, of Chicago, read a paper entitled

THE ETIOLOGY AND CLASSIFICATION OF CYSTITIS.

After speaking fully on the anatomio-physiological construction of the bladder and referring to its lack of absorptive power, he spoke of the etiology, which he divided into, under the head of predisposing causes, retention of urine, abnormal urine, tumors, unrest of the bladder, calculus and foreign bodies, exposure to cold, venous stasis and trauma. Under the head of exciting causes, he mentioned first infection by the urethra, infection by the urine, infection from adjacent organs, infection from the blood, etc.

After mentioning Guyon's classification, he took up the question of classification, dividing it into the anatomical, pathological, clinical and bacteriological. He sub-divided the anatomical into paracystitis, pericystitis, interstitial cystitis, cystitis; the pathological into suppurative cystitis, exudative cystitis, catarrhal cystitis, ulcerative cystitis, exfoliative cystitis; the clinical into chronic cystitis and acute cystitis; and the bacteriological into streptococcus infection, staphylococcus infection, bacillus coli-communis infection, diplo-bacillus infection, saprophytic infection, gonococcus infection, erysipelatous infection, tubercular infection.

The details of many experiments were given in full, and each division and subdivision was discussed at great length.

Dr. John Parmenter, of Buffalo, in discussing the part of the paper in reference to the bladder not possessing any power of absorption, mentioned his experiment of injecting eight drops of sulphuric ether in a drachm of water into the bladders of twelve healthy men and detecting the odor of ether on the breath one minute after the injection. He considered that the infection was most of the time due to a combination of traumatism and micro-organisms and urged for greater care in the disinfection of the urethra before sounding.

Dr. W. S. Halsted, of Baltimore, referring to the work of Dr. Young, one of his assistants, mentioned that Dr. Young found that the gonococcus was sometimes present in neutral urine, sometimes in acid urine and once in alkaline.

Dr. Alexander, of New York, said that lymph nodules were usually present in the bladder and ureters, and made exceptions to Dr. Senn's statement that there were no glands in the mucous membrane of the bladder. He stated that sometimes these lymph nodules give rise to a peculiar inflammation which he termed "nodular cystitis." He mentioned some recent investigations in which he found accessory prostatic glands around the trigone of the bladder in a proportion of normal bladders in which the middle portion of the prostate was enlarged. He thought that inflammation was caused by retention, and that in moderate cases of stricture an appreciable amount of residual urine was found, and that sexual hyperemia resulted in a moderate prostatic congestion.

In regard to traumatism he thought it was often due to destructive diseases brought about by irregular catheterization, and said that when a patient with prostatic enlargement is catheterized with an absolutely clean catheter infection will still take place at times. He also said that if a patient is catheterized at nine o'clock in the morning, again at five or six, and not again until the next day at noon overdistention will produce trauma and the more rapid occurrence of infection.

Dr. Senn, in closing the discussion, stated that he believed the smell of ether on the breath so quickly in Dr. Parmenter's cases was the result more of a process of diffusion than of absorption, and that the vesical mucous membrane did not possess power of absorption but the urethra and neck of the bladder did.

SECOND DAY. — MORNING SESSION.

Dr. W. S. Halsted, of Baltimore, read a paper entitled

OPERATIVE TREATMENT OF CARCINOMA OF THE BREAST.

After fully discussing a large number of cases seen and operated upon and giving the statistics of the results for the past nine years at the Johns Hopkins Hospital, he then, at length and in detail, referred to the undescribed, not frequent, cancerous tumors of the breast, to the relative malignancy of the various breast cancers, to the frequency, significance and treatment of cancerous supraclavicular glands; after which he spoke in detail of the operations themselves, as performed by himself and his assistants.

Dr. Charles B. Nancrede, of Ann Arbor, in referring to this subject, remarked he would like to say a word in regard to age. He said that he was struck by the large number of cases of cancer of the breast occurring under thirty-five years of age, and that he had had a limited experience of between 200 and 300 cases. As an example, he cited a case of a young girl who, in the early part of her twenty-fifth year, unquestionably had the same tumor as at her nineteenth year and who was operated upon by him last winter. He inquired if any one's experience coincided with his as to the large number of cases occurring under the age of thirty.

Dr. Roswell Park, of Buffalo, asked what Dr. Halsted's teachings were with regard to endothelioma.

Dr. M. H. Richardson, of Boston, spoke of the good work done by Dr. Halsted in the past on the above subject, and remarked that he himself had noticed and observed many cases where there had been no infection of the axillary glands. He referred to two cases where he had made a diagnosis of a tumor merely upon the symptom of pain. He believed there was usually early recurrence of cases where the axillary glands were affected. In referring to the value of gross appearances, he commented on a case where the microscopic appearance did not at all agree with the diagnosis although the clinical appearance proved its correctness. In his opinion he did not consider a case as cured in three years, as he had seen recurrences in from seven to ten years.

Dr. J. D. Bryant, of New York, stated that he had found enlarged glands in the axilla in some cases where the increase in size was not sufficient to warrant the belief that the glands were infected until a microscopical examination had been made. He strongly commented on the fact that patients possessing a morbid growth would not only keep this to themselves but were encouraged by their physicians in so doing.

Dr. J. McFadden Gaston, of Atlanta, spoke on the occasional spontaneous disappearance of carcinomatous formation, and concluded his remarks by inquiring if constitutional measures employed synchronously had been observed to have any effect.

Dr. Roswell Park continued the discussion by stating that he had for several years been collecting data upon the subject of the spontaneous disappearance of tumors, and was quite anxious to get as much information as possible, and desired to hear the different opinions expressed on the question.

Dr. Rudolf Matas, of New Orleans, at length and very ably discussed this subject, giving a full synopsis of 27 operations for malignant diseases of the breast or its immediate vicinity, which cases had come under his personal notice between the years of 1887 and 1898, 26 of which were women, and one a man, and said that there were no fatal cases from operative causes. Eleven of these cases are living and well, and one has had three recurrences in three years and ten months. In two cases death resulted from accidental causes not connected with the operation. In performing these operations two incisions were made, eight gross operations and 17 complete (Halsted and Meyer) operations. One case which survived two years died finally from metastatic cancer of the uterus. The male operated upon is still living, eight years later, and is free from local recurrence.

The author then referred to 15 complete operations performed since November, 1894, and spoke at length of the result, bearing on all the details; and in conclusion he gave a history of five cases that are living without recurrences after complete operation.

Dr. F. H. Gerrish, of Portland, alluded to the excellent work done by Dr. Halsted, and referred to the fact that the text-books contain scarcely anything bearing on the subject of this paper. He then commented on the various operations that had been performed, and showed how step by step the present method was arrived at. He considered as one of the most important points the necessity of the removal of all mammary tumors whether benign or malignant. He laid great emphasis upon the thoroughness with which operations should be performed and at length of the time required to do them. After discussing the hopefulness of the prognosis in these cases at the present time, he referred to the fact that many cases alluded to in the author's paper would until recent years have been regarded as absolutely unfit for operation.

Dr. Halsted, in closing, commented on the excellent results obtained by Dr. Matas when performing the old operations. As to age, he had seen one case of about twenty-eight or thirty and one of cancer of the liver at twenty-one. He was unable to give a very satisfactory answer to Dr. Park's inquiry as to the proper teaching regarding endotheliomata. He recalled one typical case of cancer of the breast and another of epithelioma of the face which had disappeared spontaneously.

Dr. Roswell Park, of Buffalo, read

AN INQUIRY INTO THE ETIOLOGY OF CANCER, WITH SOME REFERENCE TO THE LATEST INVESTIGATIONS OF THE ITALIAN PATHOLOGISTS.

The author stated that to handle this problem successfully pathologists of the future must begin by studying tumor formation in the vegetable world before studying it in the animal, that is, the comparative method of investigation must be adopted, as the xylomata or woody tumors are so exceedingly common that they have failed to attract the attention which they deserve.

The leipomata are the most frequent, frequently multiple, usually symmetrical and of traumatic origin.

The fibromata are usually of traumatic origin and the majority contain foreign bodies, which have acted as the exciting cause.

Myofibroma of the uterus is, strictly speaking, a leiomyoma, and, according to Billroth, always commences by formation around a small blood-vessel.

Chondroma is most common in infancy and childhood, and practically inseparable from rickets.

Osteoma is often seen as an exostosis or as an ossification.

Adenoma, as every surgeon knows, frequently becomes converted into carcinoma.

The only two theories worthy of consideration in reference to malignant tumors are the embryonal and parasitic. In the vegetable kingdom it is hard to distinguish between various grades of malignancy, but, nevertheless, that tumors kill a large proportion of trees and shrubs will not be disputed by those who have studied the subject.

Cancer has been happily defined as an abortive attempt of a gland epithelium to reproduce itself, and sarcoma is a similar process pertaining to mesoplastic cells. It used to be taught that cancer was exceedingly prevalent at certain ages; but the author stated that, living in a region where cancer is exceedingly prevalent, he had witnessed the ravages of the disease in many relatively young people.

Among the many clinical considerations pointing to the study of cancer the writer mentioned influence of sex, age, complexion, heredity, size of heart, arteries, and lungs, and geographical locality.

As to the influence of sex, Williams has found for every 100 males dying of cancer 223 females perished from the same disease. With regard to age, the most prolific cancer-producing age is between fifty-five and sixty-five. Williams has also found that at least among females the disease is twice as frequent in brunettes as in blondes, while Beddoe states that red-haired individuals are the most exempt of all. As to the heredity, this is one of the most vexed questions, and opinions differ very much. Patients with large hearts, arteries, and small lungs are often the subject of cancer, whereas, in tubercular patients the opposite is true. Speaking geographically, cancer is certainly on the increase in certain parts of the world; and so true is this that the neighborhood of Buffalo, N. Y., has been termed "tropic of cancer."

The question has often arisen as to whether cancer can be disseminated through the agency of insects, and whether water, especially in the neighborhood of woods, could act as a medium of transport, which is the belief at present conceded.

Up to the present time experimental auto-inoculations have practically failed.

Taking up the subject from a historical standpoint, the writer, with Roncali, divided the past few years into four periods, that is, the period of inaccurate observation and erroneous conclusions, which began with Nepveau in 1872; second, the period of accurate observations and inaccurate conclusions, which is essentially the official period, and began with the discovery by Halle, Virchow, and Gubler of protozoa in human tumors; third, the iconoclastic period of doubt as to the accuracy of all past researches, beginning with Russell's work in 1890 and ending with the researches of Banti and Misser in 1894; and, fourth, the period of successful inoculation practised for the most part by Italian pathologists.

As an illustration of Roncali's method of securing culture, he prepared in one case 60 tubes of distilled water containing a little sugar and acid, and in each of them he placed small bits of tumor cut with a sterilized knife. These were kept at 37° C. for ten days, when surface growths were found upon 47 of them, which when examined in the hanging drop were easily recognized as blastomycetæ.

In conclusion, the author states that when it comes to the detection of fungi in microscopic sections, the methods are more or less complicated and require considerable training in special manipulation and observation, and gives in detail two methods for this work.

DR. J. MCFADDEN GASTON, of Atlanta, read a paper entitled

REMEDIAL MEASURES IN OBSTRUCTION OF THE COMMON BILE-DUCT.

The author stated that although the physician usually treats cases of jaundice which result from the temporary closure or constriction of the common bile-duct, yet these conditions are the precursors of derangements which frequently require the aid of a surgeon. Although at the beginning it may be only a functional disturbance, the termination is usually in organic derangements.

He took up the subject of the treatment of jaundice by the use of pilocarpine, upon which Murphy had laid such great stress, but he believed that the majority of practitioners relied more upon the use of the phosphate of soda. However, he stated that very good results have followed the use of olive oil internally, and probably this was the best remedy to-day. The surgeon is confronted with various conditions needing operative interference after all other means of treatment for biliary complications have been tried without arresting the obstruction of the common duct. He believed that it was possible for a stenosis of the walls of the duct to exist, or a partial obstruction of its lumen due to a gall-stone without complete occlusion of the canal, so that a certain amount of bile would be able to pass. He referred to the fact that Fenger had demonstrated the possibility of a gall-stone being so located as to form a valvular closure; and though one may artificially provide a means of escape for the bile by connecting the opening in the gall-bladder in the abdominal wall, yet relief to the cholemia is not always afforded, and the condition may continue even to a fatal termination. He expressed himself as in favor of an incision on a line an inch and a half below the border of the costal cartilages in cases presenting no enlargement of the liver, which incision should be about three inches in length.

The author stated that he had on a previous occasion spoken unfavorably of exploratory puncture, and did not consider it should be recognized as a means of diagnosis or a method of treatment. He then mentioned some of the methods employed to relieve obstruction of the common bile-duct by gall-stones, among others the breaking up of the calculi by the needle, crushing by padded forceps, forcing them into the gall-bladder or duodenum, catheterization and excision through the walls of the duct. It is not always possible to attach the gall-bladder to the parietal opening, nor can one always suture the incision in the wall of the duct when the stone is extracted, so that it is sometimes necessary to employ drainage and leave the ends of the gauze hanging out of the wound.

He then referred to operations he had performed upon three white women for obstruction of the common bile-duct, in which he made a fistulous opening for the bile externally, but the cholemia still persisted as long as the patient survived. Occasionally the attachment of the incised gall-bladder to the parietal opening, where there has been temporary impediment to the flow of bile through the duct, has relieved the obstruction, and been followed later by a restoration of the biliary flow. The author's experience has been that an artificial opening from the gall-bladder or the common duct into the alimentary canal has only been thought proper when other methods have failed to overcome complete occlusion of the duct.

The anastomosis may be effected with the duodenum or the small intestine, but the method with the colon which is sometimes employed is the least desirable of all. He then referred to his experiments upon dogs, which demonstrated the feasibility of a fistulous communication of the gall-bladder with the bowel. From statistics he showed that the various methods are comparatively free from danger and are really attended with considerable success.

Dr. H. W. Cushing, of Boston, read a paper entitled

TRAUMATIC RUPTURE OF THE PANCREAS; FORMATION OF HEMORRHAGIC CYST; OPERATION, FOLLOWED BY A PANCREATIC FISTULA AND RECOVERY.

The rupture of the pancreas in this case was caused by a blow on the abdomen, and was rapidly followed by the formation of a large pancreatic cyst closely resembling an abdominal aneurism.

Five weeks after the injury the author evacuated the cyst through an incision in the abdominal wall and put in drainage. The site of the pancreatic injury was located near the omental tubercle; but it was considered inadvisable to suture it on account of the patient's condition, as he was dangerously ill the next two days. On the following day there was spontaneous evacuation of a subphrenic abscess through a bronchus, following which rapid improvement in the patient's condition was noted. Considerable pancreatic fluid escaped from the abdominal wound; the cyst rapidly became merely a small sinus, and this healed seventy-seven days after the operation. During the patient's convalescence the author took advantage of the rare opportunity to investigate the character of pancreatic fluid in the human subject. It was found to be strongly alkaline in reaction, and was of specific gravity of 1.011 instead of 1.030 as quoted by many authors.

When this fluid came in contact with the epidermis it destroyed it, much to the patient's annoyance, but it did not effect the peritoneum or the granulation tissue. Upon measuring the amount of secretion it it was found to vary from 5 to 60 c. c. per hour, the maximum being during digestion. The total amount per day was almost double that generally stated by physiologists, who claim about 300 c. c., whereas in this case it amounted to from 500 to 600 c. c.

The item of the greatest interest in this case was the peculiar character of the injury which caused the lesion, and the difficulty of diagnosis, as well as the complication of a double parotitis and its connection with the abdominal injuries, to say nothing of torticollis, a subphrenic abscess, with its origin and course and the exceptional opportunity to investigate human pancreatic fluid. So far as the author knows, on no previous occasion has the rate of flow and accurate measurement of this fluid been made. Fifteen months after the operation the patient was well, and seemed none the worse for his experience.

Dr. W. W. Keen, of Philadelphia, referred to a case which came under his observation, in which there was no wasting, no sugar in the urine, or no fatty stools. He inclined to the belief that usually simply opening and draining these cases was sufficient.

Dr. W. S. Halsted, of Baltimore, stated that he had seen four or five cases of pancreatic cysts.

Dr. P. F. Prewitt, of St. Louis, referred to a case of enlarged spleen which he observed some fifteen years ago, and, when operated upon, a cyst of the pancreas was found connected with it. The woman made a perfect recovery. He also stated that he had seen a case which had lost much flesh while confined to bed for four months with a large tumor-like swelling in the median line. Upon opening this much pus and fluid escaped, and it was noted that the tumor extended to the backbone, making a counter-opening necessary. A calculus, believed to be of pancreatic origin, was found and removed, and was probably the cause of the tumor.

Dr. N. B. Carson, of St. Louis, read a paper entitled

CEREBELLAR TUMORS.

The author stated that his principal desire in preparing this paper was to call attention to a much-neglected symptom in these cases, namely, the so-called "cranial cracked-pot sound." This sound is due to a separation of the sutures from internal pressure caused by an accumulation of fluid in the brain cavities, owing to pressure upon the veins of Galen.

The author quoted from the history and treatment of four cases where he had been able to elicit this sound, but cautioned surgeons against mistaking it for certain high-pitched sounds that are occasionally present in certain brain tumors. The sound, he claimed, may be present at any time of life (before the sutures have become permanently united).

The author ascertained that hydrocephalus was present in 22 out of 49 cases of cerebellar tumors, which, in his opinion, improve the importance of eliciting the cracked-pot sound. He stated that on only two occasions was he able to find any reference made to this sound, showing that it had been much neglected.

Dr. W. W. Keen, of Philadelphia, mentioned a case in which this sound was first elicited by a patient himself, when feeling his head one morning after having fallen through the roof and fractured his skull the night before. He was of the opinion that it was a valuable symptom, and particularly where any doubt existed as to the fracture or the necessity for operation.

He reported having observed hydrocephalus in the acquired form many times during the past few years. He did not believe it possible to get this sound where the edges of the bone have become separated, but he had seen a case where it was heard ten feet from the patient.

Dr. DeForest Willard, of Philadelphia, referred to the case of a child less than one year old in which a cerebellar tumor was suspected and hydrocephalus was marked. Owing to the age of the child, it was not supposed that the cracked-pot sound could be obtained. The rigidity of all the muscles of the body was very marked, and there was total lack of cerebral development.

Dr. Carson, in closing, agreed with the speakers that it was only in cases of acquired hydrocephalus and extensive fracture of the skull that this sound could be elicited.

(To be continued.)

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EPIDEMIC CEREBRO-SPINAL MENINGITIS.

A Report of the Massachusetts State Board of Health.

The Massachusetts State Board of Health is to be congratulated on its recent publication concerning "Epidemic Cerebro-Spinal Meningitis and its Relation to Other Forms of Meningitis." The work has been done by Drs. Councilman, Mallory and Wright, who have had the best possible opportunity for studying the disease in its details, and whose names are a guarantee of the thoroughness of their investigation.

It is to be hoped that the precedent hereby established may be followed by other boards of health; for in such work we see the surest evidence of progress toward the dissemination of real knowledge, and a better understanding of the true significance of the epidemic diseases. A mere statistical report often carries little weight even to those primarily interested, whereas a monograph, prepared with all the scientific means now at our disposal, not only concentrates attention, but serves also as a distinct addition to our fund of practical knowledge.

For these reasons we welcome most cordially this contribution. It has in the first place the element of completeness. The disease is adequately discussed in its smallest details, and invaluable comparisons made, and differences emphasized between it and the numerous other forms of meningitis with which we are now familiar. As the writers say (Introductory, p. viii), "The confusion of medical terms by physicians, together with the fact that all returns made to the State authorities are copies of certificates, and not originals, and that these copies are in the majority of instances made by men who have little or no knowledge of the significance of medical terms, give to the information obtained in regard to this disease a great measure of uncertainty. This is peculiarly true of epidemic cerebro-spinal meningitis — a disease which is liable to be confounded with several other forms of brain disease, in consequence of the similarity in nomenclature of the terms employed to define such diseases."

The work is monographic in the true sense of the word; but in addition to a valuable historical sketch, and a discussion of opinions hitherto expressed, the writers have gone further and added greatly to our knowledge of the subject by a list of 111 cases, clinically and, more important, pathologically observed. Many new facts have been adduced; for example, the division of neuroglia cells under the influence of a toxic agent, and details regarding the habits and properties of the exciting organism of the affection, so that we may justly look upon this monograph as one of the most valuable contributions to scientific medicine which Massachusetts has made.

The volume consists of 178 pages and eight plates. It is not indexed, but has an adequate table of contents. The large subject-matter is excellently divided for ease of reference. Charts are introduced in the text wherever necessary and a table of post-mortem examinations, together with a map showing the distribution of the disease in Boston, as occurring in the late epidemic. Too much praise cannot be given the plates, which conclude the volume. They demonstrate, as nothing else could, excepting the microscope itself, the nature of the histological changes which underlie the clinical symptoms. The reproduction of the original drawings leaves nothing to be desired. We regret that the bibliography does not contain month and page references, but this, perhaps, is a refinement of criticism.

There can be but one opinion in regard to the publication of this monograph, and that is, that it is the best work for the public health that could possibly be done. In the presence of such an epidemic as we have had, and may have again, it is clearly the right of the public to know from the most reliable sources obtainable what the exact nature of the malady is, in order the better to provide against its ravages. No other method than the one chosen could give this knowledge.

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GASTRECTOMY.

The operation of the removal of the entire stomach, and anastomosis between the lower end of the esophagus and the duodenum has been for the first time successfully performed in this country by Dr. Charles Brooks Brigham, of San Francisco, and the account of the case is published in our present issue. As a surgical achievement this operation certainly takes rank as an operation of the first magnitude.

The fact that after the removal of the stomach, in animals of strong vitality the nutrition might be maintained by the compensatory over-activity of the intestines was demonstrated by Czerny in 1876, as noted in our editorial of January 6th last.

In 1895, Schuchardt, of Stettin, removed the entire stomach, except a very small portion at the cardiac end, and the patient lived a life of comfort and activity for two and a half years after the operation.

In September, 1897, Schlatter, of Zurich,[1] removed the entire stomach from a female patient, for cancer, and performed anastomosis between the esophagus and a loop of the upper portion of the jejunum, sewing up the divided distal end of the duodenum. The patient, as is noted by our Berlin correspondent, on page 433, is now well and strong.

The success of Schlatter's case has undoubtedly inspired with emulation surgeons in all parts of the world, and the case of Dr. Brigham is, so far as we can learn, the first successful result reported.

Dr. Brigham's operation differs from that performed by Schlatter in that he was able to unite the lower end of the esophagus directly with the cut end of the duodenum, thus saving time, an element which is of paramount importance in so extensive an operation, and one involving so great danger from surgical shock. The good judgment of Dr. Brigham in recognizing that his patient would not bear the more time-consuming method of anastomosis by suture, and resorting to the Murphy button, was amply vindicated by the result. The disadvantages of the button as compared with suture were recognized by Dr. Brigham, as he states in his paper, but they were outweighed by the paramount necessity of saving time, and were not sufficient to prevent success.

Dr. Brigham's case is of great interest, as showing that in certain cases it is possible to join the duodenum to the intestine without undue tension. In the not infrequent cases in which the duodenum is lower than the normal position this would probably be impossible, and the procedure adopted by Schlatter of uniting the lower end of the esophagus to a loop of jejunum would be the only resort.

It is interesting to note from Dr. Brigham's account that the constitution, mental disposition and previous habits of diet of the patient were most favorable to the success of the operation. Of a quiet disposition and simple tastes, accustomed since the loss of her teeth to a liquid diet, such as she must of a necessity subsist on for a time after the removal of the stomach, she presented an ideal subject for the operation, except for one circumstance, the thickness of her adipose layer. Even this, although it necessitated a longer incision, may not have been entirely a disadvantage, as it must have tended to enable her to withstand low diet better than would have been possible for a thin, cachectic patient.

It is impossible in this brief notice to allude to all the points of interest in matters of surgical technique, such as the fact mentioned that unless the left lobe of the liver were hypertrophied the operator would find plenty of room for manipulation in the subdiaphragmatic space, or to the physiological points with regard to diet, etc., which are illustrated in Dr. Brigham's careful account of his remarkably successful case.

A brief consideration, however, will justify the deduction that cases suited to the operation are rare. It is certainly an uncommon experience for a surgeon to meet with a case of cancer of the stomach in as good physical condition as was Dr. Brigham's case. The pale, thin, worn, cachectic victims of this disease are seldom in a condition to withstand so formidable an operative procedure. Even in this case the operator was compelled to hasten his operation by employing a method of anastomosis which he would not otherwise have chosen.

Schlatter and Brigham have shown, however, that there exists a certain (probably small) proportion of cases in which resort to this most radical surgical procedure may for a time at least rescue the patient.

The time (two and a half years) which Schuchardt's patient lived after the operation proves that the prolongation of life may be by no means inconsiderable.

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THE WAR AND MODERN SURGERY.

While we await with interest, and yet in the light of the recent brilliant victory at Manila, without apprehension, the prospect of a decisive naval battle in the near future, a few reflections naturally suggest themselves regarding the injuries which will be the inevitable result of a conflict between the ponderous fighting machines of modern navies, and the success with which they can be dealt with by modern surgical methods.

The day of smooth-bore guns and wooden ships having passed, we must expect to witness before long the fearful results of the bursting of shells hurled by rifled guns against ships of steel. It seems inevitable that the proportion of severe and fatal injuries will be greater than before, and that minor casualties will be fewer. The crushing and shattering of the head and trunk by flying pieces of shell, or steel torn from the decks or machinery by the missiles striking a modern warship, will result in no trifling injuries, and may prove, not unlikely, that either death or entire escape will be the rule. We remember well how in the battle of the Yalu River, on board the Japanese cruiser *Matsushima*, thirty persons were killed and seventy injured by the bursting of a single ten-inch shell, which hit and exploded some ammunition, and how ten men were killed and injured by the flying fragments of the funnel of the *Fuso*, which was perforated by a shell.

The most fearful possibility, however, as we have reason to remember from the fate of the *Maine*, is the sinking of a ship by a mine or torpedo. More men were lost to the American navy by the sinking of the *Maine* than were killed outright in the Japanese navy during the two principal engagements of the Chino-Japanese War, the battle of the Yalu and the attack on the Pescadores Islands. The other naval battles of the war resulted in no fatalities on the Japanese side.

As against the terrible possibilities for injury in modern naval warfare, we may set the increased facility for dealing with wounds afforded by modern surgical science. Injuries to the head and the abdomen which a few years ago would have proved inevitably fatal, may now in many instances be successfully dealt with. Hospital gangrene has become a thing of the past, and the majority of septic complications of wounds and compound fractures may, we hope, be avoided by the skill of our naval surgeons, aided by their knowledge of modern methods and their thorough equipment.

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[1] Medical Record, December, 1897.

The facilities afforded by the hospital ship *Solace*, which has been equipped for our navy, ought to prove effective in saving many limbs and lives in case of a severe engagement. The accommodations afforded will make a favorable contrast to the crowded and insufficient quarters in the "sick bay" in a man-of-war.

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MEDICAL NOTES.

Plague Reported in Calcutta. — The plague is reported to have appeared in Calcutta. The persistence of the disease in India is exciting apprehension lest it reach Egypt by way of Mecca.

The Protection of Infant-Life. — The Society for the Protection of Infant-Life in Paris recently held its annual meeting. In 1897, 3,947 children were succored and protected, representing an outlay of $6,580.

Dr. Finney Appointed Surgeon to the Maryland National Guard. — Dr. J. T. M. Finney, associate professor of surgery in the Johns Hopkins Hospital, has been commissioned chief surgeon of the first brigade, Maryland National Guard, with the rank of colonel. He succeeds Dr. Robert W. Johnson.

Epileptic Colony for New Jersey. — A bill is before the New Jersey Legislature for the establishment of an epileptic colony. The commission of inquiry which recommended the bill stated that there are at the lowest estimate two thousand epileptics in insane asylums and almshouses throughout the State.

Acting Assistant Surgeons. — Over eight hundred medical men have offered their services to the army authorities and more than a thousand to the naval medical department. These are by no means all young men or recent graduates, for many offers have been received from men who saw service in the Civil War.

Wakes as a Source of Infection. — A chimney-sweep in Govan, Scotland, was charged in court with having permitted the body of his mother to be "waked," she having died of typhoid fever. The sanitary authorities had been officially notified of the woman's death, and two officials had warned the defendant that he would be prosecuted if a wake should be held, since it would be illegal under the new Health Act of Scotland. They revisited the house after midnight, and found eight men, nine women and two children in the room with the body. The wake was continued till nearly morning. The bailie imposed a fine of one guinea, with alternative of a fortnight's imprisonment.

BOSTON.

Suffolk District Medical Society. — At the Annual Meeting of the Suffolk District Medical Society held on April 30th the following officers were elected: President, Francis H. Brown; Vice-President, Herbert L. Burrell; Secretary, John Dane; Treasurer, Augustus S. Knight; Librarian, B. Joy Jeffries.

NEW YORK.

A New Home for Consumptives. — The new home for consumptives, a branch of the Loomis Sanitarium at Liberty, Sullivan County, was formally opened on April 26th, addresses being made by Bishop Potter, Dr. Stubbert, chief physician of the Liberty Sanitarium, and Drs. Miller and Chappelle. The home occupies two houses in West 49th Street, and is designed particularly for incurable cases, the curable cases being sent to the country institution. The first patients were received eight days before the formal opening, and during these eight days three deaths occurred. One of the houses is to be reserved exclusively for free patients, and the other will be occupied by those able to pay something for private rooms.

The International Health Exposition. — The International Health Exposition, at the Grand Central Palace, was opened on April 25th with an address by Lieut.-Governor Timothy L. Woodruff, the Hon. Andrew H. Green presiding. The exhibition is designed for the demonstration of everything that has to do with preventive medicine, hygiene and public sanitation, and the various departments include domestic sanitation, municipal hygiene, naval and military hospital administration, food products, health resorts and sanitariums, hygienic literature, sanitary organizations, etc. A special exhibit of great interest is made by the trained nurses of various hospitals, who vie with each other in presenting the most admirable rooms and wards fitted up for different medical and surgical purposes; and in connection with the exhibit is a collection of dolls costumed in the dresses worn by the nurses of almost every large hospital in the country. The different State Hospitals for the Insane also make an excellent showing, and in their exhibit, which is illustrated by a large number of photographs, the modern methods of treatment of the insane are pleasantly contrasted with the ancient. Mr. Charles F. Wingate, sanitary engineer, is the supervising director of the exposition, which is to remain open until the end of May.

A Surgeon in Active Practice. — Dr. Gormley, a resident surgeon of St. Mary's Hospital, Brooklyn, recently gave a practical demonstration of the utility of an athletic training in college. While going to the relief of a man who was reported to be bleeding to death from the kick of a vicious horse, a wheel of the ambulance in which he was riding was snapped off by a rut. The distance from the scene of the accident was a mile, and there was no street-car accessible; so the plucky young surgeon, seizing his instruments, started to sprint at a six-minute gait, and had the satisfaction of arriving in time to save the patient's life. In a few minutes more the hemorrhage from the ruptured artery, which was caused by a compound fracture of the femur, would undoubtedly have proved fatal.

Death of Cornelius N. Hoagland, M.D. — Dr. Cornelius N. Hoagland died at his residence in Brooklyn on April 24th. He was born in Neshanic, Somerset County, N. J., on November 23, 1833. He entered Starling Medical College, O., in 1851, and three years afterwards was graduated from the Medical Department of the Western Reserve University at Cleveland. When the Civil War broke out he was residing at Troy, O., and became first lieutenant of the Lafayette Blues, an organization attached to the Eleventh Ohio Infantry. He remained in the army until the close of the war, and then engaged in mercantile business, in which he acquired a handsome fortune. He removed to Brooklyn in 1868. Dr. Hoagland was widely known as a philanthropist. About ten years ago he founded the Hoagland Laboratory, in connection with the Long Island College Hospital, and his gifts to that institution amounted in all to $184,000. Among his other benefactions were gifts of $30,000 to the Brooklyn Free Kindergarten Society and $14,000 to the Brooklyn Eye and Ear Hospital. He was President of the Board of Directors of the Hoagland Laboratory, Regent of the Long Island College Hospital, a Fellow of the Microscopical Society of London, and a Trustee of the Syracuse University, Antioch College, and a number of other institutions.

Correspondence.

[Special Correspondence.]

THE TWENTY-SEVENTH CONGRESS OF THE GERMAN SOCIETY OF SURGERY AT BERLIN, APRIL 13–16, 1898.

Masks and Gloves in Surgery. — Local Anesthesia. — Resections of the Stomach. — Intestinal Anastomosis. — Calot's Procedure in Pott's Disease. — Estander's Operation in Empyema. — Resection of the Liver. — Sero-Therapy in Diphtheria. — Inhuman Bullets, etc.

April 17, 1898.

The Congress was considered by all a decided success, and members or visitors who were present the first day did not fail to return to the after sessions. Professors of Surgery from all the universities in the German-speaking portion of Central Europe were the principal participators; and though some of them are no longer young, they showed by the attention which they gave to the rising generation that they were not too old to learn nor so imbued with ideas of their own infallibility that they were not willing to profit by the experiences and the hints of their younger brethren. Prominent at every session were such men as Esmarch, whom the daily papers pointed to with pride as being related to the reigning house in Prussia; Lieutenant-General von Coler, Chief Brigade-Physician of the German Army; Mikulicz, the introducer of gloves in operations; Professor Hahn, of Berlin, who was elected President of the Society for the coming year; Gussenbauer, Braman (of Halle); Helferich and many others; not to mention the President himself, Trendelenburg, who conducted the meeting, and in a masterly manner made himself a prime factor in the success of the Congress.

There was a distinct new feature introduced this year. They had always been bothered by the daily papers printing news of the Congress and quoting addresses, reported by men who were unable to understand what they were writing about; such reports were often so fantastic as to leave the original authors open to much unmerited ridicule. To remedy this, since it was impossible to get rid of the reporters, seven of the younger members generously undertook to furnish the papers with accounts of each day's session. The account usually gave very little more than the mere title of the address; but it satisfied the public as to what the doctors were doing, and when something interesting to the general public was discussed details were given more completely.

The scientific part of the proceedings was opened by Professor Mikulicz (Breslau), who had something new as an aid to final asepsis. It was a mask made of gauze to be worn over the mouth and nose during operations, held in place by wires extending over the ears. He was induced to use it after a series of experiments made, standing before agar plates, while talking, coughing and sneezing. He said, that, like the gloves, the surgeon would soon consider such an arrangement indispensable. The discussion of this first morning was devoted to asepsis, and was principally taken up with gloves. All sorts and varieties were exhibited and advocated by different men, and objections were found to all. Some were too thick and interfered with the surgeon's touch, as Wölfler's first rubber gloves; others were too thin and might be torn; a third pattern was permeable, allowing bacteria to permeate it; and a fourth, exhibited by Dr. Perthes (Leipsic) seemed ideal, but was too costly. These last were made of silk and rubber. Mikulicz said that he was now using cloth gloves rendered impermeable, and Wolfler (Prague), who introduced rubber gloves, advocated buckskin gloves soaked in zylol, with the figures cut off and replaced by thin rubber finger slips. The majority of members seemed to think that gloves were now an essential and all acknowledged their usefulness under given circumstances.

In the discussion on local anesthesia Schleich's solutions were recognized as the most serviceable so far introduced to the profession, but there was general acknowledgment that there was room for advance.

On the subject of resection of the stomach and intestines much that was interesting was advanced. Professor Krönlein (Zurich) detailed again the now famous case of total extirpation of the stomach done by his assistant Dr. Schlatter. He announced that the patient was perfectly healthy, capable of taking nourishment like any ordinary individual, with no apparent impairment of digestion.

Following this, Dr. Schuchardt (Stettin) described a case of almost total extirpation in which they had been surprised to find no disturbance of digestion. After two years the patient died of pleurisy and the post-mortem revealed complete regeneration of the stomach. The speaker exhibited the specimen of the regenerated stomach, which would have been difficult to distinguish from a normal organ.

Dr. Loebker gave the details of a case where the operator thought he had done a total extirpation, but the patient dying after three days, it was discovered that the greater part of the stomach still remained. The operator had removed the lower half of an hour-glass contracted stomach; but Professor Kronlein insisted that no such accident had happened in the Zurich case.

Dr. Doyen (Paris) exhibited something new in the technique of stomach and intestinal operations. Before cutting into either organ he crushes its wall by means of a large clamp, such as gynecologists use on the broad ligament. He claimed that the operator had no difficulty with hemorrhage, nor were the intestinal contents so liable to contaminate the wound.

Discussing the best means of intestinal anastamosis, the Murphy button, the Frank coupler, and Wölfler's modification of the latter were mentioned. The Frank coupler was yet too little known to occupy a very prominent place; but the statistics from Czerny's clinic as well as others showed the firm foothold the Murphy button possessed.

For the treatment of Pott's disease Calot's was recognized as the procedure *par excellence*. Professor Hoffa (Würzburg) gave the following contraindications: (1) very long-standing deformity, (2) the involvement of many vertebræ in the kyphosis, (3) purulent collections at the seat of the disease. He said that on making extension (without anesthetization) if at least a part of the prominence did not disappear, it was useless to attempt the procedure.

In old empyema cases every one advocated the resection of all that part of the chest wall enclosing it; smaller resections were worse than useless. Professor Jordan's (Heidelberg) statistics of 23 cases gave nine complete recoveries, six practically complete recoveries, with only a very small fistula remaining, and four deaths; the other cases being still under treatment. A boy, eleven years old, on whom the operation had been done five years before, and five ribs resected, showed complete regeneration of the removed ribs. The general discussion brought out cases where various numbers of ribs, and at all lengths, had been successfully resected. The specimens of one case which died twenty-two hours later were presented where the operator, Dr. Gerulanos (Greifswald), had for sarcoma in a child extirpated the entire right chest wall.

On the surgery of the liver and bile passages, the most interesting case was that of Dr. Holländer (Berlin) in which a short time ago he resected the gall-bladder and a large portion of the liver for malignant disease. So far the patient has done very well. Hemorrhage from the liver was controlled by hot air. He demonstrated a very simple apparatus designed for this purpose.

The employment of serum-therapy in diphtheria had no opposers. Professor Krönlein (Zurich) presented his own statistics and those of the Canton Zurich and no one doubted the story they told. Since serum came in in 1894 the mortality of diphtheria in the clinic has fallen from 39 per cent. to 12 per cent., and in the Canton Zurich from 17 per cent. to less than 8 per cent.

Professor Bruns (Tübingen) furnished material for the daily papers in an address on "Inhuman Bullets." The soldiers of the English colonial troops, during the late Indian war, filed away the ends of their bullets, with the effect that when they struck bone they splintered it in all directions, and soft tissues they tore holes in as if small cannon-balls had passed through. He demonstrated this effect on cadavers, specimens of which he exhibited. He appealed to the German delegation in the coming St. Petersburg convention to see that in case of war such bullets would be forbidden.

Some wonderful results were detailed by Dr. Doyen (Paris) in hemi-craniectomy on idiots and microcephalics; as well as in the location and extirpation of tumors of the brain.

In the discussion of radical operations for cancer of the face, Dr. Grosse (Halle) exhibited a patient perfectly cured, operated on five years ago. They had removed the superior maxillary and malar bones, the eye and ear, had chiselled away parts of the orbit, and of the petrous portion of the temporal bone as deep as the tympanum. The result, even cosmetically, was excellent.

Dr. Küttner (Tübingen) detailed two cases of syphilitic struma operated on, because diagnosed malignant struma. Microscopical examination of the tumors and after symptoms made the diagnosis clear.

Two specimens of Röntgen-ray photographs were shown by Dr. Sprengel (Braunschweig) where coxitis had been diagnosed from the symptoms and skiagraphs, but which post-mortem proved to be separation of the epiphyseal head. Dr. Hofmeister (Tübingen) exhibited a number of skiagraphs of a single normal pelvis where a dozen abnormal conditions had been prettily produced by moving the patient, the light, or both.

Professor Dührrsen (Berlin) advocated the employment of steam to control hemorrhage. He had found it particularly efficient in controlling excessive menstruation.

[Special Correspondence.]

THE GERMAN CONGRESS FOR INTERNAL MEDICINE.

WIESBADEN, April 18, 1898.

THE CLINICAL TEACHING OF MEDICINE. — THERAPY OF CHLOROSIS. — BLOOD PLAQUES. A NEW FORM OF NUCLEATED RED BLOOD CELL. — TREATMENT OF DIABETES. — PSEUDO-URIC (UROTIC) ACID. — AUTO-INTOXICATION. — THE NEURON THEORY. — THE ETIOLOGY OF TABES. — NOVELTIES IN BACTERIOLOGY.

ON the first day of the Congress Professor Ziemssen, of Munich, and Professor von Jaksch, of Prague, read, by invitation, papers on "The Clinical Teaching of Medicine." The discussion was shared in by Professors Schulze of Bonn, Quincke of Kiel, Hoffman of Leipzig, Jurgensen of Tübingen, Moritz of Munich, and Schmidt of Frankfort. Surely one would think some light must shine through the interesting but cloudy question from such a galaxy as this; but while all are agreed that reforms are needed, there is very little agreement as to more than the general direction the reforms should take.

Professor von Ziemssen asks that another semester be added to the German medical course, making it full five years; it is now nine semesters, four and a half years, though, of course, half a year of compulsory military service must find a place in it. Professor von Jaksch would add two semesters, though the course in Austria is already ten semesters long. The extra two semesters he would gain for medicine by omitting the last year of the gymnasium training, and making it a proseminar at the university, a preliminary year spent at the natural sciences in direct preparation for medicine. This question of invading the sacred institution of the gymnasium with its nine years' course is looked on as a cardinal heresy in Germany and met with no favor.

It was agreed on all sides that more practical work must be done, that more laboratory work must be required, that dispensaries must be used more for teaching purposes, and that practical, physical, therapeutic methods — hydrotherapy, movement therapy, massage, inhalation therapy, electro therapy — must receive more attention than they have had. Most of the *dissentants* leaned to Ziemssen's opinion that a year of hospital experience (or at least half a year) in which the young doctor should have the duties and responsibilities of practice should be required before permission to practise independently is given. These additional requirements will decrease the number of medical students, but that is not an uncompensated evil, as a better class of men will enter the profession, the cry of overcrowding will cease, and more serious consideration will be taken before entering on a profession that requires so much time for preparation.

In the discussion of the therapy of chlorosis the question of venesection, which has been lately proposed for it, did not meet with the disapproval that might be expected in a disease whose main symptom is what the Germans call *Blut armuth* (blood poverty). Sweating and hot baths were dwelt on as two of the most successful therapeutic methods in obstinate cases.

Blood plaques Dr. Determan demonstrated to be the result of the disintegration of red blood-cells, and so their presence in large numbers, while not pathognomonic of any disease, showed a lack of vital resistance in the red blood-corpuscles, which indicated a serious blood condition. They were to be found in pathological blood conditions, where other morphological changes did not take place so that they formed an important clinical symptom.

Dr. Engel of Berlin (Hertwig and Virchow's laboratories) described a new form of nucleated red blood-cell occurring in embryonic blood, reacting differently to the others to the triacid stain. It occurred also in pernicious anemia and substantiated Ehrlich's theory, that progressive pernicious anemia was a true reversion to embryonic types, and so malignant in character. Where the new red cell (a metrocyte) occurs, the prognosis is the worst possible.

As to the treatment of diabetes two things look promising and progressive. Minkowski reported that, in dogs rendered artificially diabetic by the removal of the pancreas, the feeding with pancreas extract gave good results. Von Leube of Würzburg has been trying this on diabetic patients, with encouraging results. Von Jaksch of Prague has been experimenting with various of the carbohydrate series in order to discover whether there may not be one which the system will metabolize, though it has lost its faculty for the consumption of grape sugar. He has found that patients (diabetics) assimilate arabinose, a methylpentose, very well, and is going to continue his experiments.

The question of the possibility of the introduction of sugar into the circulation directly and its fate brought out in the discussion the fact that a number of prominent clinics are doing work in subcutaneous alimentation. Von Leube thinks that olive oil may now be considered as beyond the experimental stage, as a subcutaneous nutritive material. In von Leyden's clinic there are other things that have been used and with success; but subsequent infiltration and discomfort for the patient have deterred them from further experiment.

Professor Minkowski of Strassburg described a new nitrogenous compound which he has found in the urine of dogs fed on thymus. It is a pseudo uric acid, so closely does it resemble that compound, and Minkowski considers it to be a stage of the ordinary production of uric acid in the system, that for some special reason is excreted before metabolic processes are completed, when thymus extract is taken. Its study then may elucidate the production of uric acid from nuclein in human beings. He gives it the name "urotic acid."

As to auto-intoxication, another of the subjects for discussion selected beforehand, Professor Müller's (Marburg) and Brieger's (Berlin) papers brought out the difference of opinion that exists between the German and the French schools on the question. The invasion of bacteria from the intestinal canal, as Bouchard and Charrin have taught it, as the etiology of pneumonia, meningitis, and even of late of diphtheria, the Germans do not accept. For them the healthy intestinal mucous membrane is impervious to bacteria. The question of auto-intoxication they consider very important, but it is a chemical not a bacterial question. Ptomaines and leucomaines are responsible for the systemic symptoms not the bacteria.

As to the value of the urotoxic coefficient of which so much has been written as the index of blood toxicity, the method with animal injections was considered by all the dissentants as absolutely untrustworthy. Only the direct chemical demonstration of the toxins in the urine, as Brieger and Ewald do, was thought of *scientific* value.

Professor Gad, of Prague, spoke of the latest developments of the neuron theory. With Professor Kolliker's teaching as to the comparative unimportance of the protoplasmic processes of the nerve cells for conductive purposes, he seems to have very little sympathy. He referred to some recent work of Professor Porter of Boston on the phrenic neuron. Professor Porter found that if the cord be semi-transversely divided above the level of the spinal centre for the phrenic nerve, the corresponding half of the diaphragm ceases to move; if now the phrenic nerve on the other side be divided, the diaphragm on that side stops, but the other half resumes its movements as before the cord section. Professor Porter's hypothesis for the explanation of the phenomenon, which includes conduction through protoplasmic processes, Professor Gad considers a very interesting and also very probable one. Nervous impulses are shunted, as it were, when the resistance to the conduction of nerve energy is increased by the section, through a protoplasmic process connecting the two cells, but which before did not conduct impulses owing to its inherent resistance. Professor Gad has repeated Professor Porter's experiments, and by longitudinal incision so narrowed the space across which the processes from one side of the cord to the other must pass that he now knows it is not more than four millimetres (one-tenth of an inch) above the origin of the phrenic roots. The new ideas contained in this paper were enthusiastically greeted.

Professor Edinger, of Frankfort, demonstrated the spinal cords of some rats, in which, by overwork when the animals were in a run-down condition, he had been able to artificially produce *tabes-like* degenerations in the posterior columns of the cord. He considers that this makes clear the etiology of tabes. It is a degeneration from overwork when nerve cells are in a lowered stage of vital resistance, either from anemia, the presence of toxins in the blood, or a naturally lowered vitality, as from heredity. He thinks too that this points out the principal indications for treatment and prophylaxis. A carefully-regulated life is necessary for people disposed by syphilis to tabes, and no abuse of the movement-therapy now so popular, if harm is not to be done and a rapid advance of the disease brought about.

Two things were of interest in bacteriology. Kühnau, of Breslau, pointed out the pathogeneity of certain proteus forms, especially in affections of the mucous membranes. He considers them responsible for the gangrenous forms of pharyngitis and tonsillitis that occur, and for certain severe dysenteric and cystitic conditions.

Petruschky, of Dantzig, demonstrated a streptothrix which he has found now for the second time to be pathogenic for human beings and his observations were confirmed by von Ziemssen, who has found the same parasite in the sputum of lung cases running an unusual clinical course, and he too considers it pathogenic in these cases.

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LOST AND FOUND: A SPONGE IN A QUEER PLACE.

Boston, May 2, 1898.

Mr. Editor: — On April 25th, with my assistants, Drs. Pease and Manahan, I removed a cancerous fibroid uterus and two dermoid ovaries. The operation was tedious, difficult and severe: in the course of it, we used one hundred sponges, each sponge being about four inches by three, and made of ordinary gauze. On making a sponge count only ninety-nine sponges could be found. We searched the room and the patient's abdomen over and over, and at length gave it up. Immediately after this operation we drove to the Union Station in a hack; and while in the carriage Dr. Manahan happened to turn his foot up, and there, stuck to the bottom of his instep, just in front of his boot heel, was the bloody sponge.

I had thrown it on the floor, in order that it might not get mixed up with the aseptic sponges after wiping the cervical canal with it. This shows that it will be important in future to look at the soles of our boots when unable to find all the sponges we have used, and also that we should be careful to put all sponges into a basin or pail and not throw them upon the floor.

Very truly yours, John Homans, M.D.

METEOROLOGICAL RECORD

For the week ending April 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..17	29.79	60	72	48	46	36	41	W.	W.	9	8	C.	C.	
M..18	30.00	53	62	44	62	49	50	N.W.	N.	14	20	O.	C.	.01
T ..19	30.20	44	52	37	38	100	69	S.W.	S.E.	5	11	O.	R.	.07
W..20	29.77	43	48	38	96	91	94	N.E.	S.E.	8	6	O.	O.	.57
T ..21	29.77	48	55	40	70	61	66	W.	W.	11	12	C.	C.	
F...22	30.04	52	62	43	53	44	48	N.W.	S.W.	12	6	F.	F.	
S...23	29.94	51	57	45	90	96	93	S.W.	N.E.	5	10	R.	R.	.14
☞														.79

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 23, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	3,438,899	1171	439	10.08	17.76	1.12	3.60	1.92
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	445	133	9.20	13.11	1.15	3.22	1.61
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	189	35	5.27	26.50	.53	2.12	1.06
Baltimore . .	550,000	229	101	7.48	17.60	.44	2.20	.88
Boston . . .	517,732	219	66	8.74	16.56	—	3.22	.92
Cincinnati . .	405,000	126	—	5.53	22.33	—	.79	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	91	34	14.17	18.53	4.36	—	3.27
Washington .	277,000	105	18	11.52	8.64	2.18	2.18	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	49	19	15.78	31.56	—	—	—
Nashville . .	87,754	21	0	—	19.04	—	—	—
Fall River . .	95,919	33	15	12.12	15.15	12.12	—	—
Lowell . . .	87,193	35	6	2.86	25.74	—	2.86	—
Cambridge . .	86,812	23	10	17.40	8.70	—	—	—
Lynn	65,220	22	6	—	8.30	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	23	9	17.40	8.70	—	—	—
Lawrence . .	55,510	13	6	—	15.38	—	—	—
Springfield . .	54,790	19	5	—	15.78	—	—	—
Holyoke . . .	42,364	16	3	12.50	—	12.50	—	—
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	11	3	—	9.09	—	—	—
Brockton . .	35,853	12	1	—	8.33	—	—	—
Malden . . .	32,894	11	1	—	9.09	—	—	—
Chelsea . . .	32,716	16	6	—	12.50	—	—	—
Haverhill . .	31,406	12	2	—	16.66	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	8	4	—	50.00	—	—	—
Fitchburg . .	28,392	8	2	—	25.00	—	—	—
Taunton . . .	27,812	8	1	—	61.50	—	—	—
Quincy . . .	22,562	—	—	—	—	—	—	—
Pittsfield . .	21,891	2	0	—	50.00	—	—	—
Waltham . .	21,812	7	0	—	14.28	—	—	—
Everett . . .	21,575	—	—	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	4	0	—	25.00	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 3,024; under five years of age 1,018; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 260, acute lung diseases 427, consumption 321, diphtheria and croup 80, measles 40, diarrheal diseases 35, whooping-cough 32, typhoid fever 27, scarlet fever 21, cerebrospinal meningitis 20, erysipelas 5.

From whooping-cough New York 16, Philadelphia 5, Cincinnati and Cambridge 3 each, Boston and Worcester 2 each, Baltimore 1. From typhoid fever Philadelphia and Pittsburg 6 each, Baltimore 5, Washington 4, Boston 3, New York 2. From scarlet fever New York 16, Philadelphia 2, St. Louis, Baltimore and Cambridge 1 each. From erysipelas New York 3, Philadelphia and Washington 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending April 16th, the death-rate was 19.5. Deaths reported 4,201; acute diseases of the respiratory organs (London) 305, measles 219, whooping-cough 114, diphtheria 70, scarlet fever 33, fever 29, diarrhea 22, small-pox (London) 1.

The death-rates ranged from 12.5 in Preston to 27.5 in Liverpool; Birmingham 18.1, Bolton 14.0, Bradford 21.4, Cardiff 16.7, Derby 18.4, Gateshead 25.6, Hull 19.3, Leeds 22 0, Leicester 24 2, London 19.1, Manchester 22.0, Newcastle-on-Tyne 26.0, Nottingham 16.1, Oldham 24.6, Sheffield 16.5, Sunderland 18.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 23, 1898, TO ARPIL 29, 1898.

CAPTAIN LEONARD WOOD, assistant surgeon, is relieved from duty in this city, Washington, D. C., and will proceed to the following named places, in the order designated, for duty in connection with the recruitment of a regiment of mounted riflemen, to be organized under Section 7 of the Act of Congress approved April 22, 1898: Guthrie, O. T., Santa Fé, N. M., Phœnix, A. T., Carson City, Nev., Salt Lake City, Utah, Cheyenne, Wyo., Boise City, Idaho.

MAJOR WILLIAM C. SHANNON, surgeon, having been found by an Army Retiring Board incapacitated for active service on account of disability incident to the service, his retirement from active service, this date, by the President, is announced, April 23, 1898.

FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, is retired from active service, as a Captain, upon the finding of an examining board that he is disqualified for the duties of assistant surgeon with the rank of Captain, by reason of disability incident to the service, to date from April 20, 1898.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING APRIL 28, 1898.

IRWIN, FAIRFAX, surgeon. To proceed to Reedy Island Quarantine as inspector. April 26, 1898.

CARTER, H. R., surgeon. To assume command of Camp Fontainebleau, Miss., in addition to other duties. April 25, 1898.

BROOKS, S. D., passed assistant surgeon. To proceed to Port Townsend, Wash., and inspect unserviceable property. April 18, 1898. To represent Service at meeting of Washington State Medical Society at Seattle, Wash., May 10-12, 1898. April 18, 1898.

MAGRUDER, G. M., passed assistant surgeon. To proceed to Little Rock, Ark., for special temporary duty. April 23, 1898.

GEDDINGS, H. D., passed assistant surgeon. To proceed to Egmont Key, Fla., for special temporary duty and then to proceed to Tampa, Fla., and await orders. April 23, 1898.

WERTENBAKER, C. P., passed assistant surgeon. To proceed to Columbia, S. C., for special temporary duty. April 23, 1898. Upon completion of duty at Columbia, S. C., to proceed to Sumter, S. C., for special temporary duty. April 28, 1898.

TABB, S. R., assistant surgeon. Granted extension of leave of absence for one day. April 15, 1898.

HASTINGS, HILL, assistant surgeon. To report at Bureau for special temporary duty. April 20, 1898.

THE AMERICAN MEDICAL ASSOCIATION.

DENVER MEETING, JUNE 7-10, 1898.

Railroad Rates: The Western Passenger Association has granted a rate to Denver and return of one-half fare, plus $2.00, thirty-day limit, for business from Chicago, St. Louis and intermediate points. Tickets on sale June 2d, 4th and 5th, east of the Missouri River; 5th and 6th west of the Missouri River. A round trip rate of $20.00, thirty-day limit, from Ogden and Salt Lake, is also announced. Application for similar rates has been made to all other Passenger Associations and to railroads not controlled by them. Announcement of other rates and rules governing the sale of tickets will be made in *The Journal of the Association* as soon as decisions are received.

CORRECTION.

In the report of the proceedings of the Surgical Section of the Suffolk District Medical Society published in the JOURNAL of April 28th, p. 399, by inadvertence it was not stated that the communication on the "Sterilization of Catgut" read by Dr. R. M. Pearce was written and sent by Dr. Charles Harrington, who was unable to be present.

PAUL THORNDIKE, M.D., *Secretary, Surgical Section.*

BOOKS AND PAMPHLETS RECEIVED.

Faulty Metabolism; Nutrition and Growth. By W. A. Walker, M.D., New York. Reprint. 1898.

Some Remarks and Reports upon Specimens in Abdominal Surgery. By H. O. Walker, M.D., Detroit, Mich. Reprint.

Fifteenth Annual Report of the Superintendent of Health of the City of Providence, for the Year ending December 31, 1897.

Massage, Movements and Bandaging in the Treatment of Displaced Semilunar Cartilages. By Douglas Graham, M.D., Boston, Mass. Reprint. 1896.

Diabetes Mellitus and its Treatment. By R. T. Williamson, M.D. (Lond.), M.R.C.P., Medical Registrar, Manchester Royal Infirmary; Hon. Medical Officer, Pendleton Dispensary (Salford Royal Hospital); Assistant to the Professor of Medicine, Owens College, Manchester. With 18 illustrations (two colored). Edinburgh and London: Young J. Pentland. 1898.

The Genesis and Dissolution of the Faculty of Speech, a Clinical and Psychological Study of Aphasia. By Joseph Collins, M.D., Professor of Diseases of the Mind and Nervous System in the New York Post-Graduate Medical School; Neurologist to the New York City Hospital, to the St. John's Guild Free Hospital for Children and to the Post-Graduate Hospital, etc. Awarded the Alvarenga Prize of the College of Physicians of Philadelphia, 1897. New York: The MacMillan Co. 1898.

Original Articles.

THE CAMBRIDGE MILK-SUPPLY.[1]

BY FRANK A. DUNBAR, M.D., CAMBRIDGE, MASS.,
Inspector of Milk.

The milk-supply of Cambridge comes, like that of all large cities, chiefly from a distance; a small fraction of it is raised either within the city limits, or so near by that it can be delivered to customers within a few hours of the time of milking; another small portion, perhaps one-quarter of the total amount, is collected from the farms within ten or twelve miles of the city, and brought in by teams every day; all the rest of the supply comes over the railroads, and is collected from points distant all the way from ten to over one hundred miles. The milk cars start very early in the morning, collect the milk left on the platforms of the various stations, mostly in eight-quart cans, where it has been teamed from the farms, and get into the city about ten or eleven o'clock, some as late as one o'clock. The milkmen, the majority of whom get their milk from this source, meet these cars upon their arrival, take whatever number of cans they think they will use, leaving in exchange the empty and unwashed cans received full of milk the day before, which are then, still unwashed, sent back to the different farmers from whom they were received.

This milk is then carted home by the milkman, put up for his customer either in small cans or glass jars, and delivered the next morning. It is easy to see that when received by the customers this milk is from thirty-six to forty-eight hours old; it is twenty-four hours since it was picked up by the milk-car at the country station, and at that time the freshest was that milked the previous evening, the rest was the milk of the previous morning. In some near-by farms the same morning's milk is delivered, in which case the oldest is that of the previous evening. The milkman after getting his load of milk home to his stable, proceeds to mix the contents of the different cans together in a large tank called a milk-cooler, or to be more accurate he mixes together all the night's milk and all the morning's milk, so that he can give his most particular customers that which is freshest, and from this tank fills the various cans and jars which are to be delivered to the customers. Owing to the fact that the milk as received from the farms is of different degrees of richness, some being of standard quality, some above and some below the standard, and probably no two cans of the original load being exactly the same, the milkman feels it to be unsafe to sell his load without first mixing it together. This mixing is an extremely good method for the milkman to pursue in order to get a load of milk of standard quality, the sale of which will not render him liable to prosecution; but, of course, if one can has become contaminated with any disease germs it will contaminate the whole load. It is during this mixing process that the milkman practices any adulterations he may think prudent, in order to increase his profits or satisfy his customers. This last may seem a curious reason, but the complaints of the milk-dealers were loud and bitter a few years ago when the practice of adding artificial coloring matter to milk was stopped; and men who I am sure were doing a perfectly straight business in other respects came to me and said their business was being ruined, and that it was impossible for them to satisfy their customers with milk of its ordinary white color; people had become accustomed to yellow milk, and thought it was watered when of its natural color. I was obliged to make several complaints against men who were selling milk that was perfectly good in other respects, before this practice was finally given up. The Boston Inspector had the same experience as mine. The other forms of adulteration are skimming, which is generally done by pouring off the top of the can into another vessel, before emptying its contents into the cooler, and watering; a little sugar and salt is then added to cover up the taste of the water, and in warm weather a small amount of some preservative, generally a preparation containing boracic acid, may be added as well, so as to prevent too rapid souring. I have never seen a sample of milk to which chalk or flour had been added, which is, I believe, one of the popular ideas. Watering, skimming, coloring and the addition of some preservative practically make up the list of adulterations; others which might be practised fortunately do not pay, so that is the end of them.

The standard for pure milk in this State, requires any given sample to contain not less than 13 per cent. of milk solids and 3.7 per cent. of fat, except during the months of April, May, June, July and August, when only 12 per cent. of milk solids and 3 per cent. of fat are required. Milk which it can be proved is exactly as given by the cow, if it does not come up to this standard, is considered as adulterated, and the man selling it is just as liable to a fine as if he had been seen to add water; the only difference would be that in the first case the judge would probably impose the minimum and in the other the maximum fine, quite a difference when the fine is from fifty to two hundred dollars for the first offence. Neither does it make any difference if the milkman can prove that the milk is in exactly the same condition and in the same unopened can in which he bought it; if it does not come up to the standard he is liable for it. At first sight such a law appears rather harsh, but when milk goes through so many hands, if intent or guilty knowledge had to be proved no conviction could ever be secured, and if the producer needed only to prove that a poor sample of milk was just as the cow gave it in order to escape conviction, we should soon have the average quality of milk reduced from 13 per cent. to 12 per cent. or 11 per cent.; it is just as easy to breed cows to give a large quantity of milk containing only 11 per cent. of solids as a smaller amount containing 13 per cent.; as a rule, an increase in the average quantity given by a cow means a decrease in the quality.

Under the present system of purchase the farmer is paid so much a can — from 20 cents to 24 cents — for whatever milk he raises, regardless of its quality so long as it comes up to the standard; so of course it is for his advantage to raise as large an amount as possible. Now the cows which give a large amount generally give it with a low percentage of solids, especially of fat, so that the dairies raising milk for the market are found with as large a percentage of such cows as possible; in other words, the farmer raises milk with as low a percentage of solids as he can sell, and then complains that the standard is too high, and that cows will not give milk of standard quality. In dairies which raise milk for creameries the method is different; there the farmer is paid for the amount of cream his milk will give, not for the quantity of milk; a large quantity is rather a disadvantage as it means just so much more of a load to haul, and here it is no uncommon thing to find milk with four per cent. and five per cent. of fat, often more. It would be, in my opinion, much better if milk for use as such were paid for in the same manner, and customers should then buy milk containing a certain percentage of fat, paying for it accordingly. A law requiring milk to contain the amount of fat claimed, would be no more difficult to enforce than is the present law.

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[1] Read before the Cambridge Society for Medical Improvement, January, 1898.

It may be of interest to see just what this present law requires. In the first place any one selling milk must first take out a license, costing fifty cents, which in the case of a milkman selling milk from a team must be renewed annually; the license number, together with the milkman's name and address, must also be plainly marked upon the outside of the wagon.

All milk offered for sale must contain not less than 13 per cent. of milk solids and 3.7 per cent. of fat, except during the summer, as before mentioned. Milk to which any foreign substance has been added, or milk which is the product of sick or diseased cows, is considered as adulterated; but the section forbidding the sale of milk from sick or diseased cows can hardly be enforced under ordinary circumstances.

The inspector or his assistant may get into any wagon or go into any place where milk is kept for sale and take samples for analysis, giving sealed samples in return if asked for them. If any sample so taken is found on analysis not to conform to the standard, a complaint may be entered against the man from whom it was taken. All that it is necessary to prove is that the milk was in the defendant's possession, was for sale, and did not conform to the standard. For a first offence the fine is from fifty to two hundred dollars; for a second offence, from one hundred to three hundred dollars, or imprisonment in the House of Correction for from thirty to sixty days; and for a third offence a fine of fifty dollars and imprisonment for from sixty to ninety days. There are similar penalties for the sale of skimmed milk unless sold from cans plainly marked "skimmed milk," and for refusing to give samples when they are called for, or in any way obstructing the inspector or his assistant.

There is no question but what this law has worked extremely well; at the time it was passed hardly one-third of the whole quantity of milk offered for sale would come up to the standard. About all of the poorer class of milkmen were selling milk to which from one-eighth to one-third of water had been added, together with a coloring matter made from either annotto or caramel, to give it a rich appearance, and a little sugar and salt to conceal the taste of the water; while the better class of milkmen did not hesitate to skim their milk and sell watered milk to such customers as they thought would take it. At present it is a rare thing to find a sample of certainly watered milk; out of 3,252 samples examined last year, only 350 fell below the standard and 254 of these contained over 12 per cent. of solids, equal to the summer standard.

I think this a very good showing as regards freedom from adulteration for a city milk-supply; but how is it as regards absolute purity and freedom from disease germs? That most of the milk offered for sale is far from clean, I am well aware, and any one can satisfy himself of this by letting a glass of milk stand a few hours and then looking at the sediment. The last few drops turned out will in nearly all cases be of a yellow or brown color from dirt, and this after the milkman has strained it before putting it up for his customers. I have found in the samples examined at one time and another, pieces of manure, animal and human hairs, epidermal scales, flies, bedbugs, and much dirt which I was unable to identify. The cow is innocent of this form of contamination, and it must be put down to the way in which the milk is handled after it leaves her.

To begin with, very few cows are ever brushed or groomed, and they consequently get themselves covered with all kinds of filth. No self-respecting milker is ever guilty of washing his hands previous to milking, while many wet their hands and the cows teats with milk to make milking easier; of course this dirty milk drips into the pail, while flakes of dirt get brushed or shaken off the cow into the same receptacle. We all know the favorite location of the ordinary farm well, close to the barn and privy, with many chances of contamination of the water. All the returned milk-cans, coated with sour milk, and the milk-pails, have to be washed in this water, and any water the farmer may feel inclined to add to the milk comes from the same source; also the cans when filled and ready for shipment are generally kept in the well, at any rate in warm weather. During transportation to the city milk-cans are not ordinarily opened; but on their arrival the milkman knocks the stopper out of each one and puts the can to his mouth to taste, so that he can refuse any the contents of which have already soured. On arrival at the milkman's premises the cans are all emptied into the milk cooler as before stated, and the contents are drawn off into the milkman's own jars or cans, which are distributed according to chance among his customers each day, that is, customer A gets to-day the jar which yesterday went to customer B's house, where perhaps some of the family are sick with diphtheria. The cans are, of course, washed every day but are never sterilized, neither does the milkman nor his assistant wash his hands previous to filling the cans with milk, though they get them pretty thoroughly wet with it before they are through. The whole system of handling milk seems to be most beautifully democratic, and carefully arranged to give every customer a chance to pick up any stray infection which may be floating around.

In contrast to this, the ordinary method of handling milk, I should like to describe a large milk-farm I saw in Newton a few weeks ago. This farm keeps 150 cows on the average, and sells about 1,500 quarts of milk a day. The barn is a large, light structure open from the floor to the roof, the floor divided up into rows of box-stalls each one containing a cow; the ground, covered with six inches of sand, and this covered with planing-mill chips, forms the floor of each stall. The chips are renewed every day, the sand about once in six weeks, and the manure is cleaned up just as soon as passed; the floor between the rows of stalls is of concrete, and the cows are fed upon this floor, which is watered and then swept up every day; the cows are groomed and look as clean as horses, while there is almost no smell of any kind in the barn, it is so airy and the ventilation is so good; each cow is brushed off before milking and each milker is required to wash his hands with soap and water; as soon as a cow is milked the pail is taken to the milk-room and emptied through muslin into a tank, from which the milk flows over a hollow metal cooler filled with cold brine, and collects at the bottom in another metal tank from which it is at once drawn into sterilized glass jars and is then ready for delivery to customers. During its passage over the cooler the temperature is reduced from about 90° to nearly 36°. This cooler must not be confounded with the ordinary milk-cooler before mentioned, which is quite a different thing. Milk handled in this way is as nearly clean as it can be made; the proprietor showed me the muslin strainer through which the milk of fifty cows had passed; it was scarcely soiled at all, and he remarked with some pride that a few days before a visitor had said that he had often seen as much dirt come from one cow's milk as this strainer had got from one hundred and fifty. There is nothing fancy about this milk farm; the buildings are not expensively built nor is it run in an expensive manner; no glass or silver-lined milk pails are used, nor do the milkers wear white duck uniforms when milking; but they, the cows, and the premises are kept clean, the milk is cooled and bottled as quickly as possible and with the least possible chance of contamination. That it is kept clean is shown by the fact that it keeps sweet; the proprietor told me that he had never had a quart of sour milk returned to him, and that the milk would keep sweet if left in the glass jars for a couple of days at the ordinary room temperature.

When one considers the origin of the city's milk-supply, it seems hardly possible that any legislation can be of much benefit. Any system of inspection of the farms would be very costly and also inefficient; there are about four hundred farms supplying this city, many of them outside of the State, while to be of any benefit whatever a weekly inspection would be necessary, and even then the chance of an inspector's discovering a case of infectious disease among a farmer's help or in his family would be very slight. Under our system it is directly against a farmer's interest to have a case of sickness discovered, for it means that his milk will be refused by the contractors and left on his hands, provided anything is done about it; and of course he will do all in his power to avoid such a calamity.

The system followed in Copenhagen is certainly much better; there a large milk firm, corresponding to our contractors, supplies the city and buys from the farmers, who are required by contract to notify the firm if any case of sickness occurs in their families or among their cattle. If they do this the firm continues to pay for the milk produced, though it is not used; but if they do not and the firm finds it out, the milk is at once shut off and all further payment refused.

The only way I can see to apply a similar method here would be for the city or State to require such a notification in case of sickness on the farm or among the persons subsequently handling the milk, paying any damage which such a notification might cause, and imposing heavy penalties in case it was not done. This would not give entire safety, as some of the cases of infection are caused by persons who do not consider themselves sick enough to require a physician, but it would doubtless reduce the danger.

In order to secure complete safety milk should be Pasteurized just before it is delivered to customers. I have recently tried a few experiments in Pasteurizing milk, with the following results: The largest number of germs found in un-Pasteurized milk was about 14,000,000 per cubic centimetre, the average number being about 2,000,000. The best results were obtained by heating to 165° to 170° F. for half an hour. After such an exposure about 150 to 250 colonies developed per cubic centimetre. If heated much above this point, the boiled taste became quite marked and the results were not much better, while in milk heated enough above this point to be more nearly sterilized the boiled taste became very noticeable. At not over 170° the taste is very slightly altered; those to whom I gave samples thought not enough so to be objectionable.

The thermal death-point of the typhoid bacillus is given by Sternberg as a ten-minute exposure to a temperature of 165°; while about the same degree of heat is said by the same author to be fatal to the diphtheria bacillus. The tubercle bacillus seems to have a greater resistance to heat; but according to experiments quoted by Sternberg, tuberculous material exposed to the above degree of heat and then injected into guinea-pigs does not cause infection. This would seem to show that milk accidentally contaminated with either of these organisms, if properly Pasteurized, becomes harmless, while I think all agree that it does not have the objectionable qualities of sterilized milk. When done on a large scale Pasteurization does not increase the price more than one or two cents a quart, so that milk which now sells for seven or eight cents a quart would cost if Pasteurized nine or ten, but whether the public is sufficiently alive to the danger of using raw milk to pay the extra price is a question I find it very hard to answer.

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A CASE OF MYASTHENIA PSEUDO-PARALYTICA GRAVIS (JOLLY) OR ASTHENIC BULBAR PARALYSIS (STRUMPELL).

BY MAX MAILHOUSE, PH.B., M.D., NEW HAVEN, CONN.,
Assistant in Neurology at the Vanderbilt Clinic, New York.

The patient, L. D., age two and three-fourths years, male, was brought to my office on July 13, 1897, by his mother, who had been referred by the family physician, Dr. H. Fleischner, for examination and treatment of the case.

The history, as given by the mother, was as follows: The child, previously healthy, seemed to suffer very much from the heat of the first week of July, and to this cause his parents attributed his illness. In answer to a question, it was also stated that he had had a mild diarrheal attack a few days prior to the appearance of the first symptoms. On or about July 6th it was noticed that the child was at times unable to hold his head up properly and that it was thrown or carried backwards. At other times his head was erect as usual. This condition lasted three or four days, and was unaccompanied by noticeable fever or vomiting, nor was there complaint of headache or other pain at this time or later. During this period also he seemed unable to masticate his food properly, stopping after a few attempts, and later beginning again, though still later he refused to try. There was some difficulty in swallowing, and there was a tendency for liquids to regurgitate through the nose, though such did not actually take place. At times his speech was affected so that he could not be readily understood, while at other times his speech was natural. Since the diarrheal attack he has been somewhat constipated. Micturition has been normal. He has not been confined to his bed at all up to the present time. Noting a day or two ago that his eyes were half-closed and that he seemed unable to smile, his parents grew alarmed and consulted the family physician, who referred the case to me.

Examination. — Family history good; other children, both older and younger, healthy. Patient well nourished, not anemic, and mental condition normal. Runs about the office. Heart, lungs and abdominal viscera normal so far as physical examination could determine. The first feature to strike the eye was the pronounced ptosis on both sides; and though it was incomplete, in a quiescent condition the lids both hung low and did not follow the upward movement of the eyeball on attempting to look at the ceiling. He could, however, raise them somewhat by a strong effort of the will. The other external ocular muscles were normal, and the pupils were equal and reacted to light and accommodation. It was stated, however, that he has been squinting at times. The face was expressionless, and he neither did nor could laugh or smile. The muscles employed in expressing the emotions seemed relaxed and paretic. His mother says he cannot laugh, and what worried her more than all else was the fact that he did not *smile.* Saliva ran from his mouth at times. Tongue clean, and protruded readily and straight. Lower lip hangs somewhat, and his mouth is at times half-open, but can be closed by an effort of the will only to relax again after a short time. Soft palate normal in position and movements. Voice good. Deep and superficial reflexes normal. No paralysis of the muscles of the extremities, nor any apparent weakness at present of the muscles moving the head upon the spine. After walking a short time he becomes unsteady on his legs, and after sitting awhile his body begins to sway so that he asks to lie down. Pulse 84, and of good quality. Temperature and respiration normal. No atrophies anywhere. Electrical examination unsatisfactory, owing to uneasiness of child.

Rest in bed in the recumbent posture was ordered, diet regulated, and strychnia with an intestinal antiseptic prescribed.

During the following days he improved to such an extent that on July 18th, when I called, I found that, notwithstanding stringent orders to the contrary, he was running about the house, seemingly as well as ever. There was no complaint except that his mother spoke of his very profuse perspiration.

On July 19th I was sent for, owing to a peculiar rolling of the eyes which came upon him; which condition had passed off, however, when I arrived. His mother said he seemed weaker to her, and she thought the heat had caused a relapse.

July 31st. Ptosis is gone, no strabismus, no drooling, can chew, swallow and can smile; pulse 84, temperature and respiration normal; runs about as he did before he was taken sick. His mother considers him well, and I was practically discharged.

On the evening of August 4th I was hurriedly summoned on account of a choking attack which came on during an attempt at swallowing, weakness of the neck muscles so that he could not hold his head up properly, and regurgitation of liquids through the nose. The mother stated that he was up and down from the lounge during the day, for the most part rather weary, however, and saliva again ran from his mouth. Upon my arrival all of these symptoms had disappeared, and he was lying upon the couch apparently comfortable. He swallowed liquids for me normally, told me his name, and walked for me.

On August 5th during the day he was up and down, drooling at times, and speech at times indistinct. In the afternoon he wanted to get up, and while sitting in his high chair attempting to drink coffee from a cup, a little difficulty in swallowing was noticed, his head drooped and he was dead.

At no time were there any respiratory disturbances. At every one of my visits I found the heart's action good. The difficulty in taking food was at first principally owing to fatigue of the muscles of mastication, later with those of deglutition. No autopsy could be obtained.

This case is very similar in course and symptomatology to that of Wheaton [1] recently reported, they having the following in common: ptosis on both sides, early difficulty in mastication and later difficulty in keeping the mouth closed, fatigue after brief use of the leg muscles, fatigue of the muscles supporting the head, next, disturbance in the muscles of deglutition, and lastly sudden death, though the manner of death varied in the two cases, being in the one a respiratory paralysis and in the other, my own case, a cardiac paralysis. The two cases varied in some of their minor features, the reflexes being normal in my own while exaggerated in Wheaton's case. In my own case, also, the lower facial group was markedly affected. Both cases, however, presented Erb's "Triad" of ptosis, weakness of the neck muscles, and weakness of the masticatory muscles. This symptom group, together with the involvement of the lower facial, the sudden weaknesses in the leg muscles, the remissions and at times apparent recovery, with absence of cerebral symptoms, sensory disturbances and atrophies, would place this case in my opinion with the so-called myasthenia pseudo-paralytica gravis (Jolly). I prefer, with Toby Cohn,[2] this nomenclature, for the reasons as thus stated by him: "Respecting the nomenclature of the complaint, the designations which pronounce upon the anatomical seat (bulbar paralysis without anatomical findings, polio-encephalo-myelitis, etc.) should all be laid aside, so long as nothing certain is known concerning it. The name myasthenia pseudo-paralytica gravis seems most appropriate because the exhaustability of the muscles, which simulates paralysis, is the principal symptom (Strümpell) and makes clear the whole clinical picture and course of the disease."

A few points in connection with the case here reported seem to me worthy of note. The duration o the disease was but thirty days, which is contrary t the usual chronic course of the majority of the case heretofore recorded. There are, however, a few similar acute or subacute cases in the literature. Wheaton' case died fifty-five days after the sudden onset. Fajersztaju's [3] case had been ill ten days before his admissio to the hospital, but was practically well in six weeks when he left, though the symptoms, such as ptosis could be brought out again after moderately prolonge exertion; the further history of this patient was unknown at the time it was reported, one year afte leaving hospital. The briefest case of which I ca find any record is that of Widal and Marinesco,[4] man, age thirty-one, who died fourteen days after sudden onset, with violent headache followed soo after with the typical symptoms and course of the disease. In the case of the girl reported by Wilks[5] the duration was a little more than a month. Wernicke's[6] case died suddenly in asphyxia on August 2d, two weeks after admission to the hospital, the symptoms having begun in the preceding spring.

The other cases hitherto reported were essentially chronic, one reported by Murri[7] having a duration of ten years. Of Erb's[8] three classic cases, one was stated as nearly cured at the end of ten months, the second died suddenly after one and a half years of remissions and exacerbations, while his third case, which entered the hospital with a history of illness of one year's duration, disappeared at the end of fourteen days, no further trace of the patient being obtainable. Silbermark's[9] case had been going on for six months when first seen, and at that time had the characteristic symptom-complex. Collin's[10] case had been going on three years before it came into his hands. Oppenheim's[11] case lasted one and a half years and had been going on nine months before he saw it. Hoppe's[12] case lasted a year, Eisenlohr's[12] was chronic, Karplus's[13] began at five years of age, and the patient was twenty-four years old when seen by him. Koshenikow's[14] first case died suddenly after six months or more of remissions, while his second case had been going on for six years when he first saw it. One of Brissaud and Lantzenberg's[15] cases had been ailing one and three-fourths years when first seen.

Next, and perhaps of greater interest, is the age of my patient, namely, two and three-fourths years, the nearest approach to it being Karplus's case, in whom the symptoms began at the age of five. This, however, was extremely chronic in its course, its duration being the longest on record. One of Koshenikow's cases was fifty-four years old when coming under observation, and is, together with one of Strümpell[16] (also aged fifty-four) the oldest reported.

The following table gives the number of cases on record in each decade of life, and stating the age at the time of onset of the symptoms:

First decade	2 cases
Second decade	4 cases
Third decade	3 cases
Fourth decade	5 cases
Fifth decade	5 cases
Sixth decade	2 cases

In two cases I was unable to ascertain the age of onset.

The acute and subacute cases have been, with very few exceptions, fatal. Those of Wheaton, Widal and Marinesco, Wilks, Wernicke and my own being striking examples. Of the chronic cases, one each of Erb's and Koshenikow's, and those of Eisenlohr, Hoppe and Oppenheim were fatal. Death in most cases occurred suddenly, and generally from asphyxia. The disease began in many cases with a condition of easily induced fatigue in the legs, arms or both, soon followed by ptosis on one or both sides. Headache was the first symptom in several cases; in three cases ptosis was the earliest symptom. Diplopia was also an early symptom in a large number of cases. The weakness of the muscles supplied by the nerves arising from the nuclei of the lower part of the bulb always came on later. The facial group was affected in one or more portions in three-fourths of the cases. Though fatigue of muscles supporting the head is included in Erb's "Triad," being present in all of his cases, and was the earliest and a noteworthy symptom in my case, I find that it was noted as present in but one-half of the cases.

Concerning the anatomical changes, Marinesco[17] reported at the International Congress at Moscow in 1897 that he had found in a case of asthenic bulbar paralysis, chromatolysis in the nerve cells of the medulla, with intact nucleus and achromatic substance.

In this connection it may be of interest to note the changes found in the cord in cases of Landry's paralysis, the course and symptomatology of which are very similar to those of the acute cases of the disease under consideration, allowance being made for the seat of the disease. Marinesco[17] also reported at the International Medical Congress at Moscow, concerning changes found in nerve cells in two cases of Landry's paralysis; besides softenings, vessel changes and increase of leucocytes, there were decay of the chromatophyl elements in the nerve cells; the nuclei of the cells had lost their contours and lay often on the periphery of the cells; the protoplasm continuations were at times swollen and disintegrated. Baily and Ewing[18] also reported on a case of Landry's paralysis the following findings: "Partial or complete absence of the chromophilic masses . . . in many cells the nuclear membrane was indistinct, irregular or granular, and the nucleolus fragmented or absent. . . . The fragmentation of cell processes was occasionally encountered."

BIBLIOGRAPHY.

1. Boston Medical and Surgical Journal, January 20, 1898.
2. Neurologisches Centralblatt, 1897, p. 707.
3. Loc. cit., 1897, p. 270; from Gazetta Lekarska, 1896, Nos. 13–15.
4. La Presse Médicale, April 14, 1897.
5. Guy's Hospital Reports, vol. xxii.
6. Neurologisches Centralblatt, 1897, p. 706.
7. Archiv. Italienne de Biol., 1896, tome xxv.
8. Archiv. für Psychiatrie, 1879, vol. ix, p. 336.
9. Wiener klin. Rundschau, 1895, Nos. 45 and 46.
10. International Medical Magazine, April, 1896.
11. Virchow's Archiv, Band cviii.
12. Berliner klinische Wochenschrift, 1892, p. 332.
13. Jahrbuch für Psychiatrie, 1897.
14. Deutsche Zeitschrift für Nervenheilkunde, 1896, Band ix.
15. Archiv. Général de Médecine, March, 1897.
16. Deutsche Zeitschrift für Nervenheilkunde, 1895, Band viii.
17. Neurologisches Centralblatt, August 21, 1897.
18. New York Medical Journal, July 4 and 11, 1896.

TWO CASES OF EXTRA-UTERINE PREGNANCY, ONE AT FULL TERM.[1]

BY JOHN B. SWIFT, M.D., BOSTON.

The infrequency of diagnosis before rupture in extra-uterine pregnancy, and the manner in which the diagnosis was made in the following case, seem worthy of record.

I was asked to see the patient on account of an irregular flow, she being supposed to be pregnant, and was given the following history: She was twenty-nine years old, and had been married about five months. There was nothing of importance in the family history except that her mother had been of an extremely nervous disposition. As a child she had been well and strong, in spite of going through the diseases of childhood with unusual severity. The menstrual function had developed rather late, not being fully established until she was seventeen, but afterwards was normal as to regularity, amount of flow and absence of pain. Three years ago there was an interruption of menstruation, owing to a chill after the flow had commenced, which was followed by an attack of what was diagnosed as pelvic peritonitis. Following this she had attacks of "wind colic," and was told that they were caused by adhesions which had formed at the time of the peritonitis. A few months before marriage she was given laughing gas, and the adhesions were said to have been broken, but she continued to have the attacks of colic. The last regular menstruation began on August 31, 1897, and she began to have nausea on September 12th. On September 27th, which was the date for her regular menstruation to appear, there was a slight show of a pinkish tinge and watery consistency, following or accompanying an attack of diarrhea which appeared without known cause. The time for the October period passed without incident; but about the first of November there was a return of the flow, which continued more or less up to the time when I first saw her on November 14th. From the middle of September there had been the usual train of symptoms incident to pregnancy. The nausea had continued, the breasts had enlarged, the areolæ and papillæ about the nipples had increased in size. There had been no pain except the usual attacks of colic.

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[1] Read before the Obstetrical Society of Boston, January 18, 1898.

Examination showed the uterus to be in good position, movable, possibly increased in size, and the os soft but not patulous, with a slight erosion of the cervix. No evidence of any hemorrhage or discharge of any kind. There was no tenderness in the pelvis, and nothing abnormal was felt on either side or posterior to the uterus.

The diagnosis of pregnancy was made; the flow being explained by the erosion of the cervix, or the case being one of those in which a slight show is seen, from time to time, early in pregnancy. Extra-uterine pregnancy was thought of, but was excluded on the ground that nothing abnormal was felt in the pelvis. The reason for not feeling the enlargement of the tube will be explained later. The possibility of abortion was considered, and rest in bed was advised.

During the evening of November 22d she had an attack of colic so severe as to require the use of morphia to give relief. There was no faintness or pallor with this, and the next morning she seemed to be in her usual health.

On November 26th there was a little more blood than usual, and a piece of membrane came away, which was put into alcohol and kept for me to see. It was so hardened by the alcohol, however, that I could make nothing of it, and gave it to Dr. Grant for microscopical examination. He reported that owing to its having been in alcohol it would take some time for the examination, and I told the husband that I feared a miscarriage was taking place. Should anything more be passed to keep it in water instead of alcohol for me.

At midnight of November 27th he appeared at my office with a much larger piece of membrane which had been passed without any pain or flow. This did not seem to me to be the ordinary membrane of a miscarriage, and under the microscope I could find no villi; so the next morning I took it to Dr. Grant for further examination. He pronounced it not the regular membrane of normal pregnancy; and the slides being shown to Dr. Whitney, the opinion that it was from an extra uterine pregnancy was at once expressed. This was explained to the husband, and the patient was examined under ether. Even then nothing definite was made out; but it was evident that there was something behind and to the left of the uterus. The condition was explained and immediate operation advised, the advice being that the uterus should first be explored with the curette, and in the absence of a fetus there, a celiotomy should be done. This proposition being somewhat startling to a young couple, the operation was delayed pending the advice of friends, and Dr. M. H. Richardson saw the patient with me and concurred in the advice given.

The operation was done November 30th, seventy-eight days from the first symptom of pregnancy. The uterus was found to be empty, the cavity measuring three inches. On opening the abdomen I at once sought the left tube, as during the ether examination whatever had been felt was on that side. My feelings may be imagined, but not described, when I found a perfectly normal tube and ovary. Passing my finger back of the uterus I came upon what appeared to be a cyst with a pedicle, which, on account of its extreme mobility, eluded my grasp for some time, but finally was brought up into view, and was seen to be the right tube with the fetal sac. Here was the explanation for not feeling the tube during the vaginal examination. The dilatation was in the outer extremity, and being perfectly free eluded the finger in the vagina, as the tenseness of the abdominal walls prevented the outside hand from steadying it. Under ether the left forefinger in the vagina pushed the cyst to the left, which accounts for the diagnosis of the trouble being on that side. The tube containing the sac was removed, two silk ligatures controlling all hemorrhage, and the abdomen was closed. There was no blood nor bloody serum in the abdominal cavity, nor were there any adhesions encountered in the exploration of the pelvis.

So many cases of ectopic gestation after rupture have been reported that we are all familiar with the symptoms in such cases; but what have we to guide us in making a diagnosis before rupture has occurred? All of the text-books which I have consulted agree that a diagnosis before rupture is difficult; but the condition should be suspected when a patient with the symptoms of pregnancy during the early weeks complains of an irregular flow, either with or without shreds of membrane, pains of a crampy character in either groin, and upon vaginal examination some abnormal condition of the pelvic organs is found. In looking over the histories of cases where rupture has occurred the most constant symptom appears to be some menstrual irregularity.

Pain is not a necessary accompaniment of the condition, but depends on the situation of the ovum in the tube, the nearer it is to the uterus the more liability there is to be pain, as this part of the tube does not dilate as readily as the part near the fimbriated extremity.

The shedding of the decidual membrane does not always take place before rupture. When this does occur, it might easily be mistaken for a normal abortion, even should the physician have the good fortune to see it. In the present case the membrane, having been passed without pain or any symptom calling attention to it, might have been lost had not the patient been using the bedpan. In the membrane, however, is our one positive sign, and the microscope scores another triumph. It is due to the positive statement of Dr. Whitney that the operation was done with such a fortunate result.

It is a well-known fact that unusual cases are apt to occur in groups; and it was my fortune to see during the next week in which I operated on the preceding case another ectopic gestation, but at the other extremity of pregnancy.

On December 11th I was asked to go to Woburn to remove a dead fetus from the uterus of a woman who had gone three weeks beyond the expected time of her confinement, the fetal movements having ceased and the fetal heart-sounds no longer being heard.

The history obtained by careful questioning was that the menstrual function had been established at thirteen years; was fairly regular, with a tendency for the inter-menstrual period to be rather more than twenty-eight days, and there was some dysmenorrhea. She was now thirty-four years old and had been married about a year and a half. Three years ago she had had some pelvic trouble, which appeared without known cause, was called ovaritis, and confined her to her bed for six weeks. Since then there has always been pain in the ovarian regions, and she has had local treatment by various physicians. The last regular menstruation appeared January 21, 1897. The February period was only a slight show, symptoms of pregnancy beginning at about the same time. Conception was supposed to have taken place February 10th or 12th, as her husband, who is a travelling man, was at home at that time On March 26th she had a severe attack of pain in the abdomen resembling the former attack of ovaritis, and was miserable for seven or eight weeks. There were no symptoms of collapse with this attack, but a great deal of nausea, which was supposed to be due to the pregnancy. She was first positive of feeling motion early in July, and this continued to grow stronger all the time up to November 19th, since which time it had entirely ceased. During the last two months the motion was described as having been very violent, and she thought the child, at times, must have been in convulsions. This motion was perceptible to friends through her clothing, and when lying in bed would move the bed-clothes. The fetal heart-sounds had been heard from time to time by her physician. All through the pregnancy there had been a great deal of stomach disturbance, dyspepsia and constipation.

Confinement was expected about the middle of November, as, dating from the last regular menstruation, January 21, 280 days would have been October 28th. Two hundred and eighty days from the February period would have been November 26th, and 280 days from February 10th, the suspected date of conception, was November 17th.

On November 19th, while sitting on the water-closet, she felt a sudden gush of warm fluid from the vagina. The character of this fluid could not be told, but there was no appearance of blood. Following this throughout the rest of the day there were intermittent pains which came regularly, but were not severe, and her physician was not called. After that all motion of the child ceased, and she noticed that she was growing smaller. The breasts became hard, large and painful, and then gradually subsided.

A week after these symptoms her physician called to see her, and was told of what had happened. On listening for the fetal heart, he could not hear it, and diagnosed the death of the child. After waiting a week, there being no sign of labor, he inserted a catheter into the uterus with the idea of inducing labor, but this not being effective, I was asked to see her and empty the uterus.

The patient was a slight, thin woman, lying in bed, with a normal pulse and temperature. Inspection of the abdomen showed it to be flat, with a pigmented line from symphysis to umbilicus, the umbilicus not prominent.

Palpation showed a tumor of irregular outline lying across the abdomen, its upper surface about on a level with the umbilicus, and shaped like a child doubled up, with the head in the left iliac fossa. Half-way between the umbilicus and symphysis the hand could press down the abdominal wall so deeply the impression was given that there was nothing but the normal tissues between the hand and spine. In the right groin was a small, rounded, sensitive tumor. No fetal heart was heard.

By the vagina the uterus was felt slightly enlarged, pressed to the right, and was seen to be the small tumor spoken of. The cervix, soft and flabby, admitted the finger, feeling like a recently emptied pregnant uterus. A soft boggy-feeling mass filled the pelvis on the left side, and the child could be felt and outlined between the hands above this. There was a slight discharge like lochia coming from the cervix.

The breasts presented the appearance of those of a nursing woman, and a milky secretion could be expressed from them. There was a supernumerary nipple on the under side of the right breast.

The diagnosis of extra-uterine pregnancy at full term, pseudo-labor with death of the child, was made. Advice was given to treat her as a recently delivered patient and operate for the removal of the child when sufficient time had elapsed to diminish the chances of hemorrhage from the placenta.

I saw her again on December 27th, and found her in very good condition, up and about the house. The abdominal enlargement had diminished considerably. She had had a good deal of milk in the breasts, and there had been a discharge similar to the lochia, which had about stopped. At no time had there been any pain or elevation of temperature. The stomach had lost its irritability, and her food gave her no discomfort.

Vaginal examination showed the uterus to be smaller than at the last visit, still crowded to the right side of the pelvis, the cervix much firmer, and the os would not admit the finger as it had two weeks before.

The child occupied the same position, and the same boggy mass could be felt in the left side of the pelvis, but seemed smaller. The left uterine artery, the size of a quill, could be distinctly felt. Both the patient and her husband were anxious for operation at once, as his business affairs would soon oblige him to leave home.

The operation was done on January 3, 1898, the patient being prepared as for an ordinary celiotomy. On opening the abdomen in the median line, the lower edge of the omentum was found to be adherent, and in trying to push it up, the sac in which the child was lying was broken. This sac was a thin membrane, very friable, and was adherent to the under side of the omentum, the intestine, the posterior wall of the uterus and the bottom of Douglas's pouch. It was impossible to remove it, and most of it was left in the abdomen. The child was easily delivered breech first, and in one place the side of the head was firmly adherent to the sac which was attached to the intestine.

The placenta was on the left side and behind the uterus, pushing the uterus over to the right. It was free in the sac, so that the hand could be passed under it from behind, and draw it up out of the pelvis. It was only attached to the upper edge of the broad ligament, probably the tube, for the tube could not be distinguished except where it left the uterus. The tube seemed to be enlarged at this point, and the broad ligament was very much thickened. A ligature was passed through the broad ligament near the uterus, and the tube tied and cut. In attempting then to dissect off the placenta so many bleeding points were encountered that the broad ligament was tied in several bunches and the whole mass cut away. There was considerable oozing from the sac when the placenta was removed, but I think most of the blood came from the placenta itself.

The cavity was wiped out with gauze and flushed several times with salt solution. The whole abdominal cavity was then filled with salt solution, and closed without drainage. The right ovary and tube appeared to be healthy and were left. The left ovary was not seen. The uterus was somewhat enlarged.

There was considerable shock following the operation, but she soon rallied under the ordinary treatment, and the convalescence has been uneventful, the temperature never having been over 100° F. She is now sitting up and gaining strength every day.

I have been unable to look up the literature thoroughly, but there have been a number of cases reported where extra-uterine pregnancy has gone to full term. The condition, however, must necessarily be rare, as when the rupture of the tube takes place, if the mother does not die, the fetus generally does or is removed by operation. Where the child has lived the subsequent history has been similar to my case, and in a certain number, the condition being recognized before labor came on, or during the false labor, operation has been done in the interest of the child with varying success. If the child is left after its death, which occurs at the time of the false labor, certain changes take place in the fetal tissues which result in the formation of what is known as a lithopedion.

The lithopedion may be carried for an indefinite period in the abdominal cavity, although it is liable to become infected at any time and result in the formation of an abscess. I have seen one case where the lithopedion had been carried for four years without causing trouble. The woman declined operation and I lost track of her.

In a recent number of the *Johns Hopkins Hospital Bulletin* there is an article by Dr. J. G. Clarke, describing a case of lithopedion which was operated on four years after the pseudo-labor. In his article he has gone quite extensively into the literature of the subject, and gives Kuchenmeister's table of cases reported between the years 1582 and 1880. In this table forty-seven cases are reported, the fetus having been carried for periods varying from six months to fifty-seven years. Since Kuchenmeister's table was published Dr. Clarke has found eighteen other cases reported.

When the diagnosis of ectopic gestation has been made early in pregnancy, whether the sac has ruptured or not, there is no question to-day as to the advisability of operating as soon as possible. In cases where rupture has taken place and the child has continued to live, if the diagnosis is made before, or at the time of the pseudo-labor, operation should be done, in the first case, about the time when labor would naturally be expected; in the second case as early in the labor as possible. In such cases the disputed point is what to do with the placenta. If an effort to remove it is made, the chances are that the hemorrhage cannot be controlled. If, on the other hand, the fetal sac is stitched to the abdominal wall and the placenta left to slough away, there is the chance of the woman dying from septicemia. Tait has advised that the cord should be tied as close to the placenta as possible, and the abdomen closed without drainage, a second operation for its removal being done later should there be any indication for it.

When the diagnosis has been made after the death of the child, the patient should be treated as after an ordinary labor, and child and placenta should be removed when the blood-supply to the fetal sac has stopped and the placenta has shrivelled, as it does in cases of death of the fetus intra-uterine.

Just how long a time it is advisable to wait I am not able to say. In my case the operation was done six weeks from the false labor; but in another case, unless there was some indication calling for operation, I should wait at least two months.

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TWO SPECIMENS ILLUSTRATIVE OF THE PATHOLOGY OF EXTRA-UTERINE PREGNANCY.[1]

BY W. F. WHITNEY, M.D., BOSTON.

I. The piece of the tube removed by Dr. Swift in his first case measures about six centimetres, the middle part of which is dilated into a somewhat spindle-shaped tumor about one and five-tenths centimetres in diameter. The outer wall of this is smooth and is traversed by small blood-vessels. At one place, in the most prominent part, is an opening from which small white filaments project. A section through the swelling reveals a dark solid mass surrounding a central cavity. This is lined by a thin, smooth, white membrane, measures about seven millimetres in diameter, and contains an embryo about four millimetres in length. The solid part consists of clotted blood mixed with white fibrous filaments. The clot extends about two centimetres farther into the tube; but does not reach the fimbriated opening.

In connection with extra-uterine pregnancy the changes which occur in the uterus are quite constant, and, as Dr. Swift's first case shows, may be of great importance in making the diagnosis.

It is now generally conceded that with development of the ovum in the tube a decidua is formed in the uterus, similar to that of intra-uterine pregnancy, only less well developed. A few cases have been reported when it has not been found, but they have been explained by its early discharge. In the twelve specimens in the Warren Museum it is present in all but one case; in regard to this, however, history is silent. With such a constant proof of pregnancy, the diagnosis should be very easy if it could always be obtained. But unfortunately this does not often come into the physician's hands for examination. In 600 cases collected by Cohnstein there is a reference to the passage of a membrane in only 40, or about seven per cent. In looking over the histories of 60 cases which have been sent to me for examination, I find it mentioned four times, which would be about the same per cent. as in the larger number of Cohnstein.

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[1] Remarks before the Obstetrical Society of Boston, January 18 1898.

As to its cause and significance, it is generally regarded as associated with the death of the embryo, preceding or following the rupture of the tube in the early months or after the death of the fetus, when carried until full term. The time at which it may be expected varies from six weeks to the end of pregnancy. In the four cases I have noted it occurred between the sixth and tenth week. In the 39 cases cited by Cohnstein, during the second month is the earliest time mentioned.

The form in which the decidua may be expelled is either as a complete cast of the interior of the uterus, or in fragments. The latter is by far the most common, and is the only one which I have personally seen. I am unable to state whether a second true decidua is ever formed after one has been expelled. It is an interesting point for future inquiry.

As before mentioned, the structure of the decidua is like that of intra-uterine pregnancy. In it there are to be distinguished three layers. The outer and more compact one is covered by a layer of rather cubical epithelial cells. In this are large thin-walled blood-vessels, from which comes the hemorhage that is such a constant symptom of an extra-uterine pregnancy, and which is often the first to attract the patient's attention. In this outer layer are also developed the decidual cells to their greatest extent. In the middle layer are a series of irregular cavities formed by the dilatation of the uterine tubules, giving to this part a spongy aspect; and in the deepest layer are the blind ends of the tubes.

The diagnosis of pregnancy rests on the pressure of the membrane with the characteristic decidual cells. The cells are very large, irregular in shape, often distinctly triangular, with a vesicular nucleus, and separated by clearer intervals from each other, in which are found numerous small cells, with a dense nucleus (lymphoid cells and leucocytes).

The differential diagnosis would lie between a menstrual membrane and a sarcoma of the uterus. In the former the cells are all small and the glands, if present, normal or but slightly dilated. In the latter the cells are more regularly round or spindle-shaped, are more abundant, lie very much closer together, and glands are, as a rule, absent.

In the case of intra-uterine pregnancy the presence of chorionic villi or bits of the embryonic membrane would be present.

Of course, even this latter condition does not exclude tubal pregnancy, as cases of a combination of the two forms have been recorded.

From the above it seems that a diagnosis, as in Dr. Swift's case, before any serious symptoms have occurred, can be made but rarely by recognition of the decidua, since the expulsion of a membrane occurs in such a small percentage of the cases, and then is more apt to follow a serious accident than to precede it.

II. The fetus removed by Dr. Swift in his second case is at full term and well formed, with the exception of the left foot, which is dislocated and twisted so that the sole is turned directly upwards. The nose is slightly flattened, and there is a thick layer of vernix caseosa about the head, and to a less degree over the rest of the body. The skin is macerated off in several places. The placenta is somewhat shrunken and quite homogeneous.

In this case the anatomical conditions certainly bear out the plan of treatment followed by Dr. Swift, namely, to wait until after the death of the child and cessation of the circulation in the placenta before operating. For the absence of any contractile wall to aid in stopping the hemorrhage, when the placenta is loosened, is a factor that is the cause of death in the majority of the cases when the operation has been done during the life of the child or shortly after its death. Bandl cites 37 cases in which the operation was done during the life of the child with a fatal result in 31. On the other hand, the dangers from septic infection after the death of the child are very great, the percentage of which I have not been able to find.

In cases where the fetus is dead and operation has been undertaken, there has been severe bleeding from the placental insertion even after nine weeks.

Leitzman quotes 10 cases that were operated upon from eight days to five weeks after the false labor and of these eight died. In 23 cases operated upon from six weeks to one year, six died.

The rule has been therefore laid down, that the operation should be done if the patient came under observation at any time between the ninth week and the second year after the death of the fetus. After the latter time there is very little danger to the mother, the fetus generally becoming calcified, and operative interference should not be advised unless other conditions (pregnancy, inflammation, etc.), render it necessary.

Clinical Department.

TWO ADDITIONAL CASES OF DIPHTHERIA OF THE VULVA.

BY W. P. COUES, M.D., BOSTON.

In the Journal for November 4, 1897, I reported a case of diphtheria of the vulva occurring at St. Mary's Infant Asylum. In connection with this case the following cases are of interest:

Case I. K. McG., two years old, has been in St. Mary's for five months. I saw her first on March 1, 1898. There was a history of loss of appetite, languor and high temperature, 103° to 104° F. for three days. Examination showed a well-developed and nourished child of two years. The lungs and heart were negative; the spleen was not enlarged. The bacterological and clinical examination of the throat was negative. The child's whole aspect was markedly typhoidal.

The case ran on with the symptoms above described for three days, when, as in the former case reported, my attention was called to the vulva, on account of the child's inability to urinate. Examination showed the vulva greatly swollen, reddened, with two large patches of membrane on either labium majorum. The inguinal glands were not enlarged. A culture was taken from the membrane on the vulva, which proved positive.

The child was sent to the South Department, Boston City Hospital, on March 5th, and was discharged well on March 14th.

Case II. L. T., twenty-one months. She had been in St. Mary's for two months. On March 2d the child was languid and fretful. There was a slight discharge from the nose. Examination showed a feeble, ill-nourished child. The throat was reddened, there was some tenderness over the cervical glands. The heart and lungs were negative.

On March 4th the symptoms were aggravated. There was a bloody discharge from the nose and some membrane, the temperature was 102° F., and the pulse 124.

On March 5th a positive culture was received from the throat. Examination of the vulva showed a large patch of white membrane on the right labium majorum, extending up into the vagina. The vulva was not red, or swollen as in Case I. A culture taken from the vulva on March 5th proved positive.

The child was sent to the Boston City Hospital, South Department, on March 5th, and died on March 9th.

Although three cases are hardly enough to draw any definite conclusions from, it seems probable that diphtheria of the vulva is more common than is generally supposed. It may occur primarily, as in Case I, the clinical and bacteriological examination of the throat being negative; or, secondarily with clinical and bacteriological diphtheria of the throat, as in Case II. A careful examination of the vulva in any obscure case should be made, and also in all cases of diphtheria of the throat occurring in young children.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

THE EFFECT OF HIGH ALTITUDES IN AGGRAVATING SURGICAL SHOCK.

Wetherill,[1] in an article on this subject, in making practical application of his ideas, gives the following rules:

(1) In surgical operations, or in surgical shock everywhere, save for the patient every possible drop of blood.

(2) The importance of this precaution increases greatly as higher elevations are reached and the atmospheric pressure is decreased.

(3) Anemic and exsanguinated patients are more subject to surgical shock at high altitudes that at sea-level, and must be more carefully prepared for operation; extra precautions for the prevention of shock must be used at and after the operation.

(4) "Increasing shock" after injuries or operations must be construed as strong presumptive evidence of continuing hemorrhage. It must be made clear that there is no hemorrhage before the ordinary remedies (cardiac stimulants, transfusion, etc.) are employed. The reflex effect of oozing is to continue shock, which must be regarded as conservative in its tendencies while bleeding is still going on.

(5) In treating shock after surgical operations or injuries, the first and most important thing is to arrest completely all further loss of blood.

(6) By some means supply to the depleted vessels an increased volume of fluid at a high temperature for the heart and blood-vessels to contract upon, so that the circulation and blood-pressure may be speedily re-established. In abdominal operations this may be done by leaving a large volume of hot salt solution in the cavity; or, as in the writer's case, the abdomen may afterwards be opened and the fluid introduced, thus securing at once the application of heat to the great abdominal nerve centres, the mechanical pressure and support of a large volume of fluid as an object upon which the abdominal walls may contract, and thereby restoring to a degree the intra-abdominal pressure, as well as supplying water for absorption into the circulation. The sustained Trendelenburg position is, for obvious reasons, an important accessory.

(7) Diffusible and cardiac stimulants, with heat to the surface, and all other means for the re-establishment of the circulation in its full force and volume may now be freely employed.

(8) Natives, and thoroughly acclimated persons, are not so susceptible to the greater surgical shock in the higher altitudes as others; long residence and the gradual compensatory changes in blood-pressure, in vaso-motor action, and in muscular support of the blood-vessels, having adapted them in great measure to the lighter atmospheric pressure and to the conditions incident to it.

(9) Surgical operations upon unacclimated persons from lower altitudes, and those which involve much loss of blood, are fraught with more risk from shock as the altitude is increased, and extra precautions for its prevention are imperative with such patients. This being borne in mind, and proper precautions observed in the preparation of patients at the time of and after operation, as good results may be expected in high as in lower sections.

(10) In surgical shock at high altitudes use every means for the prevention of shock through the nervous system and the resultant blood stasis, that is, preserve surface heat, save time in operating, avoid exposure and unnecessary handling of the viscera, etc.

Evaporation and heat radiation go on much more rapidly at high altitudes, and must, therefore, be especially guarded against.

THE CAUSATION OF CHLOROFORM SYNCOPE.

Leonard Hill[2] combats the doctrine of the Hyderabad Commission and of Lawrie, that chloroform kills by paralyzing the respiratory centre, and reaches the following conclusions:

(1) Chloroform produces a primary failure of the circulating mechanism and a secondary failure of the respiratory centre. The respiratory centre fails to act, not only because it is damaged by the drug, but because of the anemia of the spinal bulb produced by the fall of arterial tension. This is proved by the fact that the action of the respiratory centre can be renewed by raising the arterial tension. The depth of anesthesia depends, as does the paralysis of the respiratory centre, on the primary fall of the arterial tension.

(2) Chloroform, more than any other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity.

(3) Chloroform abolishes these mechanisms by paralyzing the splanchnic vaso-motor tone and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible, if the subject be in the feet-down position.

(4) Chloroform also produces paralytic dilatation of the heart. It acts directly, like amyl-nitrate, on the musculature of the whole vascular system.

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[1] Annals of Surgery, April, 1897, p. 430.

[2] British Medical Journal, April 17, 1897; Clinical Notes and Therapeutic Suggestions, p. 153.

(5) There are two forms of chloroform syncope: (*a*) During primary anesthetization. The patient struggles, holds his breath, raises the intra-thoracic pressure, congests his venous system, lowers his arterial tension, and, finally, takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second stage it is suddenly filled with blood. This is drawn from the lungs and is full of chloroform. The chloroform passes into the coronary arteries and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously or the pulse before respiration. (*b*) During prolonged anesthetization this arises from gradually giving chloroform to too great an extent. The arterial pressure falls lower and lower, and, secondarily, the respiration ceases because of the anemia of the spinal bulb. The heart is not, in this case, paralyzed by chloroform, because the drug is taken in gradually by the shallow respirations and distributed slowly by the feeble circulation.

(6) Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope.

(7) Artificial respiration, established with the patient in the horizontal position, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse, the patient should be put into the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this maneuvre and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart, a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated.

(8) Inversion — that is, placing the subject in the feet-up position — or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless.

(9) In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished and chloroform may easily be the last straw to completely paralyze the circulation.

(10) Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope.

(11) Ether is, in every respect, a far safer anesthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform.

(12) With the practical conclusion of the Hyderabad Commission, that the chloroform-inhaler should be removed during the struggling of the patient or when the respiration is of irregular depth, he absolutely agrees, but he considers their interpretation of their own experiments and tracings concerning the origin of chloroform syncope to be mistaken.

Not only the work of all physiologists, but also the tracings of the commission, when rightly interpreted, prove that paralysis of the circulatory mechanism, and not of the respiratory centre, is to be dreaded by the anesthetist.

IMMUNIZATION AND SERUM-THERAPY IN STAPHYLOCOCCUS INFECTION.

Petersen, in an article on this subject,[3] states that research has been made in a simple manner, principally in three directions:

(1) Immunization with sterilized cultures. It was found that a previous injection of sterilized (by heat) culture either protected an animal from an otherwise fatal dose or at least definitely delayed death.

(2) Immunization with filtered cultures. The results obtained were negative, notwithstanding a diversity of methods employed.

(3) Immunization by weakened or diluted cultures. Serum thus obtained was used to treat animals inoculated with fresh cultures. The results varied widely, and while attended with a fair measure of success, nothing in the way of making a serum suitable for use in man was evolved.

SEPTIC PERITONITIS TREATED BY ANTISTREPTOCOCCUS SERUM.

Grandin[4] reports a case of general suppurative peritonitis in which, after multiple incisions and drainage by multiple packings of gauze and by a large drainage-tube passed into the vagina, the infection yielded only after injections of the antistreptococcus serum.

In regard to the serum the author says: "I am far from claiming that the woman recovered because of the serum. It is always dangerous to draw positive conclusions from a single case. I find that the antistreptococcus serum has been used in many cases, irrespective of the determination as to whether the case of sepsis was due or not to streptococcus infection. The case I report is fallacious in this respect, for I neglected the very essential point of having the pus examined. Etiologically, I should assume that in my case the bacterium coli played a very prominent part, and we know that the antistreptococcus serum is powerless against the bacterium coli. If, therefore, the serum entered as a factor in the recovery of my patient, it was because the case was one of mixed infection."

The antistreptococcus serum appeared to act as follows: temperature and pulse-rate were uniformly lowered after each administration; elimination of waste infectious products were favored, as was evidenced by the greatly increased action of the kidneys; pus-production was checked; for, whereas before the use of the serum pus-pocket after pus-pocket was forming and infectious elements were being rapidly absorbed into the system, not alone after the injection of the serum did pus-production cease, but the infiltrated flaps cleaned up far more rapidly than the author had ever seen before. He had every reason to anticipate progressive systematic infection and death. He witnessed rapid throwing off of sepsis and recovery.

SUPPURATION FROM STERILE CATGUT.

From experiments performed in 1895, Orlandi[5] showed that there is produced by the introduction of sterile catgut into animal tissues an acute reaction which is of little moment and is to be explained by the chemical reaction produced by the agents employed in sterilizing and preserving the catgut; also a reaction which has nothing to do with the preparation and sterilization of the catgut, but is produced by bacteria or the results of their action upon the tissues. These bacteria and their products are present in the catgut before its sterilization, and can give rise to so marked chemotactic action that a true abscess-formation, with an outpouring of leucocytes, is produced while the catgut is still sterile and benign.

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[3] Annals of Surgery, February, 1898, p. 242; Beiträge zur klin. Chir., Band xix, Heft 2.

[4] Medical Record, April 3, 1897; American Journal of Medical Sciences, July, 1897, p. 107.

[5] Cent. f. Chir., February 13, 1897; American Journal of Medical Sciences, November, 1897, p. 608.

The author publishes the results of a further series of experiments which he has undertaken with the purpose of determining if the reaction produced by the catgut present in a sterile field will influence the development and biological action of infecting bacteria which by any chance infect the previously sterile field. The observations were confined to experiments with the bacillus coli and the staphylococcus pyogenes aureus, and led the author to the following conclusions:

(1) The area in which the catgut is introduced easily forms abscesses, with a tendency to rapid necrosis.

(2) The micro-organisms are somewhat altered in their development and virulence.

(3) If the animals were inoculated with virulent cultures intravenously, instead of at the area where the catgut was introduced, there was produced an infective reaction at the point where the catgut was introduced.

This, however, did not take place if the inoculation was subcutaneous and in an area which was neither in the same circulatory area nor contiguous to the wound-area.

THE ANTISEPTIC VALUE OF IODOFORM.

The results obtained by Lomry,[6] in a series of experiments conducted upon animals and by bacteriological cultures in natural fluids, are in marked contrast to those obtained of late by bacteriologists, and tend to prove that the clinical observation of the value of iodoform as an antiseptic is fully justified, while the experimental bacteriological investigations which have been previously made were of little value.

The results which he obtained are the following:

(1) When wounds in dogs or rabbits which have been previously infected with the staphylococcus or streptococcus pyogenes are treated, the one with iodoform and the other without, it will be seen that the iodoform exerts a beneficial influence upon the wound. It has greater vitality and a better appearance. The leucocytes are at least as numerous and more active, the amount of secretion is decreased, and cicatrization is rapid.

(2) Credit cannot be given to the bacteriologists who declare that iodoform has no antiseptic action. They have attained their results by the use of culture media which did not dissolve the iodoform. When natural media are used for tests *in vitro* an active antiseptic action is seen.

(3) Iodoform decreases the virulence of the staphylococcus and streptococcus pyogenes.

(4) The iodoform neutralizes or counteracts the microbic toxins, but this neutralization or counteraction is only partial.

(5) The iodoform does not hinder, even to a slight extent, the ameboid movement and phagocytic action of the white corpuscles; but, on the other hand, stimulates their ameboid movement.

SUTURE OF THE LATERAL SINUS.

The suture of large veins, when wounded, is a surgical procedure which very recently has come into practice, and, like the ligature and clamp to control hemorrhage, was suggested by the exigencies of operations, attempts being made by surgeons to preserve the patency of large veins in order to obviate the disadvantages, perhaps death, which would follow their closure.[7] Successful experiments upon animals have been reported from time to time during the last eight years, and many surgeons have obtained good results by suturing the axillary, femoral, internal jugulars, and other large venous trunks. One of the most interesting of these successes was the suture of the inferior vena cava by Schede, after its injury, in an operation upon the kidney. At autopsy, some time later, it was seen that the stitches had held perfectly, and that the lumen of the vessel was well preserved. But so far as known, Schwartz reports[8] the first successful attempt at suture of the lateral sinus. His patient was a man, aged twenty-six, who presented himself with necrosis and a sinus behind the left ear, following a kick from a horse received three months before. At the operation (November 24, 1895) a piece of bone, the size of a silver dollar, was found depressed. It was adherent in part to the dura mater, and, despite every care, the lateral sinus was opened during its removal, a rent nearly half an inch in length being made. Hemorrhage was profuse, but when two fine-silk stitches placed in the wounded vein were drawn tight the bleeding was controlled. The wound was lightly tamponed with iodoform gauze, and the patient made a good recovery. The central portion of the depressed area of bone was necrotic, and it was at this point that the adhesion to the sinus existed.

TRAUMATIC HEMORRHAGE INTO THE WHITE BRAIN-SUBSTANCE CURED BY SURGICAL INTERFERENCE.

Borsuk and Wizel[9] report a case of hemorrhage into the white substance of the brain, followed by aphasia, hemiparesis and Jacksonian epilepsy, which was cured by surgical interference.

After the removal of a clot from the dura and the relief of acute symptoms, the patient had repeated attacks of Jacksonian epilepsy. The reopened wound showed nothing abnormal, but a long hypodermatic needle passed deeply into the brain substance drew out a blood-stained fluid. The dura was then incised, the needle again passed, and at the point from which the blood-stained fluid was withdrawn a deep incision was made down to the white substance. Bloody fluid and blood-stained contused white matter were removed; a strip of iodoform gauze was inserted, and the wound sutured about it. The strip of gauze was removed twelve days after the operation, and with it about a teaspoonful of blood-stained fluid. The wound then closed and the patient made a complete recovery.

This observation leads to the following conclusions:

(1) Extravasations of blood of traumatic origin can be removed from the brain-substance by surgical methods, as well as contused and destroyed brain-substance, and in the same manner pathological and circumscribed portions of brain-matter.

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[6] Archiv. f. klin. Chir., 1896, Band xxxv, Heft 4; American Journal of Medical Sciences, August, 1897, p. 232.

[7] Medical News, May 29, 1897, p. 704.

[8] Gaz. Heb. de Med. et de Chir., October 22, 1896.

[9] Archiv. f. klin. Chir., 1897, Band liv, Heft 1; American Journal of Medical Sciences, June, 1897.

(2) It is possible that extravasations of blood other than those of traumatic origin may be removed by surgical interference.

(3) The brain does not resent surgical procedures more than any other part of the body.

NOTES ON THE ANATOMY, DEVELOPMENT, PATHOLOGY, AND SURGERY OF THE FRONTAL SINUSES.

Collier[10] has written an article on this subject, and states that the frontal sinuses are generally two irregular cavities between the inner and outer tables of the frontal bone, near the root of the nose. In the fresh state these cavities are lined with a thin, pale, closely-adherent mucous membrane, and separated from each other by a well-marked septum. They usually communicate separately with the corresponding nasal cavity by an opening, variable in size, leading into the anterior extremity of the middle meatus of the nose. The examination of a large number of frontal sinuses in the moist and dry state discloses many points of interest. In the first place there is no space between the tables of the frontal bone before the seventh year. There may be a complete absence of these cavities even in extreme old age.

The orbital plate of the frontal bone is frequently the site of a large cavity, communicating with, and forming a part of, the frontal sinuses. The frontal sinus of one side may not communicate with the nose or its fellow of the opposite side, but may communicate with the anterior ethmoidal cells of the same side. The septum dividing the two sinuses is usually partly bony and partly fibrous, but is always well marked. It may be entirely bony or entirely fibrous. Its central position is constant. The author has never found a frontal sinus not in communication, directly or indirectly, with the nose. The evolution of the frontal sinuses is not complete until the twenty-first year.

The lining membrane of the frontal sinuses is but an extension of the lining membrane of the nasal cavity through the infundibulum. It differs widely in character from the nasal lining membrane. It is extremely thin, and in the healthy state pale in color, and intimately adherent to the subjacent periosteum.

Latent empyema of the frontal sinus is not necessarily associated with any other affection in the throat or nose. The onset is usually undefined, and patients have merely perceived that from a certain date without well-marked cause they began to suffer from pain and uneasiness in the situation of the frontal sinuses (Professor Ogston). After a while headache at the root of the nose, varying in intensity but always present, is a main feature of these cases. A discharge of pus, not abundant but variable in quantity if looked for, may generally be made out. Pus may also be found at the anterior part of the roof of the cavity, but is small in amount and rarely visible. Pain or tenderness on pressure may or may not be present, but percussion with the fingers or a pleximeter generally elicits some uneasiness. The pain varies in some degrees, it is constantly present, but is seldom acute or unbearable. Bending forwards, stooping, or reading increases the trouble, and, as a rule, it is increased when in the recumbent position and after sleep. Dull, damp and rainy weather increases the discomfort; but high altitudes and bright and dry atmospheres improve matters considerably. Many of these cases escape diagnosis, and are treated with bromides and iodide of potassium, shower baths, and the usual list of remedies for headaches without material benefit.

Resort must be had, then, to opening the sinuses in front at the root of the nose in the mid-line, or at the inner and upper angle of the orbit. A strong and fatal objection to this latter procedure being that the empyema may be one-sided, and it is impossible as yet to make sure on which side the disease is located. The procedure requisite to open the frontal sinus from the front is the following: The patient being anesthetized, preferably with chloroform, and the interval between the eyebrows being divested of any hairs and made scrupulously clean, a note is to be made of the exact spot in the mid-line on a level with the upper margin of the orbits. This, for the purpose of the operation, may be termed the "pin spot," as it is the spot where the pin of the trephine is subsequently placed. An incision should be made exactly in the mid-line commencing at the root of the nose below the glabella and carried upwards for about two inches. In this incision everything is divided to the bone. There is no hemorrhage, as a rule. Next, the pericranial covering is raised by an elevator and retracted to each side with blunt hooks or retractors. Bone to the extent of a five-shilling piece will now have been exposed. A trephine with a crown the size of a six-penny piece or less should now be so placed on the glabella that the pin of the trephine enters the bone at the "pin spot." The trephine is worked in the usual way with caution, examining with a fine probe the depth of the incision after every few twists. As it is important to remove the button of bone without lacerating or opening the lining of the sinus, great care must be observed during the last few twists of the trephine. The trephine does its work first below, and there is always some difficulty in removing the button, the bony septum or arch dividing the sinuses retaining it above. By careful manipulation with an elevator the button of bone is detached, leaving the mucous lining of the sinus intact. This step is important. One or both sinuses may be healthy. The nature and character of the contents is obscured by admixture of blood.

The wound is to be accurately joined, the pericranium and pericranial aponeurosis, as well as the skin, being separately and carefully adjusted. The tube may protrude from the centre of the wound for the first few days for the purposes of irrigation, but subsequently may be shortened or dispensed with entirely. The result of this operation is usually immediately beneficial. The patients lose their troublesome symptoms and are permanently relieved. The wound healing by first intention there is no scar or disfigurement, and the line of the incision is scarcely perceptible.

(To be continued.)

Qualifications to Practise in the Yukon. — Physicians desirous of legally practising in the Klondike region may do so (1) if they hold British qualification and pay a registration fee of $50; (2) not having such qualifications, they must pass an examination and pay the same fee. Dr. H. N. Bain, Prince Albert, N. W. T., is the registrar of the territories. The authorities are insisting on the strict carrying out of these regulations. — *The Canadian Medical Review.*

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[10] Lancet, June 12, 1897, p. 1609.

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

NEW ORLEANS, APRIL 19–21, 1898.

(Concluded from No. 18, p. 429.)

DR. W. W. KEEN, of Philadelphia, read a paper entitled

A CASE OF APPENDICITIS, IN WHICH THE APPENDIX BECAME PERMANENTLY SOLDERED TO THE BLADDER, PRODUCING A URINARY FISTULA.

The case above referred to occurred in a young man twenty-four years of age, from whose urethra, at the age of seven, a pin was removed, no history of the insertion of which could be obtained. Some years subsequently the patient suffered from a supposed abscess of the prostate from the spontaneous bursting of which a fecal fistula was established between the bladder and the rectum, and several attacks of cystitis followed. Numerous efforts were made to locate the two ends of the fistula and the conclusion reached was that the rectal end was very near the surface. At the age of twenty-five years he was first operated on, and a perineal section was done, but the fecal fistula still continued. The formation of a artificial anus was then decided upon, the result of which was not altogether satisfactory, fecal matter frequently passing into the bladder before any was passed out of the artificial anus, and after eating strawberries the seeds were found in the urine before they escaped from the anus. These facts seemed to indicate that the fistula was between the bladder and some point in the intestinal tract considerably above the site of the artificial anus. The third operation was consequently performed, when a very long appendix was found dipping into the pelvis, the tip lying just behind the prostate and solidly incorporated in the wall of the bladder. A cuff of peritoneum was dissected from the appendix and used to cover the stump, and the meso-appendix was then divided. The cecal end of the appendix was treated in the same way, and the abdominal wall closed without anything being discovered in the way of a point of connection between the bladder and the bowel. Subsequently a fourth operation was performed to close the artificial anus and to destroy a spur which existed at the site of the anus so as to restore the entire calibre of the bowel. Shortly after leaving the hospital attacks of vomiting and constipation occurred, and twenty-four days after the last operation the patient died. At the necropsy, twenty-seven hours later, the one striking fact observable was the absolutely black color of the small intestines in the lower part of the abdomen, and an examination showed that seven or eight feet of the ileum had been rotated to the right in one vast volvulus. Its mesentery formed a band which stretched across the ileum just before it joins the cecum, and this had evidently obstructed the ileum sufficiently to cause gangrene.

The diagnosis of a prostatic abscess was a very reasonable one, since an appendix dipping into the pelvis and anchored by its meso-appendix immediately behind the bladder and a terminal appendical abscess so close to the prostate might well be mistaken for this condition. The possibility of the involvement of the appendix never occurred to those in attendance. Although appendicular abscesses bursting into the bladder are not at all uncommon, I know of no case in which the appendix has been so thoroughly united to the wall of the bladder as to form as it were a third ureter. While it may be said that a fifth operation, in the form of an exploratory abdominal section, should have been done, the uncertainty of the diagnosis, together with the fact that the patient had been operated on so much, caused me to refrain.

DR. ROSWELL PARK, of Buffalo, mentioned two cases of pins in the urethra which had come under his observation, and which he believed to have been swallowed, although there was no history in either case as to how the pins got there.

DR. N. B. CARSON, of St. Louis, had also found a pin in the urethra. In connection with Dr. Keen's case he also reported one in which a horse-shoe-shaped appendix, 13 inches long, had been found by him some time since.

DR. W. W. KEEN said that it was not at all unlikely that the pins in these cases were swallowed.

DR. GEO. R. FOWLER, of New York, read by title a paper on

THE USE OF ANIMAL TOXINS IN THE TREATMENT OF INOPERABLE MALIGNANT TUMORS.

The various headings under which the author discussed the subject were "The Cure of Malignant Disease by Accidental Erysipelas," "The Use of the Septic Products of the Streptococcus Erysipelatis," "The Use of the Mixed Toxins of the Streptococcus Erysipelatis and the Bacillus Prodigiosus," "The Dangers of the Treatment," "The Condition of the Tumor under the Influence of Erysipelas," "Treatment with the Toxic Blood Serum of Animals Infected with Streptococcus Erysipelatis," "The Use of the Venom of the Cobra Capello" and "The Influence of Artificially Produced Suppuration upon Malignant Growths."

HYPERTROPHY OF THE PROSTATE GLAND AND SUGGESTIONS IN REGARD TO ITS TREATMENT.

was the subject of a paper by DR. L. C. LANE, of San Francisco, which was read by title.

The various palliative and operative methods were briefly referred to. In the opinion of the author the treatment of prostatic enlargement is likely to receive much attention from those in favor of castration. Two cases operated upon by the author were then briefly described, one of whom died while the other recovered.

RAPID DISAPPEARANCE OF AN APPARENTLY HOPELESS SARCOMA OF THE SCAPULA WITH AN EXTENSIVE STREPTOCOCCUS WOUND INFECTION,

A CASE OF VIOLENT STREPTOCOCCUS INFECTION OF AN AMPUTATION WOUND, WITH THREE MONTHS' TREATMENT WITH ANTITOXIN INJECTIONS OF A ROUND-CELLED SARCOMA OF THE ANKLE,

by DR. M. H. RICHARDSON, of Boston, were read by title.

SOME CASES NOT OPERABLE,

by DR. D. W. CHEEVER, of Boston, was read by title.

THIRD DAY. — MORNING SESSION.

This was devoted to Council and Executive Sessions.

AFTERNOON SESSION.

DR. T. F. PREWITT, of St. Louis, read a paper on

GUNSHOT INJURIES OF THE SPINE, WITH REPORT OF A CASE.

A case illustrating this form of injury and resulting in recovery was described at great length by the author, who then referred to the writings of a number of prominent surgeons on the treatment of these cases.

The author divided these injuries into three classes: (1) those that simply fracture the arches, (2) those that invade the canal crushing the cord and damaging the vertebra, and (3) those complicated by serious injury to the abdominal or thoracic viscera. Details of cases, with the result of treatment occurring in the practice were then given, and the author stated that of 49 cases treated since the aseptic era 24 had been subjected to operation resulting in 11 recoveries and 13 deaths.

The author concluded his paper by stating that —

(1) It is the duty of the surgeon to advise immediate operation in all cases of gunshot wound of the spine, provided the wound had involved the posterior or lateral parts of the spine at an accessible part, unless the condition of the patient is such as to indicate clearly that he is hopelessly crippled.

(2) To wait to see whether nature is competent to restore the damage is to wait until irreparable damage has been done in many cases and rapid degenerative changes, meningitis and myelitis, have resulted. The delay permits of the continuance of conditions the removal of which is the purpose of the operation. These considerations apply with greater force, if possible, in gunshot injuries than in others.

(3) The presence of complications due to penetration of the great cavities and injury of the viscera will influence the question of operation, but not necessarily forbid it.

Attached to the paper was the tabulation of cases already referred to.

Dr. W. W. Keen, of Philadelphia, spoke in favor of operating for gunshot injuries of the spine in the absence of evidence of a total transverse lesion, the principal index of which would be the entire loss of the patella reflexes. In looking up the question of the surgery of the spine some years ago, he noted that although there were very few cases of suturing the spinal cord on record, yet in no case did the result seem to be good.

Dr. Maurice H. Richardson, of Boston, expressed great hesitancy in operating on these cases, on account of the difficulty of diagnosing the conditions present.

Dr. H. L. Burrell, of Boston, believed that the only way to arrive at a proper recognition of these cases was to first understand the pathological condition existing in the cord; and to do this, all cases should be opened up and examined unless contraindicated by the presence of shock.

He cited the case of a woman who died thirty-six hours after having jumped from a window, doubling the spine on itself and causing complete paralysis. At the autopsy it was noted that red softening had already begun, although no compression of the cord was apparent. In his opinion this was evidence in favor of prompt operative interference for the removal of a clot, bullet or fragment of bone, especially if one was inclined to operate in these cases.

He referred to a report which he presented to the British Medical Association in 1894 containing statistics on this subject which he divided into those extending from 1864 to 1886 and to those from 1887 to 1894. The cases referred to in the first group were treated by immediate rectification of the deformity by force; and out of 100 cases thus treated 18 per cent. recovered. The second group contained those cases treated by immediate suspension and the use of a plaster-of-Paris jacket, and as a result 28 per cent., or an increase of 10 per cent., recovered.

Dr. N. B. Carson, of St. Louis, was also of the opinion that there would be a certain number of recoveries after operation. He referred briefly to an accident which happened to a man who while trying to enter a low doorway riding on a load of hay was caught by the neck and pulled forward, causing a complete dislocation of the spine followed by loss of sensation and retention, and paralysis of the bladder. He was immediately suspended with Sayre's suspension apparatus and by extension and counter-extension the dislocation was readily reduced. No sooner was this done than the patient immediately collapsed and lost consciousness, so that he had to be lowered at once and after being well padded was left alone. The further treatment consisted in the application of a plaster-of-Paris jacket; the patient made an excellent recovery.

Dr. P. S. Conner felt that it was well to always ascertain the exact character of the injury and remove any substance that might be pressing upon the cord, to do which he believed an operation both necessary and justifiable. The symptoms present, in his opinion, did not ordinarily act as an index to the real character of the lesion present. In spite of the fact that the mortality from operation would be considerable, he believed it the preferable method of treatment.

Dr. F. S. Dennis, of New York, stated that he had published some time since a number of cases treated with the plaster-of-Paris jacket, in which he obtained excellent results.

A method which had found great favor with him was the administration of large doses of the iodide of potash during the time the patient was wearing the plaster-of-Paris jacket, as, in his opinion, this drug was of great benefit in absorbing the clot.

Dr. Carson continued his previous discussion by stating that he had been very well pleased with the results following the employment of the plaster-of-Paris jacket, and particularly in certain cases.

Dr. W. H. Carmalt thought, that, in order to prevent infection in cases of gunshot wound, one should operate without hesitation. He recalled, however, one case where operation was refused and the application of the plaster-of-Paris jacket brought about an excellent recovery; while, in the second case, presenting practically the same symptoms, the same method of treatment was of no avail, as the patient died in three days. He did not think surgeons could at present formulate any rules for the treatment of these injuries.

Dr. Burrell also continued his previous discussion by commenting on the cases reported by Drs. Carson and Carmalt, and stated that no doubt a reunion of the fibres of the cord by the formation of connective tissue often took place in cases of these injuries, connective tissue subsequently undergoing absorption.

Dr. W. S. Halsted, of Baltimore, reported having had one successful case of this kind in his experience. He agreed, however, in the main with what had already been said on this subject.

Dr. Prewitt closed the discussion, and commented upon the importance of the work done in this direction by Drs. White and Burrell.

Fractures of the kind referred to by Dr. Carson should be called simple fractures, in the speaker's opinion, especially as they ofttimes resulted from a displacement of the body of the vertebra itself. Pressure upon the cord can as well be caused by a dislocation as by a fracture, and this is particularly true if there be a fracture of the lamina. He believed that gunshot wounds should always be considered as compound and local, and considered that the inability to determine the method of procedure in these cases was due principally to the fact that one was not able to judge, from the symptoms present, what the exact condition of the cord was, thus making an operation necessary to determine this point; and he did not think that any harm could be done by opening up and disinfecting the wound, particularly when it had been proven that most of the cases would die any way. He was strongly in favor of giving the patient the benefit of whatever doubt might exist, especially as one might at least reduce the likelihood of meningitis, even though life might not be spared very long.

He commented on the cases reported by Cooper and Hawley, and drew especial attention to one reported by the latter of gunshot injury of the spine where the cause of death, which occurred five and a half years later, was due to irritation caused by a fragment of bone. He was confident of the opinion that this man's life could have been spared many years had an operation been performed at the time of the accident and the fragments removed.

Although in the case of Dr. Briggs, referred to by the author in his paper, nothing was said about the condition of the patellar reflexes, yet he was inclined to the opinion, that, as claimed by Dr. Briggs, complete severance of the cord really occurs, in view of the fact that, although previous to the suturing of the end, pain, sensation and motion were absent, these conditions were all present immediately thereafter.

With regard to the use of a plaster-of-Paris jacket, the author had been quite favorably impressed with the results obtained, and called attention to the statistics of Dr. Burrell. If, in cases of gunshot injury, one had good reason to believe that there was no pressure upon the cord, he would not urge immediate operative interference, but he was of the opinion that in all these cases pressure symptoms would be noted from the presence of spicules of bone and pieces of lead long after the accident.

As stated by Erichsen, as little harm could be done by operation and a few cases would be rescued, the speaker believed operation advisable.

The following papers were read by title:

NOSOLOGY AND MORPHOLOGY OF TUMORS, TRUE AND FALSE,

by Dr. Edmond Souchon, of New Orleans.

RADICAL CURE OF FEMORAL HERNIA IN THE LIGHT OF RECENT METHOD,

by Dr. Rudolph Matas, of New Orleans.

A CASE OF FECAL COMMUNICATION WITH THE BLADDER,

by Dr. Geo. R. Fowler, of Brooklyn.

Dr. James E. Moore, of Minneapolis, read a paper entitled

HYSTERIA FROM A SURGICAL STANDPOINT.

Hysteria is so frequently met with in surgical cases that it is something one must always be looking for, or grave errors in diagnosis and prognosis will result. Hysterical symptoms not infrequently occur as a complication of operation while a rise of temperature after an operation may also be neurotic.

The author then referred to the peculiarities of some cases of phantom tumors and to one of hysterical aphonia following an operation on an adult male. He urged great care in operating, or even advising operation upon neurotic females in whom the subjective symptoms are often out of all proportion to the objective, especially as these women, not only are often willing to submit to grave surgical operations when their sufferings are entirely imaginary, but because they not infrequently derive considerable morbid pleasure from the procedure. In his opinion the osteopaths and Christian Scientists rather than a surgeon should undertake the treatment of these cases.

As an illustration of the willingness with which women in this condition will submit to an operation, he cited a case where a woman was anxious to have an appendectomy performed for appendicitis, although she had no signs of this disease.

The most skilled diagnosticians will often be misled by the mingling of real diseases with hysterical hyperesthesia, anesthesia, paresis and seemingly complete paralysis. As a valuable aid to diagnosis the author referred to Patrick's method of diagnosticating hysterical hyperesthesia or anesthesia by means of the shifting border of the affected area.

In Dr. Moore's opinion the surgeon most frequently meets with hysteria in joint and spinal ailments, and a surgeon should always remember to avoid mistakes in diagnosis and prognosis in the case of hysterical joints, as they bear such a close resemblance to joints the seat of disease. These hysterical joints often follow an injury, and there will be slight atrophy but no local rise of temperature; in fact, the temperature may be subnormal, no marked swelling but slight puffiness may be noted. There is usually marked restriction of motion, which is voluntary in character, however, and readily overcome when the patient's attention is directed to something else. The muscular spasm in these cases is more pronounced, and different in character from that in tuberculosis; and the deformity is often exaggerated, and differs considerably from that which is present in disease. Hysterical joints are, of course, most prominent in hysterical persons, but have been observed in persons not in any way hysterical. The prognosis in the case of an hysterical joint is good and it is very rare that organic changes occur.

The author then dwelt at great length upon various valuable means of treating these conditions — among others correction under anesthesia — but did not consider any cutting operation necessary. Hysterical patients, he observed, may develop a tubercular joint, but changes in the cord do not occur from hysteria; and besides hysterical spine is easily diagnosticated, as it bears no resemblance whatever to deformity as a result of disease.

The following officers were elected for the coming year: President, Dr. W. W. Keen, of Philadelphia; First Vice President, Dr. A. Vander Veer, of Albany; Second Vice-President, Dr. C. H. Mastin; Secretary, Dr. H. L. Burrell, of Boston; Recorder, Dr. DeForest

Willard, of Philadelphia; Treasurer, Dr. G. R. Fowler, of Brooklyn.

Delegate to the Association of American Physicians and Surgeons: Dr. Wm. M. Mastin; Alternate, Dr. F. H. Gerrish, of Portland, Me.

Place of next meeting, Chicago, Ill., time to be determined at a later date.

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THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECETARY.

Regular Meeting, January 18, 1898, the President, **Dr. Francis H. Davenport**, in the chair.

Dr. J. B. Swift reported

TWO CASES OF EXTRA-UTERINE PREGNANCY, ONE AT FULL TERM,[1]

and showed specimens.

Dr. W. F. Whitney, by invitation, spoke of

THE PATHOLOGY OF THE CONDITION.[2]

Dr. J. R. Chadwick spoke of the difficulties of determining how soon after pseudo-labor lithopedion formation is likely to have taken place. He instanced three cases upon which he had operated, one five months, one nine months and one two and one-half years after the death of the child. There was no trace of a deposit of lime salts in any of these cases. He feels somewhat conservative about operating upon such cases in the absence of symptoms.

Dr. M. H. Richardson rather inclined to early interference after spurious labor. When the diagnosis is made before rupture immediate operation is indicated. Death after rupture is sometimes so sudden that it must be due to peritoneal shock rather than to acute anemia.

Dr. G. J. Engelmann said that the idea of deferring operation after spurious labor even for years did not harmonize with his experience. It is well enough to wait for two or three months, if there are no symptoms. He regarded lithopedion as only one of the terminal forms of a retained fetus. He instanced a case, as an argument for early operation, in which he had seen the fetal bones discharged through the bladder and rectum after a long period of invalidism. The likeness between the decidua of extra-uterine pregnancy and that of normal pregnancy ceases between the fourth and the sixth weeks. After four or five months all resemblance is lost, as there is no longer the continual stimulation of the uterus as in normal pregnancy.

Dr. Whitney said the decidual membrane shows little difference in Dr. Swift's two cases, though they are separated by so wide an interval of time. The curette would enable a microscopist to make a diagnosis in doubtful cases if the membrane had not already been expelled and lost.

Dr. C. W. Townsend spoke of the frequency with which intra- and extra-uterine pregnancies are combined. A recent writer has collected twenty such twin pregnancies.

Dr. Chadwick asked whether adhesions were the rule or the exception.

Dr. Whitney said they were not usually seen about sacs that had not ruptured, but that they might be expected in cases of retained fetus.

THE BOSTON
Medical and Surgical Journal.

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THE MEDICAL SERVICE OF THE ARMY.

As in our editorial of last week we devoted some space to the medical aspects of modern naval warfare, it would seem only right that we should mention the care of the injured in case of battles fought on land. We are enabled to gain some definite ideas on this point from the statement prepared by Lieutenant-Colonel Forwood, Deputy Surgeon-General of the Army. As in the naval battle, the percentage of those fatally wounded on land will exceed any thing of which we have had previous knowledge. The modern rifle bullet will cut cleanly through the tissues, severing arteries in its passage, thus giving rise to most severe hemorrhages, but at the same time offering greater possibility to those who survive, for healing of tissues which have been so cleanly cut and not mangled as by the bullets used in the late war. When we read that five or six men placed in a row will not afford sufficient resistance, but that the rifle projectile will pass through them all one after the other, we can gain some idea of its velocity and force.

Since the number of wounded will be inevitably greater, the preparations for their care have been all the more thoroughly studied and planned for. The first duty of the medical corps during action is, of course, to remove the injured to some sheltered spot out of the line of fire. Here at once a problem arises because the range of the rifle is so great that such a spot will be hard to find, and the surgeons, themselves, will run a much greater risk of being shot than in warfare of the past. The small arms of to-day are said to carry three miles and the field cannon five miles.

To each regiment there is allotted one surgeon and three assistant-surgeons, one hospital steward and two assistants, and twelve privates. This is not a very large number of care-takers, when one realizes that in times of peace, there is, in most communities of the Eastern States, an average of about five hundred unmenaced persons to one physician and a large number of nurses.

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[1] See page 441 of the Journal.
[2] See page 441 of the Journal.

The plan, as at present outlined, is that the rear of each division of the army will be provided with dressing-places for emergencies, to which those wounded would be immediately brought. Considerably farther in the rear, there will be an ambulance station, where more detailed work of a surgical sort may be done. At a still greater distance from the field, will be three hospitals corresponding to the three brigades composing that division. These field hospitals will naturally be tents, each capable of affording accommodations for four hundred or more wounded. A large number of ambulances serve the purpose of transportation of the wounded from the front to the hospital. During action, the medical staff takes as sheltered a position as possible in the rear of its own regiment, in order the better to provide for the immediate wants of the wounded. It is intended that those surgeons who work directly behind the fighting line shall be provided with simple drugs for the relief of pain, shock, fainting, heat or exhaustion. They will also be provided with such surgical instruments as are required for minor operations.

Should the arrangements above detailed prove feasible in time of action, and we see no reason why they should not, it is evident that a hitherto unprecedented efficiency of the medical corps will be attained. A comparison is therefore of interest with the conditions which prevailed in the late Civil War. Apart from the entire lack of knowledge of the principle of antisepsis which entailed so much suffering — unnecessary from our present point of view — many wounded soldiers in that war received their first attention after travelling long distances to the permanent hospital. With no attention to cleanliness, and often with suppuration beginning, the unfortunate soldier received treatment only after a general septicemia had set in, which either ended his life or at least cost him a limb. All this will be avoided in these more modern times.

On the other hand, it must be remembered that the skill of the experienced surgeon will be much more often called into play, and that, on the whole, the number of patients under his care will be very much greater.

The work of the medical corps will also be increased, through the fact that the wounded will be scattered over a much greater area than has heretofore been the case, owing to the enormous distance at which a modern rifle projectile may prove fatal. The finding of the wounded, possibly under the fire of the enemy's guns, may well prove a test of courage as great as that called for in the more active and exciting engagement itself. In order to prevent a loss of identity of those killed in battle, it has been proposed that every soldier going into battle during the present war shall wear a small metal tag, about the neck, next the skin, bearing his name, company, regiment, and date and place of birth.

In addition to the surgical work, which must always form a large part of the army physician's duty, there is also to be considered that even more difficult task of prophylaxis. As is well known, scurvy, typhoid fever, dysentery, malaria, cholera, and notably in the present case, yellow fever and small-pox may offer as great a danger to the integrity of the army as the missiles of its enemy. We may likewise look for a very great decrease of this danger in the present war with our improved knowledge of bacteriology and hygiene, and with the means now at our disposal for combating these insidious foes. We feel sure that danger from these sources is relatively smaller than it formerly would have been. It would certainly be a reflection on our modern sanitary methods if yellow fever should prove so direful an enemy as contemporary newspapers might lead us to suppose.

To draw analogies between the Spanish soldiery and our own in the event of an occupation of Cuba during the summer months is manifestly absurd. From all accounts the Spanish army is poorly fed and demoralized and in no physical condition to withstand the inroads of disease. On the other hand, if our army goes to Cuba, it will go fully prepared to meet this danger as all others, and there can be no question but that it will be successful.

A further important adjunct to the work of the medical corps may be eventually the addition of a large number of trained nurses. Since the days of Florence Nightingale the services of women in military hospitals have needed no further demonstration. Such devotion no doubt exists equally to-day; and we shall have beside it all those advantages which come from a careful previous training in the treatment of the sick. As in our modern civil hospital, so in the extemporized hospitals of war, there can be no question that the presence of the skilled nurse will prove of great value to the physician and of great comfort to the patient.

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PHYSICAL EXAMINATION FOR THE VOLUNTEER SERVICE.

The large number of rejections of candidates for the volunteer service from the Massachusetts militia which have resulted from the physical examinations has proved very unpleasant for the rejected candidates, and has called attention to the need of similar examinations for candidates for the State militia. As many as twenty per cent. of the members of certain militia regiments who have volunteered have been rejected, and the percentage in all the regiments has been large.

If the State militia are intended, as they should be, to be capable of military service when required, then the physical examination required for enlistment should be just as thorough and searching as that for the regular army. The surgeon-generals of the State have for some time been endeavoring to secure rules requiring such examinations, but owing to the expense, or for some other reasons, their appeals have been unheeded. The present emergency has shown that their efforts have been well directed. If the militia organizations desire, as many of them naturally in time of war do, to enter the regular service with their present organization, then the physical standard required for enlistment in the militia must be as high as that for the regular army.

A regiment depends for its effectiveness upon the capacity of the individuals of which it is composed, as well as upon its thorough drill and organization. If large numbers of its members, when it is put upon a war basis, must be rejected by physical examination, then its organization must be broken up, and something of that perfection in drill, and of the *esprit du corps* which has resulted from long association, must be lost.

If, as the medical officers have urged, the physical standard for enlistment in the militia had been kept sufficiently high, much time and trouble would now have been saved, many disappointments avoided, and the militia organizations which volunteered as a body, could have gone practically unchanged into the regular volunteer army.

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MEDICAL NOTES.

Dr. William Osler is to receive the honorary degree of LL.D. from the University of Aberdeen.

The Ambulance-ship "Solace." — The ambulance-ship *Solace* has been fitted out under the terms of the Geneva Convention, will fly the Red Cross flag at the fore, and will render aid to friend and foe alike. Spanish warships, Spain being signatory to the Geneva Convention, cannot fire upon the *Solace.* though perhaps if they did it would not seriously interrupt her work.

Precautions against Yellow Fever. — Surgeon-General Wyman, of the Marine-Hospital Service, is perfecting plans to prevent the introduction of yellow fever from Cuba. Rigid quarantine regulations are to be enforced at Ship Island and Dry Tortugas, and Marine-Hospital inspectors are to be stationed at every point along the Atlantic Ocean and the Gulf of Mexico where troops will land or return from Cuba.

Bubonic Plague at Hong Kong. — The steamer *Columbia* which arrived at Tacoma, Wash., from the Orient on May 5th, reported that during the week previous to April 6th, cases of bubonic plague in Hong Kong had increased rapidly, and the Colonial Government was considering various measures for preventing a spread of the malady. The correspondent of the *Hong Kong Press* states that forty new cases of the plague were occurring daily.

The Marine-Hospital Service to Aid the Army and Navy. — Dr. Walter Wyman, Supervising Surgeon-General of the Marine-Hospital Service has notified the medical officers of the service that the United States Marine Hospitals are hereby made available for the reception of the sick and wounded of either the United States Army or the United States Navy, and that they are hereby directed, upon a written request of the proper military or naval authority, to receive and care for said patients; the Marine-Hospital Service to be reimbursed the actual cost of maintenance.

Personal Testimony as to Existence not Trustworthy. — Unconscious and unintended humor is, as has long been recognized, the richest. An English contemporary, as we recently pointed out, spoke of "the late Dr. Weir Mitchell," and in a bright, genial letter Dr. Mitchell writes the editor that he has never been "late," and is just now punctually present, etc. As it happened, Dr. Mitchell's letter was inserted first in the correspondence columns, and closely following the conspicuous and warning notice, *We do not hold ourselves responsible for the opinions of our correspondents.* This unintended addition of insult to injury hardly needs further editorial excuse. — *Philadelphia Medical Journal.*

A Gallant "Non-Combatant." — After Surgeon La Monte's admirable conduct on board the *Topeka*, how can the idea be entertained that staff officers are non-combatants? We mean, of course, non-combatants in the sense of not exposing themselves to peril. The *Topeka* was forced to pick up hastily a crew in a foreign port. The best she was able to do was to ship a brood of "wharf-rats" of various tints of villainy. They were in a semi-mutinous state all the way to New York. The only naval officers on board were the commanding officer, Lieutenant Knapp, and Surgeon La Monte, and these two gentlemen took turns, night and day, on the bridge. We do not mean to imply that such gallant actions are unusual in the medical corps of the navy; we simply make use of this recent instance to emphasize the fact that they are not. The truth is that nobody on board a man-of-war can properly be called a non-combatant. — *New York Medical Journal.*

Dr. Guiteras Ordered to the Front. — Dr. John Guiteras, professor of pathology in the University of Pennsylvania, has been instructed by the Surgeon-General of the United States Army to proceed to Tampa, Florida, to act as medical adviser to the commander of the army which it is expected will invade Cuba. Relative to the dangers which may beset troops in Cuba, and the precautions which should be adopted, Dr. Guiteras is said to have made the following statement: "It is possible to prevent the infection of military garrisons, though whether it can be done in a campaign remains to be seen. Yellow fever is circumscribed within certain areas, and if it is possible to keep the troops away from those areas there will be little danger of infection. Contrary to the prevailing idea, altitude does not govern the disease. There are no extremely high altitudes in Cuba, and yet there are places where there is no yellow fever. In some places on the coast the disease is not to be found. As a general rule the more important the town, the greater its commercial activity, the more infected it is. Yet a congregation of people in the interior could not originate yellow fever. The cities where the disease prevails are infected because they are permanently inhabited by a crowd. Still the disease may be carried to a garrison from an infected town. To guard against this the troops must be placed by themselves, in uninfected places, and they must not communicate with infected places. Then, too, no depot of supplies should be placed in an infected port. This is, of course, a desideratum that it may be difficult to obtain for strategic reasons. Ideal conditions are not always possible in a military campaign. Whether or not yellow fever can be kept from the troops depends entirely upon whether these plans can be carried out."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, May 11, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 62, scarlet fever 28, measles 123, typhoid fever 15.

The Norfolk South District Medical Society. — The Norfolk South District Medical Society, at the annual meeting held last week in Boston, elected the following-named officers: President, Dr. J. A. Gordon, of Quincy; Vice-President, Dr. G. W. Tinkham, of Weymouth; Secretary and Treasurer, Dr. J. F. Welch, of Quincy; Librarian, Dr. J. F. Welch.

NEW YORK.

Dr. Henry Appointed Surgeon of Volunteers. — Major-General Roe, in command of the New York Volunteer Regiments, has appointed Dr. Nelson H. Henry, Assistant Surgeon-General of the State, as surgeon on his staff, with the rank of Colonel. Colonel Henry is charged with the general supervision of the medical service of the camp and also with its sanitary and police conditions. The State Society of the Daughters of the Revolution, of which Mrs. Roe, the wife of the General, has recently been elected Regent, on May 6th sent the first relay of supplies promised by the various women's associations for the soldiers of the Army to the camps at Hempstead, Peekskill and Chickamauga.

The Sterilization of Milk begun at Randall's Island. — The Department of Charities has accepted the plant on Randall's Island for the sterilization of milk, which Nathan Strauss, recently President of the Board of Health, presented to the city, and on May 6th the plant was formally opened. It has a capacity for sterilizing sufficient milk for one thousand infants a day. There are at present six hundred children in the institutions on the Island, and the mortality has been very large among the inmates.

A Model Sanitarium for Tuberculosis. — At a meeting of the New York Academy of Medicine held May 5th, Dr. S. E. Solly, of Colorado Springs, read a paper on "The Use of Climate for the Tuberculous." In connection with this subject attention may appropriately be called to the good work being accomplished by the Sanitarium Gabriels, in charge of the Sisters of Mercy, near Paul Smith's Station in the Adirondacks. This institution has been in existence but a short time, and very little has been published in regard to it. There are now nearly one hundred tuberculous patients there, and it is stated that since August last there has been but one death among them. It has a well-equipped bacteriological laboratory and is furnished with all the modern accessories for the treatment of tuberculosis. The sun-parlor of the Infirmary was the gift of Ex-Governor Morton, the handsome dining-room was fitted up by Ex-Governor Flower, who is one of the patrons of the institution, and a fine new bathing establishment, provided with baths of various kinds, has just been presented by Mr. Henry D. Dickinson. The sanitarium is designed for the treatment of curable cases, not as a home for incurable ones, and for this reason each patient applying for admission is required to present a physician's certificate to the effect that there is reasonable ground to suppose that the disease has not reached an incurable stage.

Death of Dr. Quimby. — Dr. Isaac N. Quimby, one of the most prominent physicians in the State of New Jersey, died at his home in Jersey City on May 6th, of pneumonia. He was born in Bernardville, N. J., in 1831, and was a graduate of the Medical Department of the University of the City of New York. He was an active member of the American Medical Association for many years and a member of the International Medical Congress at London in 1881. Dr. Quimby was an ardent prohibitionist, and in 1884 was nominated for a Presidential Elector by the Prohibitionist Party. He practised for over thirty years in Jersey City, and leaves two sons, one of whom is a well-known physician in that city.

Death of Professor Lintner. — Prof. Joseph Albert Lintner, of Albany, formerly State entomologist of New York, died at Rome, Italy, on May 5th. Dr. Lintner's name was widely and favorably known, and he had rendered valuable services to the State in economic entomology.

A Diminishing Mortality. — There has been no marked changes in the rate of mortality in the city of late, although it continues to slowly diminish. Thus, in the four weeks ending April 23d, the number of deaths represented an annual death-rate of 18.62 per thousand of the estimated population, against 18.79 in the preceding four weeks. That the decrease is not greater is probably due to the fact that, on account of the exceptionally mild and pleasant weather throughout the month of March, the death-rate was unusually low. The most marked decrease in any of the infectious diseases is in measles. In the four weeks the number of cases reported was 2,056 cases, with 88 deaths, against 2,513 cases, with 100 deaths, in the preceding four weeks. Next to this comes diphtheria, with 840 cases and 155 deaths, against 1,028 cases and and 176 deaths. In pneumonia the deaths decreased from 801 to 776. The deaths from whooping-cough, on the other hand, increased in the four weeks from 48 to 61. The mortality from typhoid fever continues exceedingly small. In the four weeks referred to the average number of deaths was four, against six per week in the preceding weeks. In the week ending April 16th there was not a single death from typhoid reported in the entire Greater New York, and in the week ending April 23d there were but two deaths from it.

The International Medical Missionary Society. — Dr. George D. Dowkontt, of New York, has just returned from Washington, where he went as the representative of the International Medical Missionary Society, authorized to tender to the Government, on behalf of the Society, the services of a large number of surgeons, stewards and trained nurses. From the President and the authorities of the War and Navy Departments he received such assurances that on his return to New York preparations were at once set on foot for the organization of the contemplated work, under the auspices of a committee of which Dr. Stephen Smith, Dr. Dowkontt and Dr. B. C. Atterbury, of China, now in this country on leave, are members. The International Medical Missionary Society was organized in 1881 and incorporated under the laws of the State of New York in 1886. Dr. Stephen Smith, of New York, is President, and former Governor Pattison, of Pennsylvania, Vice-President of the Society. Gen. A. W. Greely is a member of the Advisory Council, and Mrs. Margeret Bottome, wife of Dr. Bottome, is President of the Woman's Branch.

The Directors of the Post-Graduate Medical School need not Reinstate Dr. Kelsey. — The Appellate Division to-day reversed an order which granted Prof. Charles B. Kelsey a writ of mandamus compelling the Directors of the New York Post Graduate Medical School and Hospital to rescind a resolution revoking his appointment as a professor of surgery and restoring him to the privilege and all the rights and privileges incident thereto. Justice Barrett wrote the opinion, which held that the by-laws of the corporation authorized the directors to remove a professor at pleasure.

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Miscellany.

THE LESSONS OF THE INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY AT MADRID.

Rarely, if ever, has a great scientific gathering taken place under circumstances so adverse as those surrounding the ninth International Congress of Hygiene and Demography, which was held in Madrid from the 10th to the 17th of April. Considering the extent to which the government element pervades all matters in Spain, it is a marvel that it was possible for it to meet at all at such a crisis. And yet, it did meet; and, although we may not be prepared to coincide altogether with the opinion of the acting president, Dr. Julian Galleja, that it would prove to be the most influential and far-reaching of all these congresses, there is no denying that it would have been a great success under any circumstances, and that under the exceptionally trying ones in which it was held its success was little short of phenomenal. It was attended by between fifteen hundred and two thousand members, including delegates from nearly every civilized country in both the Old and New Worlds, the United States being represented by Dr. Girard, of the army, and Dr. Tryon, of the navy, who appear by universal consent to have comported themselves under most trying circumstances in such a manner as to gain general approbation. It was unavoidable that, at such a time, some reference to the impending political thunderstorm should find utterance; but the speakers, one and all, bore practical witness to the great truth that science knows no distinction of race, class, creed, or country, but is catholic, one and indivisible, the striving of humanity at large on behalf of humanity at large. This is perhaps the greatest lesson which the ninth International Congress of Hygiene will teach us. It is curious that the enforcement of this lesson should have fallen especially upon the director of the Constantinople School of Medicine, General Mahmoud Pacha, who represented the Turkish government.

The opening address of Dr. Galleja was thoughtful and in every way admirable. He pointed out that sanitation was above all a social science, a science of the people, not merely of the savants. But it was not sufficient to inculcate sound sanitary principles; what was needed was to put them into application, and in doing this there were many obstacles to overcome — financial needs, vested and commercial interests, as well as interference with personal liberty and the sacredness of the home, both of which had at times to be set aside in the enforcement of sanitary principles. To effect this, the interested co-operation of governments was needed, and the greatest result of the congresses had been, in all probability, their influence upon the respective governments of the civilized world. A patriotic reference to the trial through which his country was passing, which, however, he assured his hearers, should not permit anything to be lacking to this solemnization of peace and concord, closed a remarkable address that was greeted with loud and prolonged applause. Among others who spoke at the opening session were Professor Brouardel, dean of the Faculty of Medicine of Paris, and delegates from Germany, Austria, Belgium, Japan, France, Great Britain, Hungary, the United States, Holland, Italy, Mexico, Switzerland, and the Ottoman Empire.

But not only was this political tension not allowed to interfere with the warm official interest of the authorities in this eminently pacific gathering, but the scientific loyalty of prominent personages united therewith to form an object-lesson. The special correspondent of the *Lancet* tells us that Dr. Amalio Gimeno, the general secretary, and Dr. Julian Galleja, the acting president of the congress, being candidates for a seat in the senate, and the elections being fixed to take place during the session of the congress, both showed their estimate of the primary importance of science to humanity by remaining at their posts at the congress in spite of urgent telegraphic appeals from their electoral committees to be present on election day with their constituencies. If, therefore, there were no other results of a more technical character accruing from the ninth International Congress of Hygiene at Madrid, it would yet remain remarkable for the fact that in a crisis of the greatest possible political tension and national excitement it had in a dignified manner illustrated by practical example the facts that science, as such, knows no country, and that there are men, even in countries not commonly held to be conspicuous for progress in the interest of humanity, with whom neither local interests nor personal ambitions can outweigh the sense of obligation to mankind at large. — *New York Medical Journal.*

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Correspondence.

[Special Correspondence.]

THE MORGUE IN PARIS.

Paris, April 25, 1898.

Mr. Editor: — Depending largely upon personal predilection, the morgue in Paris is attractive or repulsive to thousands of people annually. Many of the public visit this place out of morbid curiosity, many from curiosity of legitimate nature, others in fear and trembling lest the bodies there exhibited be those of loved friends or relatives. Probably no place in Paris has served the French novelist more frequently, more forbiddingly to the general reader than, since its construction, has the morgue.

This establishment has been in existence about thirty years. Its present condition is much younger, not more than fifteen years having elapsed since it was brought to its imperfect perfection, to its disappointing convenience of to-day. It is perhaps unnecessary to say that the morgue is the building to which all unidentified bodies found in Paris and its suburbs, in the river or on land, are sent. Bodies also whose indentity is undoubted but in which violence, poison, suicide by any method or means has been, or is suspected to have been, the cause of death, even dead fetuses whose history is not clear, are sent to the morgue. The body of a known individual is not exhibited to public view, but may be kept for medico-legal examination. Occasionally the cadavers of persons whose history is clear, the cause of the death of whom is known to be of an innocent nature, not necessarily involving a necropsy, are delivered to the friends without further formality. This procedure, however, probably is rare, because the death almost inevitably gives rise to questions which only an examination post-mortem can answer.

The morgue building is in the shape of a Greek tomb. It is situated at the upper point of the Ile de la Cité, directly behind the Cathedral of Notre Dame and rests upon long piles, the lower ends of which are constantly washed by the river Seine, which at this point has a rather rapid movement and flows on nearly all sides of the morgue. Repairs to the foundation are almost unceasing because the river steadily undermines the setting of the piles. Bodies are exposed to the view of the public in an apartment whose glazed front faces the street. A short partition hides the bodies from actual view of passers, but double doors of entry, always open, give ingress to a steady flow of people who have only to pass behind the partition and, standing between it and the windows of the dead room, they easily see the bodies upon narrow tables which slope towards the windows. The dead room is scientifically refrigerated and bodies remain without change an indefinite length of time. This arrangement is comparatively recent. Twenty odd years ago when the present structure was completed, the number of bodies annually received did not exceed five hundred. Since that time the number has doubled. Moreover, the number of legal autopsies has multiplied beyond convenience, for owing to the progress of science, these operations by accessory researches of microscopic, chemical and physiological nature have become more and more complicated. Such complications were unforeseen and nothing was provided for them. This state of things is due principally to the fact that Professor Brouardel so influenced and enlightened the Municipal Council and the Préfecture of Police that finally he was allowed to establish at the morgue a course of so-called "Medico-Legal Conferences," which in all their bearings are unique. Unknown bodies which are taken to the morgue, the majority of them coming from the river, are generally in a state of advanced decomposition. If it be possible, after proper washing, they are exposed to view in the exhibition-room in hope that some visitor may identify them. Otherwise, being undressed, they are put into the "cold boxes" of which there are only fourteen in a rear chamber. Not one of these boxes is ever vacant. These bodies are kept as long a time as it is possible to do so, with the expectation that the word "disappeared" may eventually be intelligently replaced by the word "dead," which would mean that identification finally has been achieved. Even *débris* of bodies are thus preserved and all these bodies and *débris* are photographed upon their arrival. As a hygienic measure the clothing of all recognized bodies is sent elsewhere every fortnight to be burned, whereas the garments of unknown bodies are ticketed and kept for twelve months as a later and possible means of identification, with reference to which nothing is neglected.

Every day a medical inspector visits the morgue, examines the newly arrived bodies and notifies the authorities of such as require medico-legal autopsy. It need not be pointed out that the families of the dead crowd upon the morgue, that they require space and, when the law takes from them the bodies of their friends for judiciary post-mortem examination, that a place of retirement is necessary for these people. No such convenience is possible and confusion and crowding become agonizing to the friends and irritating to the morgue officials.

Passing now to the course of instruction founded fifteen years ago by Professor Brouardel, Paris has every reason to be proud of it, for a similar means of education does not exist anywhere else in the world.

It is one of the *Cours fermés* and a special permission as well as a special card of admission are necessary for entrance. Physicians of any country are admitted upon presentation of such a card, to obtain which they must establish their identity and prove themselves graduates of known medical schools. In addition to this precaution a police officer at the door of entrance calls for the card at each visit and writes down its number upon a special list.

Passing through a narrow and dismal corridor the visitor enters the room in which the medico-legal conferences are held, where Claude Bernard once worked and where many a crime has been revealed under the post-mortem knife. It is well lighted by three scuttle windows in the sloping roof and by three double swinging windows in the side overlooking the Seine, and this light is its one redeeming feature. It is grimy, and grim and uncomfortable. An amphitheatre, perhaps six feet high in its most elevated perch, composed of narrow rises separated from each other on the edge of each by a painted board on iron supports, nearly fills all available space. The painted boards are just wide enough to hold a note-book. The students are supposed to stand. There are no seats. In fact the fortunate men sit on the fences or on the edges of the various steps, the others occupy their feet. Nobody is comfortable. The room contains accommodation for about 60 men in a standing position; but on Brouardel's day the average number present reaches 90 or 100 students. Imagine the discomfort! As for the quality of the atmosphere on such days I prefer to be silent.

Professor Brouardel is roped in, otherwise he would be unable to work, for the students, realizing that in order to prove that a murder has been committed and that a man is to be sent to the scaffold it is necessary to learn how to substantiate the accusation, crowd energetically about the table.

Because of lack of space in this room students are divided into series so that no one of them can attend more than twelve conferences. In spite of this, 200 to 300 men annually are refused cards of admission.

Under these conditions there is barely room enough about the immovable stone table for the operator and assistants. Instruments are abundant and good, otherwise all is primitive. A single cold-water faucet and bowl at one side, a small rubber tube depending from the rusty two-light gas-burners furnishes a stream of water. Hot water is brought in a pitcher. There is no possibility of making an examination of blood or a search for poison in a suspected case. One table three feet long holds scales, sponges and instruments and there are three or four small cupboards. There is room for nothing more. And this in Paris! The present building is so situated that it cannot be enlarged and the insufficience of space and inconvenience steadily increase.

For years Professor Brouardel has tried in vain to move the authorities to furnish more room in a building adapted to his work of instruction. Friends of his and of the course have written scathing pamphlets. Nothing which could arouse those in power to a proper conception of the great need of enlargement has been left undone and untried. A place for a new morgue has been chosen and, in association with architects, Professor Brouardel has devoted much time to the plans of a new building. The place chosen is nearly opposite the present morgue and is now occupied by a clump of old buildings which will be removed. It is central. In fact the address would be nearly the same as that of the morgue of to-day. The new structure would be close by the Palais de Justice.

How needful this change is may be seen in remarks of Professor Brouardel, who, in a report advising reconstruction, says: "For after making an autopsy at the morgue (the present one) the necessary microscopical, physiological and toxicological examinations are made elsewhere, some at the Préfecture, some at the old College Rollin; and we end in uncertainty. Multiplied transportations of bottles, of parts of the body, represent isolated work without direction; and, after inco-ordinated efforts, one finds it impossible to demonstrate that there is a culprit and, graver still, that only the innocent have been suspected. Moreover, these displacements (of suspected material) tend inevitably, on the part of the experts, to delays which, on account of those who are incarcerated under suspicion, are much to be regretted."

These unceasing endeavors to bring about the needed change have been strenuously pushed, and even though plans for a new building have been drawn and accepted, even though the new site has been found, nothing has been done by the authorities. Indeed, Professor Brouardel wrote me, "Things remain as they were fifteen years ago," and, "Nothing at present gives hope that for a long time to come will there be any modification."

No visitor who has made himself familiar with the medico-legal course at the morgue and who realizes its unspeakable advantages to students, to science, justice, education, as well as to the reputation of Paris and of France, fails to feel sad and indignant at this indolent, ignorant neglect of the requests and suggestions of a man so invaluable and deserving as is Brouardel, not to mention his collaborateurs. The course itself being not only unique but worthy of the highest admiration should be a source of pride to every intelligent Parisian. The dulness of those whose duty it is and who possess the power to permit erection of a new and spacious morgue is beyond understanding. Imagine such a course and conceive of its confinement to a mere den where space for even one microscope is lacking! Think of the wealth of specimens afforded by one thousand annual autopsies and only a couple of four-foot shelves to serve for collection, and you will easily comprehend the depression which present conditions must cause Professor Brouardel.

Scientific researches are manifold, for the Préfecture of Police has granted localities where vast laboratories are at the service of the experts who teach at the morgue and where students are allowed to be present during the examination of solids and liquids supplied by the body whose autopsy they have witnessed; nevertheless, all these disturbances encroach wofully upon the perfection of medico-legal instruction.

Returning, after this digression, to the autopsy chamber, we find its crowd of students and physicians (for men of all ages are there) sitting on the floor, on a fence, or standing, in any case in discomfort. Nearly every man present during the entire hour smokes cigarette, cigar or pipe. Nearly every man wears his hat, else how would he dispose of it? It is Brouardel's day. The room is jammed. Tobacco smoke and autopsy smells are but partially driven away through the open roof scuttles, which if the day be cold are shut. The atmosphere is far from agreeable. The men are chatting, reading medical journals, studying. Suddenly through a side door enters Professor Brouardel in white apron and skull cap, finishing his cigar, the butt of which he takes from its holder, which he returns to its case some five minutes after his talk begins. The audience receives him by a clapping of the hands, which is repeated at his departure. He is accompanied by clerk and assistant who makes the autopsy, the rougher work being done by the servant of the morgue, whose hands are clever in the use of the knife. The body to be examined is either already upon the table, or is then brought into the room in a pine box on wheels the lugubrious sounds of which echo through the room.

(*To be continued.*)

RECORD OF MORTALITY

For the Week ending Saturday, April 30, 1898.

Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping cough.	Diphtheria and croup.
New York . .	3,438,899	1240	441	12.32	19.20	1.52	1.92	3.36
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
Brooklyn . .	1,160,000	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	169	56	12.00	9.00	2.40	.60	3.00
Boston . . .	517,732	198	53	6.89	15.90	—	.53	2.65
Cincinnati . .	405,000	136	—	2.22	17.02	—	.74	.74
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	95	33	14.84	13.78	5.30	2.12	3.18
Washington .	277,000	90	23	12.21	8.88	1.11	1.11	1.11
Milwaukee . .	275,000	—	—	—	—	—	—	—
Worcester . .	105,050	30	19	15.78	31.56	—	—	—
Nashville . .	87,754	35	11	8.58	19.72	—	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Lowell . . .	87,193	38	10	2.63	15.78	—	—	—
Cambridge . .	86,812	18	3	16.66	11.11	—	5.55	5.55
Lynn	65,220	14	6	—	21.42	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	14	5	—	7.14	—	—	—
Lawrence . .	55,510	23	—	—	8.70	—	—	—
Springfield . .	54,790	7	2	14.28	14.28	—	14.28	—
Holyoke . . .	42,364	8	2	25.00	25.00	—	—	12.50
Portland . . .	40,000	—	—	—	—	—	—	—
Salem	36,062	5	0	—	20.00	—	—	—
Brockton . .	35,853	9	3	—	33.33	—	—	—
Malden . . .	32,894	16	1	12.50	6.25	6.25	—	6.25
Chelsea . . .	32,716	12	0	16.66	25.00	8.33	—	8.33
Haverhill . .	31,406	9	4	—	11.11	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	—	—	—	—	—	—	—
Taunton . . .	27,812	10	3	—	10.00	—	—	—
Quincy . . .	22,562	5	2	20.00	20.00	20 00	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	3	2	—	—	—	—	—
Everett . . .	21,575	6	3	—	16.66	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Newburyport .	14,794	5	1	—	—	—	—	—
Amesbury . .	10,920	—	—	—	—	—	—	—

Deaths reported 2,285; under five years of age 695; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough,

erysipelas and fevers) 245, acute lung diseases 396, consumption 288, diphtheria and croup 60, whooping-cough 36, diarrheal diseases 32, cerebro-spinal meningitis 29, scarlet fever 27, measles 24, typhoid fever 21, erysipelas 6.

From cerebro-spinal meningitis New York 13, Washington 6, Baltimore 4, Boston and Providence 2 each, Worcester and Holyoke 1 each. From scarlet fever New York 20, Baltimore 3, Boston, Washington, Melrose and Westfield 1 each. From measles New York 21, Baltimore, Washington and Melrose 1 each. From typhoid fever New York 9, Pittsburg 4, Boston 3, Providence 2, Lowell and Cambridge 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending April 23d, the death-rate was 18.1. Deaths reported 3,905; measles 211, whooping-cough 121, diphtheria 48, diarrhea 32, fever 31, scarlet fever 28, small-pox (Sunderland) 1.

The death-rates ranged from 8.4 in Croydon to 24.6 in Sunderland; Birmingham 18.9, Bradford 20.5, Bristol 16.6, Cardiff 14.4, Gateshead 18.6, Hull 15.7, Leeds 20 5, Leicester 18 5, Liverpool 22.7, London 17.9, Manchester 20.2, Newcastle-on-Tyne 23.8, Nottingham 17.9, Portsmouth 10.9, Salford 21.0, Sheffield 19.5.

METEOROLOGICAL RECORD

For the week ending April 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S ..24	29.77	46	48	44	98	100	99	N.E.	N.	13	9	R.	R.	1.94
M..25	29.94	41	44	38	91	88	90	N.E.	N.E.	12	15	O.	C.	.64
T ..26	30.20	40	43	36	86	88	87	N.	N.E.	12	12	O.	F.	.06
W..27	30.32	38	43	34	74	75	74	N.E.	N.E.	15	24	C.	O.	
T ..28	30.01	38	40	35	81	100	90	N.E	N.E.	34	25	O.	R.	.79
F...29	29.70	40	43	38	95	100	98	N.E.	N.W.	22	8	R.	R.	.46
S...30	29.88	54	66	43	73	65	69	N.W.	N.W.	15	12	C.	C.	
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* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 30, 1898, TO MAY 6, 1898.

Acting Assistant Surgeon H. W. Danforth, U. S. Army, will proceed from Washington, D. C., to Tampa, Fla., and report in person to the commanding general of the troops at that place for duty.

Major Louis Brechemin, surgeon, is relieved from duty at Fort Sherman, Idaho, and ordered to Vancouver Barracks, Wash., for duty, relieving Captain Frederick P. Reynolds, assistant surgeon.

Captain Reynolds, on being thus relieved, will repair to Washington, D. C., without delay and report in person to the Surgeon-General of the Army, for assignment to duty.

Acting Assistant Surgeons John Guiteras and W. W. Calhoun, U. S. Army, will proceed from Washington, D. C., to Tampa, Fla., and report in person for duty to the commanding general of the U. S. troops at that place.

Captain Charles Willcox, assistant surgeon, is relieved from duty at Fort Bliss, Tex., and ordered to report in person to the commanding general of troops in the field at Mobile, Ala.

Major William B. Davis, surgeon, is relieved from duty with the 19th Infantry at Mobile, Ala., and ordered to Fort Myer, Va., for temporary duty.

First-Lieut. William E. Richards, assistant surgeon, is relieved from duty at Fort Apache, Ariz., to take effect upon the arrival at that post of Captain Edward Everts, assistant surgeon, and will report in person to Major-General John R. Brooks, commanding Camp George H. Thomas, Chickamauga, National Park, for duty with troops in the field.

Acting Assistant Surgeon Francis Lieber, U. S. Army, will proceed from this city, Washington, D. C., to Fort Clinch, Fernandina, Fla., and report in person to the commanding officer of that post for duty.

First-Lieut. James S. Wilson, assistant surgeon, will be relieved from duty at Fort Caswell, N. C., upon the arrival at that post of Acting Assistant Surgeon Frank Roberts, and will report in person for duty to the commanding general of the troops in the field at Chickamauga, National Park.

Colonel Charles R. Greenleaf, assistant surgeon-general, having reported in person to the Surgeon-General of the Army, the Secretary of War directs that he report in person to the Major-General commanding the Army, for duty on his staff as chief surgeon of the troops in the field.

Captain Edward C. Carter, assistant surgeon, having reported in person to the Surgeon-General of the Army, is assigned to duty as assistant to the attending surgeon, Washington, D. C.

Major Alfred C. Girard, surgeon, having reported to the Surgeon-General of the Army, will proceed to West Point, N. Y., and report in person to the superintendent of the U. S. Military Academy, for temporary duty at that post.

Major George H. Torney, surgeon, is relieved from duty at the U. S. Military Academy, West Point, N. Y., to take effect upon the arrival at that post of Major Girard, and will proceed to New York City and take charge of the hospital ship "Vigilancia," under detailed instructions from the surgeon-general.

CIRCULAR OF NAVY DEPARTMENT.

Bureau of Medicine and Surgery,
Washington, D. C., May 4, 1898.

Gentlemen: — The Bureau very much regrets that it is obliged to discontinue sending the weekly list of changes in the Medical Corps of the Navy until such time as there is a material decrease in the amount of work taxing its limited force.

The same data can be obtained from the *Army and Navy Journal* published in New York, or from the *Army and Navy Register* published in this city. Both of them are weekly publications, and it is hoped that you will be able to continue printing the list from that source.

Respectfully yours,
W. K. Van Reypen, *Surgeon-General, U. S. Navy.*

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, May 16th, at 8 o'clock.

Dr. J. Collins Warren will read a paper on "The Surgery of Gastric Ulcer, with Report of a Case of Gastrolysis."

Dr. J. H. Wright: "Report of a Case of Mycetoma (Madura Foot)," with lantern slides.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, May 18, 1898, at 8 p. m.

At 8 p. m. Short communications by Drs. Badger, Curry and Greenleaf.

At 8.30 p. m. Paper by Dr. Morton Prince: "The Pathology, Genesis and Development of some of the more Important Symptoms in Traumatic Hysteria and Neurasthenia."

E. W. Taylor, M.D., *Secretary*, 416 Marlborough St.

New Hampshire Medical Society. — The one hundred and seventh anniversary meeting will be held on Thursday and Friday, May 26 and 27, 1898, in the new G. A. R. Hall, entrance Pleasant Street, Concord, N. H. The officers of the Society are: President, Moses C. Lathrop, M.D., Dover; Vice-President, George H. Saltmarsh, M.D., Lakeport; Treasurer, M. H. Felt, M.D., Hillsborough Bridge; Secretary, Granville P. Conn, M.D., Concord.

Alumni Meeting. — The annual meeting of the Alumni of Dartmouth Medical College will be holden at the Eagle Hotel, May 26th, at 5.30 o'clock p. m., and will be followed by a banquet. Circular announcement will be made to the Alumni by Prof. W. T. Smith, Secretary.

Massachusetts Medical Society. — One hundred and seventeenth anniversary. The annual meeting will be held at 9 o'clock a. m., Wednesday, June 8, 1898, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held in the same building, on the preceding day, Tuesday, June 7th, at 2 o'clock p. m. The Shattuck Lecture will be given at 8 o'clock, Tuesday evening, in the same building, after which a reception will be held by the Society.

Francis W. Goss, M.D., *Recording Secretary.*

The American Orthopedic Association will meet at Boston, Mass , May 17, 18 and 19, 1898. The programme includes morning sessions at the rooms of Boston Society for Natural History, and visits to the various hospitals of the city and to the Harvard Medical School. The programme offers a large number of papers of interest.

Address.

PATHOLOGY IN ITS RELATION TO ORTHOPEDIC SURGERY.[1]

BY R. W. LOVETT, M.D., BOSTON.

It is my pleasure and privilege to bid you welcome to this the twelfth annual meeting of our Association. Many of you will recall the questions which arose in 1887 as to the advisability of forming this Association and the opposition which it met in its early days. Time enough has elapsed since then for us to set a critical estimate on its work and its position. The work, to be sure, is our own, and for that reason we are not perhaps the best judges of it; but if we err on the side of being too critical in our attempt to estimate it, no harm can result from the effort. The position of the Association in the medical world speaks for itself. The time is past when any vindication is needed either of the American Orthopedic Association or of American orthopedic surgery.

Twenty-five years ago the first chair of orthopedic surgery was founded in Bellevue Medical College, and was filled by Dr. Lewis A. Sayre. To-day instruction in orthopedic surgery is announced in the catalogue of at least forty-two of our American medical schools, embracing the prominent ones in Boston, New York and Philadelphia, as well as others in the South and West. Instruction in orthopedic surgery is given in eleven of our largest cities by twenty-three members of this Association, yet there are some prominent medical schools in which no special instruction is announced in orthopedic surgery to which I invite your attention. Some of these are as follows: Johns Hopkins University (Baltimore), University of Maryland, University of Vermont, University of Michigan, Tulane University.

It should be our effort both by our personal endeavor and by the character of our work to bring it about that these medical schools shall find necessary such an addition to their course of instruction.

This Association has proved not only a bond of union but a stimulus to all of us. The ten volumes of its "Transactions" constitute modern American orthopedic literature. All this achievement brings with it responsibility; and we stand as an organization to-day the custodians of the future of orthopedic surgery in America, pledged by our past work to do in the future our very best. We cannot escape the trust; it is ours by right. It is not a responsibility with which we can deal lightly. The situation demands our most careful and thoughtful consideration. If there are respects in which our work can be extended, we must recognize it. If the surrounding conditions have changed, we must realize the fact and adapt ourselves to them.

In looking over our volumes of "Transactions" one finds papers dealing with the clinical aspect and mechanical and operative treatment of almost every condition known in orthopedic surgery. The ground is thoroughly, practically and scientifically covered by your work. This fact and the comparative scarcity of papers on the experimental and pathological side of the subjects in these "Transactions" leads me to suggest to you, what you already appreciate, that there lies ready a field of work of equal importance, which is in need of cultivation. In this matter the conditions have changed of late years so far as we ourselves are concerned. In the early years of our Association our first duty was very naturally to go over and investigate the treatment and clinical aspect of the common affections that we treat. But now that this has been so thoroughly done it seems to me that we may pause to ask, if, in the natural sequence of events, there is not a new line to be followed in much of our future work following the lead set us by some of our members in the last two or three years.

Certain general considerations bear on this subject:

General surgery and medicine are advancing rapidly on new lines in the later years. A pathological basis is being sought for, and in certain directions is being established; bacteriology has modified all things; serum therapy has arisen, and has accomplished much. A pathological laboratory is a part of the modern hospital outfit. The work in greatest demand is no longer the elaboration of symptoms and the collection of cases, but the work which seeks rather for the causes of symptoms and for the scientific explanation of the conditions found.

The symptoms of malaria are of interest chiefly when interpreted as phases of the life history of the organisms that cause them. Here, for example, study is directed not to the symptoms but to what they mean.

Anemia is no longer discussed in the light of its symptoms, but in the more intelligent terms of a blood-count. Peritonitis is not any longer spoken of as a vague idiopathic condition so much as the result of certain individual processes which are carefully sought for at autopsy, so that another time the symptoms may be more accurately interpreted in pathological terms, in time, if possible, for successful surgical intervention.

The practical medical world is seeking for causes more every year in the autopsy-room and in the laboratory. American orthopedic surgery cannot escape, nor has it escaped, this tendency; we, too, must progress by an elaboration of the pathological basis, and this line of work naturally falls on us.

When most of us were receiving our medical education pathology was not particularly prominent, and we had comparatively poor facilities for fitting ourselves in this branch. When modern orthopedic surgery received its impetus from Sayre and Taylor, there was little or no pathology of joint disease or bone tuberculosis, and they bent their energies to the mechanical and practical side; they shaped American orthopedic surgery, and it still feels their impetus and has followed their lead in great part. But the conditions have changed; a pathology has been elaborated, and its relative importance is vastly greater. To elaborate the real basis of our specialty—of any specialty—is one of the lines on which the best progress is made; without a pathological basis the best scientific work cannot be accomplished.

As orthopedic surgeons where our knowledge of underlying conditions is vague, we disagree as to therapeutic measures, and our results are less certain than where we know accurately the pathological conditions with which we are dealing. As an example of the class where our pathological knowledge is wanting in accuracy and detail, take hip disease. We know, and we have had formulated for us, the general process going on in the hip-joint; but what we know came rather from the work of König, Volkmann, Krause,

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[1] President's Address delivered before the American Orthopedic Association, Boston, Mass., May 17, 1898.

Lannelongue, G. A. Wright, and others, than from our own pens. An immense number of cases of hip disease must yearly come under the care of members of this Association, yet no important addition to our knowledge of the pathology of hip disease has been made since Gibney's book appeared fourteen years ago. We have not yet learned to put together clinical phenomena and pathological findings; we do not yet know, for example, what acute malpositions of the hip mean in pathological language — why one hip should be everted and another flexed. Of the symptoms and cause of acetabular hip disease we know next to nothing. Instances have occurred where, in cases severe enough to demand excision, the head of the femur has been removed and the acetabulum left; and pathological examination has shown that the head of the femur was never the cause of the disease, but that it was acetabular from the first. Certain surgeons assert their ability to diagnosticate acetabular hip disease, but this ability is disclaimed by those whose opinion has most weight with us. We lack here, as we lack at many points in orthopedic surgery, that exact pathological knowledge which would interpret for us clinical phenomena — our indications for excision of the hip are hazy, chiefly I think because we do not know just what certain symptoms mean in pathological language.

As an example of the class of subjects where our pathological knowledge is accurate, turn for a moment to one of the most satisfactory operations in orthopedic surgery, the correction of severe club-foot. We are fairly well agreed as to indications for operation; we differ somewhat in details, but in general our procedure is much the same; our results are admirable, almost uniformly so. But here we know with just what we are dealing; the bony changes are formulated. Any book on orthopedic surgery figures the bones; the clinical phenomena fit with the pathological changes. Precision and success mark our work under these conditions.

There are few problems in surgery or medicine more interesting or more in need of investigation than those which lie at the root of many of those conditions which as orthopedic surgeons we constantly meet. Some of those are conditions which, in certain aspects, attract the attention of the general surgeon or the physician or the neurologist; others depend almost wholly upon ourselves for their elucidation. Of these conditions which demand our investigation it seems to me that first comes the need of better pathological knowledge of inflamed, irritated and neurasthenic joints, especially joints affected by rheumatoid arthritis and syphilis. Joint tuberculosis comes next in its demand for the further search as to its methods of invasion and extension, and especially for an exact pathological interpretation of common symptoms.

Of the real pathological condition which causes flat-foot, in its early stages, we know very little, and with regard to static deformities there is very much to be done in the way of acquiring precise knowledge.

We know next to nothing as to the determination of the causation of the deformities in rickets and their prevention, and very little as to the real cause of the bony changes in rickets. Infantile paralysis stands in need of investigation as to its possibly infectious character and its etiological cause.

There is no need of the formulation of further defects in our knowledge; you know them as well as I. The present spirit of progress in medicine and surgery demands exact pathological knowledge and the scientific demonstration that certain symptoms are associated with certain lesions. That must form part of our work.

If I have stated the case fairly, and I have tried to be over-critical in speaking of our own work, there is a chance for us to contribute most valuably to orthopedic surgery, not only in the same lines as before, but particularly by the development of lines of work seeking for the causes and pathology of the affections that we treat.

It is obvious that we cannot, as a rule, educate ourselves at this date into being expert pathologists or bacteriologists. We have, as a rule, neither the time nor the opportunity; we have other demands upon our time, and we should not do it well; we could not compete in technique or thoroughness with the better class of young men leaving our medical schools every year. To educate ourselves to a point where our opinion would be of value, for instance, in the examination of a section of tuberculous bone, means months or years of work. It presupposes a training in modern histology and an understanding of degenerative, inflammatory and reparative processes as a preliminary to approaching the study of bone tuberculosis. Where we are so circumstanced that we can acquire this training or where some of you already have it, the road is clear. But with most of us the detail must be done by other hands.

Having once determined that our operative material, at least, shall be used for pathological purposes, it is not generally hard to find trained assistance in bacteriology and pathology. Young men are at hand almost everywhere, and never was there a better opportunity for them to do creditable work than in these fields of which I have been speaking. We must know enough pathology to direct the work and formulate the lines of investigation, as well as to set a value on the results.

It seems to me, next, that we should scrutinize most closely applicants for membership in this Association, and should insist on a basis of scientific training and acquirement. Realizing that it is not in the power of many of us to do this sort of work in the laboratory unaided, we should select from among our applicants at least some who, by their scientific training and work, are likely to be contributors in this regard to American orthopedic surgery. All this presupposes, however, on our part united action and a certain change of attitude. American orthopedic surgery stands pre-eminent on its mechanical and practical side. My plea to-day is for a working out of a more exact scientific basis than we now have, which can only come from accurate etiological and pathological knowledge. Elaboration of this line of work would, it seems to me, make us not only contributors in a wider sense but dignify and broaden the speciality.

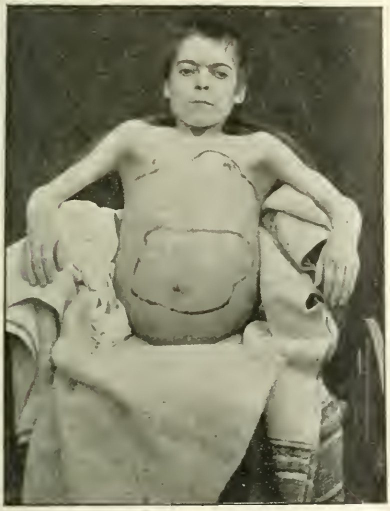
DR. DALAND HONORED IN RUSSIA. — Dr. Judson Daland has received official notification of his recent election as an honorary member of the Therapeutic Society of the University of Moscow, Russia. We believe that Dr. Daland is the only physician in this country who holds this honor, and we beg to offer our congratulations.

Original Articles.

OBLITERATIVE PERICARDITIS A CAUSE OF HEPATIC ENLARGEMENT AND ASCITES, WITH REPORT OF A CASE.[1]

BY RICHARD C. CABOT, M.D.,
Physician to Out-Patients at the Massachusetts General Hospital.

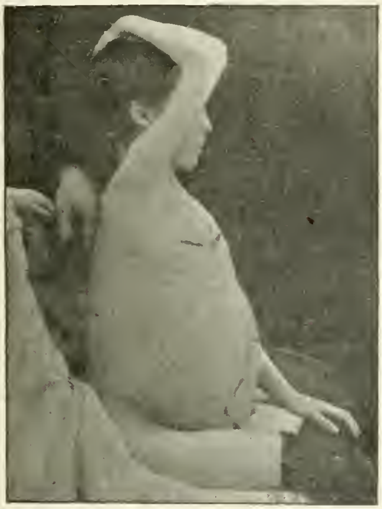
E. H., a boy of eighteen, entered the Massachusetts General Hospital, February 2, 1893, in the service of Dr. F. C. Shattuck, by whose kindness I am permitted to report the case. There was nothing significant in the boy's family history. He had measles at seven, and says he has never been as well since. Six years ago a physician told him that his liver was enlarged and four years ago he noticed swelling of his belly. It reached its present size (see illustrations) in a few weeks; there has been but little change in it since. Occasionally his feet have been swelled for short periods.



All these symptoms have troubled him but little. The reason for his coming to the hospital was cough, which had troubled him on and off for three years, but worse of late. Cough was usually dry. Appetite, digestion, bowels and sleep were all right, and until very lately he had worked in his father's store.

Physical examination showed a boy very backward in his development, which corresponded to that of most boys of twelve. He was considerably emaciated. The great prominence of the belly (see illustrations) was due partly to enlargement of the liver, which extended a hand's breadth below the navel and reached to the fourth rib above; partly to a large accumulation of fluid which made the belly flat on percussion except over a small area situated about the navel when he lay on his back, and shifting to whichever side was uppermost when he turned over. The surface of the liver was apparently smooth, its edge easily felt. No glands, nodules or areas of increased resistance were palpable elsewhere. There was no tenderness anywhere. No enlargement of the spleen was demonstrated.

There was evidence of considerable fluid in the left chest — dulness, and absent breathing and voice-sounds up to the third rib in front and midscapula behind. This made it impossible accurately to determine the size of the heart, especially as the apex beat could be neither seen nor felt. The apex sounds were loudest in the fourth interspace, one-half inch inside the nipple — the heart not being pushed to the right by the pleuritic effusion, so far as could be determined. The sounds were feeble but clear, the pulmonic second sound somewhat accented.



The left lung was apparently compressed by the fluid in the pleura; for there was bronchial breathing and increased voice-sounds over that part of the chest not occupied by fluid. Whether there was any fluid in the right chest was hard to determine, on account of the (apparent) enlargement of the liver upwards. Over the upper half of this lung the breathing was puerile, with many medium, moist râles — signs interpreted as compensatory emphysema and edema.

There was no edema of the legs.

The urine showed the characteristics of renal congestion.

The boy could not breathe except in a sitting position; and in this position he sat, uncomplaining, either in a chair or in bed until his death on March 29th, eight weeks from the time of entering the hospital. He had some diarrhea — three to five loose movements daily — during the whole of this period despite various efforts to check the increased peristalsis. Cough was at times very troublesome and never absent. He often spat up four or five ounces of nearly pure serous fluid during the night.

The abdomen was tapped three times and the left chest once. About four quarts were obtained each time from the belly and two from the chest. The fluid was about the same at all the tappings — approximately 1.008 in gravity, with a relatively small percentage of albumin, evidently a transudation.

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[1] Read before the Boston Society for Medical Improvement, January 24, 1898.

An interesting feature of the case was the occurrence of transient swellings in the parotid region lasting three to eight days. Such swellings have been noticed in connection with a variety of abdominal diseases.

Towards the end of life his breathing grew quicker and shallower, and the evidences of pulmonary edema increased. Pain was absent throughout. The treatment was purely palliative and expectant. Death occurred apparently from pulmonary edema and exhaustion.

The *diagnosis* at the time of death was entirely uncertain. The absence of any history of alcohol and of any history or lesions of syphilis, congenital or acquired, made cirrhosis of the liver unlikely. There did not appear to be sufficient evidence of cardiac or renal disease to explain the signs. Tubercular peritonitis seemed unlikely in view of the nature of the fluid obtained by tapping and the absence of nodules or masses in the abdomen after tapping. The sputa was repeatedly examined for tubercle bacilli with negative results. The possibility of a new growth in or near the liver and pressing on the portal radicles or otherwise obstructing the portal circulation could not be excluded, and was considered on the whole the most likely diagnosis.

Autopsy, by Dr. W. F. Whitney, showed the following:

Heart of normal size; muscular substance presents nothing abnormal.

Pericardium entirely obliterated by firm fibrous adhesions; in the upper part a small, cheesy nodule.

Left lung retracted against chest wall into a mass the size of the fist and covered with dense fibrous adhesions. On section airless, dark red, looking like a spleen.

Right lung also somewhat compressed. Considerable fluid in both pleural cavities.

Liver greatly enlarged; nutmeg section surface

Kidneys dark red in color, with evidence of abundant blood.

Diaphragmatic muscle fibres in a state of marked fatty degeneration.

Diagnosis: Chronic obliterative pericarditis, probably of tubercular origin; chronic pleurisy, with double hydrothorax, and splenification of the left lung; chronic passive congestion of liver and kidneys.

Pick [2] reports three similar cases.

Case I. Waiter, forty-seven. June, 1889, pericarditis. March, 1890, left pleural effusion; enlarged liver, ascites. Abdomen tapped six times in 1890 to 1892. Heart negative except for faintness of the sounds. Diagnosis, cirrhosis of the liver. Death, November, 1892, three and a half years after his pericarditis. Autopsy: Obliterative pericarditis; left lung compressed against chest wall and splenified; pleural cavity obliterated (exactly as in Dr. Shattuck's case); nutmeg liver, showing microscopically signs of chronic passive congestion with secondary increase of connective tissue; no evidence of primary cirrhosis.

Case II. Man of twenty-six. Swelling of abdomen for eight years, supposed to be obesity. In 1888 began treatment for this at the Marienbäder, but the size of the belly increased and cyanosis and dyspnea supervened, so that the treatment was hastily abandoned. Veins of *upper and lower* extremities dilated; liver enlarged; ascites. Tapped repeatedly. Heart not enlarged; no murmur. In the next three years increasing dyspnea, ascites, edema and hepatic enlargement. The diagnosis was at first cirrhosis of the liver, later tubercular peritonitis. A few months before death, which occurred in December, 1892 (twelve years from the first enlargement of the abdomen), a paradoxical pulse and an apex-presystolic murmur were noted; yet at the time of death the diagnosis rested: "cirrhosis of the liver." Autopsy showed obliterative pericarditis, with extensive calcification of the exudate; liver of chronic stasis; double hydrothorax.

Both these patients were moderate drinkers — not excessive — so that the etiological suggestion was equivocal. In both something closely resembling a primary cirrhosis was finally established by the prolonged stasis and irritation in the liver due to the insufficient cardiac power.

In the third case, Pick was enabled by his experience in the other two, to make the diagnosis during life.

Case III. A man of twenty-four had complained for two years of dyspnea, palpitation and swelling of the abdomen. Seen in February, 1894, with considerable enlargement of the liver, ascites, edema of the scrotum and feet. Heart-sounds clear; apex beat not to be seen or felt. Diagnosis at first, hepatic cirrhosis. Repeated tappings necessary. In 1895 occasional friction sounds over the heart suggested the diagnosis of pericarditis. Death, September, 1895. Autopsy: Total obliteration of the pericardial sac, with calcification, so that the heart was almost cased in stone; double hydrothorax; secondary connective tissue overgrowth in liver.

Pick also mentions that he has seen two other cases not yet fully reported.

Most text-books and works on the heart make no mention of such a connection between chronic pericarditis and secondary interstitial hepatitis with enlargement and ascites, but a certain number of isolated cases are recorded.

Weiss [3] mentions the case of a girl of fourteen with enlarged liver and spleen, slight jaundice, and marked ascites, but without edema of the legs, in whom physical examination showed nothing wrong with the heart, and in whom the diagnosis of cirrhosis of the liver was made. Autopsy showed a chronic obliterative pericarditis and the remains of old pleurisy and peritonitis. The liver was enlarged and firm, but not cirrhotic to the naked eye. Chronic renal congestion was present.

Wagner [4] records a case of marked ascites in a man of thirty-five — not a hard drinker and without venereal history. The liver was enlarged. Heart-sounds feeble but clear. Tapping required four times in six months. The diagnosis made was: "Cirrhosis (?)" (*vielleicht Lebercirrhose*). Autopsy: Chronic tubercular pericarditis (fibrinopurulent), miliary tuberculosis. No evidence of tubercular peritonitis. Both pleural cavities obliterated. Pigmented scars and small cheesy patches in the lungs. Liver reaching a hand's breadth below the ribs; "nutmeg" section-surface, with a few fresh miliary tubercles. No cirrhosis, macroscopic or microscopic. Here the obstructed pulmonary circulation doubtless contributed largely to the weakness of the heart.

Liebemeister describes a case of chronic pericarditis with dilatation of both ventricles, in which edema of the extremities accompanied the enlargement of the liver and the ascites, but in which the edema of the extremities disappeared under the use of digitalis, while the ascites persisted.

Weinberg [5] narrates two cases of tubercular pericarditis with obliteration, and large ascites, one tapped fifteen times. In both the liver was greatly enlarged. In one an exploratory laparotomy was done, and the surface of the liver is noted to be "not quite smooth."

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[2] Zeit. f. klin. Med., vol. xxix, 1896.

[3] Wien. med. Jahrb., 1876, p. 1.

[4] Deutsch. Archiv. f. klin. Med., vol. xxxiv, p. 536, 1884.

[5] Munch. med. Woch., 1884, Nos. 46, 47.

Most[6] has reported two and Rumpf[7] one similar case; and Unverricht,[8] in a review of Most's article, speaks of the association of obliterative pericarditis and ascites as not uncommon.

Neusser[9] mentions a case of obliterative pericarditis with ascites and edema, the ascites preceding the edema by some time and leading to a diagnosis of hepatic cirrhosis, which autopsy did not confirm.

V. Schrötter[10] mentions a similar case in a young girl.

Rosenbach[11] mentions the case of a boy of ten with a puzzling enlargement of the liver and ascites, without any edema elsewhere, in whom at autopsy the only lesions were an obliterative pericarditis, with a nutmeg liver and perihepatitis.

Curschmann[12] refers to a woman of fifty, in whom ascites of unknown origin developed and persisted between tappings for six and one-half years. Autopsy showed obliterative pericarditis and obliterative right pleurisy with perihepatitis.

In the eighteen cases here collected the absolute latency of the pericarditis is important, but not on the whole surprising. I have watched a number of cases with Dr. F. C. Shattuck in which, during the course of a pneumonia, he was on the lookout especially for the advent of a pericarditis and examined carefully for it each day in vain; yet at the autopsy the pericarditis was found to have crept in.

The weakening of the apex impulse was the only sign present in the case of adhesive pericarditis here presented; and such weakening is in no way distinctive, but occurs in various other conditions.

The diagnosis can hardly be made from physical examination of the heart, unless systolic retraction at the apex, paradoxical pulse or a pericardial friction is present. The history of previous pericarditis and the absence of alcohol or syphilis in the antecedents might help us.

That weakness of the heart brought on by its adhesions to the pericardium should produce hepatic stasis and ascites without edema of the legs or anasarca is strange, but not at all without precedent in literature and experience. It has been repeatedly recorded in cases of valvular or parietal disease, but most frequently in adhesive pericarditis. I stated at the outset that there was little or nothing in the text-books upon the topic of my paper. This statement referred to the association of hepatic enlargement with adhesive pericarditis. That the latter often produces *ascites* is mentioned by Strümpell and by Leube in their text-books. The most acceptable explanation of this special localization of the passive congestion in the portal system is that the stasis in the liver gives rise to permanent tissue changes there, namely an increase of the stroma with contraction, over which the influence of rest and drugs has no effect. Other manifestations of passive congestion can be removed by treatment, but in the liver they are self-perpetuating and grow in a vicious circle.

Diagnosis. — Bearing in mind the possibility that any unexplained enlargement of the liver with portal congestion and ascites is due to adhesive pericarditis, we may be led to keep a daily watch upon the heart, and so happen upon some positive evidence of this most obscure malady. This should be particularly insisted upon in cases occurring in young persons and in those where there is no evidence of excessive alcoholism, syphilis or malignant disease, or where there is a history of symptoms which sound like those of pericarditis, pneumonia or acute multiple arthritis. As most cases of chronic pericarditis are tubercular in origin, the presence of tuberculosis elsewhere in the body in connection with unexplained portal stasis should make us think of the pericardium as a possible cause for the stasis.

Prognosis. — The chief importance of correct diagnosis is that the course of cases of portal stasis due primarily to pericarditis is considerably longer, as a rule, than that of primary hepatic cirrhosis, for which they are often mistaken. The case here reported seems to have lasted at least six years; and a duration of eight to twelve years is apparently not uncommon.

Treatment is in any case simply palliative.

CONCLUSIONS.

(1) Some cases of hepatic enlargement with ascites and other evidence of portal stasis appear to be due to chronic obliterative pericarditis.

(2) Appreciation of this possibility may lead to the correct diagnosis through careful and frequent examinations of the heart, and close scrutiny of the previous history.

(3) The disease appears to be relatively frequent in persons under thirty years of age, and usually runs a course of six to twelve years, that is, a longer course than most cases of primary alcoholic cirrhosis. This fact is of importance in prognosis.

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ON THE TREATMENT OF CERTAIN FORMS OF CERVICAL LYMPHADENITIS BY THE INTRODUCTION OF MEDICINAL SUBSTANCES INTO THE CRYPTS OF THE FAUCIAL TONSILS.[1]

BY J. L. OOODALE, A.M., M.D.,
Assistant Physician to the Clinic for Diseases of the Throat in the Massachusetts General Hospital and in the Boston Children's Hospital.

The following paper is intended as a preliminary communication regarding a new method of treating some forms of cervical glandular enlargements which has suggested itself to me as the logical deduction from certain clinical facts and experimental investigation.

The cervical glands, to the enlargement of which I refer, are those situated in the neighborhood of the angle of the lower jaw. It should be emphasized that the other cervical lymph-glands, such as the occipital, jugular, and submental, are here left entirely out of account.

The angular glands, to which our present consideration is limited, become enlarged, as is well known, in a variety of acute and chronic pathological processes affecting the fauces and the posterior portions of the mouth, such as, for instance, diphtheria, epithelioma of the tonsil, dental caries, etc.

In the present connection such possible causes as acute inflammation, malignant disease and dental irritation are excluded. There will, then, remain a class of angular glandular enlargements which possess particular interest and importance. These are the chronic swellings ranging a size from barely perceptible by the finger to that of a pullet's egg, exhibiting often a tendency to central softening and evacuation of their contents. They occur most commonly in poorly nourished children, and in a large proportion of cases have been shown to be tubercular in nature.

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[6] Practitioner, February, 1887.
[7] Deutsch. Archiv. f. klin. Med., 1895, p. 272.
[8] Fortschrette d. Med., 1887, p. 480.
[9] Beiträge zur Leberkrankheiten, 1864, p. 19.
[10] Cited from Pick, loc. cit.
[11] Deutsch. med. Woch., 1882, p. 601.
[12] Loc. cit., 1884, p. 564.

[1] Read before the Boston Society for Medical Improvement, January 24, 1898.

It is to the treatment of enlarged and often tubercular angular lymphatic glands that I wish to call your attention.

Before this is done, however, a brief recapitulation of the following clinical and pathological facts is necessary:

In the first place with regard to the source of infection in the case of these glands, it has been suggested that the infection atrium was the tonsils. Experiments have shown that animals with whose food bacilli of tuberculosis were mingled, experienced a tubercular enlargement of the angular glands. Examinations of human tonsils have furthermore demonstrated bacilli of tuberculosis with comparative frequency on the free epithelial surface or in the tonsillar crypts. In a small percentage of cases, giant cells and tubercles have been found in the tonsillar tissue proper. Since it is evident that bacilli of tuberculosis once present in the lymph spaces of the tonsillar tissues would tend to be borne by the efferent lymph current to the angular glands, the inquiry arises, Is it possible for the bacilli which we know to be frequently present in the mouth to make their way through the epithelium of the tonsil into the lymph spaces of the organ?

If this penetration by the bacteria occurs, the question is next suggested whether it is not possible that medicinal substances brought into contact with the epithelium of the tonsil may also be absorbed, and thus exert their therapeutic effect upon the neighboring lymph glands? The question is, in other words, Does absorption of foreign substances exist in the tonsil?

I was led last spring into an investigation of the question of tonsillar absorption by observing the marked difference existing between the stout, compact epithelium covering the exposed free surface of the tonsil, and the delicate loose structure of that lining the crypts. This circumstance, in connection with facts of clinical observation, led me to suppose that absorption through the tonsillar mucous membrane, if it existed at all, would take place chiefly or wholly in the crypts. To determine this question, I conducted a large number of experiments, which consisted essentially in the introduction of foreign substances into the crypts of human tonsils destined for excision in the ordinary course of out-patient practice. The tonsils were excised at varying periods of time subsequent to the introduction of the foreign substances, hardened, and examined microscopically. These experiments were reported in April last to the Boston Society of the Medical Sciences, and published with plates in the *Archiv für Laryngologie*, Band vii, Heft 1, so that I will not review their details.

The conclusions afforded by the experiments were as follows:

(1) Absorption exists normally in the tonsils, and takes place through the mucous membrane of the crypts.

(2) The path of the absorbed substances is in the interfollicular lymph channels in the direction of the larger fibrous trabeculæ at the base of the organ.

(3) During the process of absorption, foreign substances encounter phagocytic action on the part of the polynuclear leucocytes situated in and adjoining the mucous membrane.

(4) Bacteria are normally present in the crypts, but are not usually demonstrable in the tonsillar tissue proper.

(5) In view of the preceding facts, the supposition appears possible that bacteria may be continually making their way into the tonsillar tissues, but at the moment of entering encounter conditions which terminate their existence.

The application of these facts to the subject of tubercular infection of the tonsils, and of the angular lymph-glands, leads us to conclude that a bacterial invasion from the mouth is possible. If bacilli of tuberculosis once pass the phagocytic barrier in and around the mucous membrane of the crypts, they will be carried into the interior of the tonsil, and either be there deposited or transported by the lymph stream to the angular lymph glands.

With these facts in mind it occurred to me to make use of the normal tonsillar absorption in the treatment of chronic angular lymphadenitis. It seemed reasonable to suppose that medicinal substances introduced into the crypts of the tonsils would also make their way into the angular glands along the path followed by the original irritation. If we possessed any substances capable of affecting conditions of chronic lymphadenitis, the introduction of such substances into the tonsillar crypts should be followed by an effect upon the angular glands.

An abundance of clinical material was placed in my hands at the Children's Hospital through the kindness of Dr. Langmaid and other members of the surgical staff.

In order to exclude so far as possible complicating influences, I have thus far limited this treatment to those cases in which adenoid hypertrophy was absent, and where the lymphadenitis was out of proportion to discoverable disease of the tonsil, particularly tonsillar hypertrophy. I have, therefore, excluded instances where the tonsils were so large as to permit removal by the guillotine. Cases where dental caries existed were also excluded.

Of the cases treated, some presented evidence of chronic inflammation of the tonsils with more or less dilatation of the crypts, where one would ordinarily use the galvano-cautery, the tonsil punch, or curved cutting instruments for the division of tissue between the crypts, with subsequent iodine applications.

In other cases, the tonsils exhibited no indication of chronic inflammation beyond a narrow hyperemic halo surrounding the orifice of each crypt.

The medicinal substances were introduced into the crypts by means of a blunt, pliable, silver canula attached to a hypodermic syringe. The canula, at its distal end, was so bent as to permit of its ready introduction.

With regard to the substances employed, several preparations of iodine and iodine compounds were tried, but I am not ready to report regarding their individual efficacy. In most of the cases which I shall speak of now a 10-per-cent. aqueous solution of iodine was used.

The solutions were introduced in the following way: Three or four drops of the preparation are drawn into the syringe through the canula. The patient's tonsils are brought into view. A crypt is selected, and the distal end of the canula introduced as far as it will go. The fluid is expelled into the lumen of the crypt and the canula withdrawn. The other crypts are then filled in order. Generally, I have repeated these injections every third or fourth day.

As already stated, my object in bringing this subject to your attention is to demonstrate the possibility of reaching the angular lymph-glands in this manner by medicinal agents rather than to report cases. Most of the patients have been under treatment for but a few weeks and I shall therefore speak only of those who have been longest under my care.

Case I. A girl, eight years of age, pale, poorly nourished. Angular gland on right had been slowly increasing in size for several months; and at the beginning of the treatment, eight weeks ago, measured two inches in length by one inch in width. The iodine introductions were followed by a steady diminution in the size of the gland, which now measures three-quarters of an inch in length by one-quarter in width. In this case the tonsils were essentially normal.

Case II. A boy, ten years of age, in fairly good general condition, exhibited six weeks ago an angular gland on the right, measuring one by one-half inch. The swelling had been slowly coming on for several months. The iodine introductions were followed by a rapid shrinking in the size of the gland, which is now scarcely palpable.

Case III. A girl, eight years of age, fairly well nourished. An angular gland on the left measured two and one-half by two inches, the enlargement being of about a year's duration, during which period moderate fluctuations in its size occasionally occurred. The tonsils were slightly enlarged. The iodine introductions were followed by a progressive diminution in the size of the gland. Four weeks after the beginning of treatment, the gland measured three-quarters by one-half inch. The case then disappeared from observation.

While in the majority of the cases treated a marked change in the glandular swelling occurred, in a few others, which were apparently as suitable for the application of this method, no alteration resulted. I have at present no explanation to offer for this failure to react, although it seems most probable that some infectious atrium other than the tonsils may have existed.

Clinical Department.

SECONDARY HEMORRHAGE FOLLOWING THE REMOVAL OF ADENOID VEGETATIONS.

BY WALLACE PREBLE, M.D., CAMBRIDGE, MASS.

On March 3d I gave ether to a girl of eleven years for the removal of adenoid vegetations and removed a moderate growth of them with forceps and finger. The bleeding was not severe and stopped in a few minutes spontaneously. The child was feverish the next day, as she refused to let her mother spray the nose clean, but after I washed it out she brightened up, and on the sixth day after the operation was apparently well and breathing freely through the nose. She slept very well that night and I supposed the case was ended. She went out for a walk on the seventh day in the warm sunlight about 11 o'clock, and had not been out more than a quarter of an hour when a sudden hemorrhage occurred, and she was carried into the house in a faint. When, twenty minutes later, I saw her the bleeding had stopped under cold syringing; but I took her to the hospital as soon as I could. At 4.20 at the hospital she had recovered from the syncope and looked bright and well. No bleeding occurred after the first, until 5.30, when with the assistance of Drs. Stevens and Swan, I plugged the posterior nares, which instantly stopped the bleeding and an injection of one-sixtieth of strychnia relieved the restlessness, which was too great to allow transfusion. She had a good night; but at 6 a. m. on the eighth day a sudden gush of blood came, and she died before the house-officer could reach her.

She gave no history of a bleeder, but I noticed that the blood on the steps from the first bleeding was only partly clotted.

In advising the removal of adenoid vegetations one generally feels that there is no danger, but in looking over the literature on the subject during the last ten years I find the following cases recorded:

1. Boy, eleven years old, operated on at 10 a. m. Hemorrhage began at 2 p. m. and continued for eight hours when it stopped spontaneously and did not recur. (Hermet.)

2. Man had a small growth removed by a Gottstein curette. Hemorrhage followed immediately so profuse as to require tamponning. (Capart.)

3. Child of nine years. Growth removed by Gottstein curette. Hemorrhage lasted several hours, causing syncope, but stopped spontaneously. (Rousseau.)

4 and 5. Woakes had two cases of troublesome immediate hemorrhage, one of which required plugging.

6. Delavan had a large clot fall into the larynx and obstruct breathing, but child recovered.

7. Delavan removed a small piece by forceps for diagnosis in another case. It was immediately followed by bleeding that lasted two days.

8. Dr. Hall reported the case of a mulatto of nineteen, where the immediate hemorrhage following the removal of adenoids required plugging.

9. Dr. Richards had a boy who bled severely after the operation, causing syncope, and the anemia lasted a long time.

10. Delavan had profuse hemorrhage in a child of four. The resulting pallor lasted a long time.

11. A man of twenty-eight had an adenoid the size of a pea near the left Eustachian tube with impairment of hearing on that side. Slight bleeding followed its removal by forceps. Some hours later hemorrhage occurred, which was not controllable by cold or very hot irrigations, but was stopped after two hours by a tampon soaked in 20-per-cent. cocaine solution left in five minutes. Hemorrhage recurred in the evening, but stopped of itself. Recurred again in the morning, when a tampon was inserted and left in thirty hours. The following night it recurred, and another plug was inserted for forty-eight hours. The resulting pallor lasted for two to three months. (Ruault.)

12. A young man of eighteen had enlarged tonsils, granular pharyngitis, and naso-pharynx filled with firm, fibrous adenoids. The tonsils were treated by ignipuncture and the adenoids removed a few at a time, by forceps. Moderate bleeding occurred at the fourth sitting. Twenty hours later it became troublesome, lasting two and a half hours, and only stopped by galvano-cautery. (Ruault.)

13. In a girl of nine and a half years there was nasal stenosis, the left tube was obstructed and left drum retracted. The growth was removed by forceps and the vault painted with alcohol and borated glycerine. There was no hemorrhage at the operation; but two hours later bleeding lasted for an hour and recurred on the next day. (Gillé.)

14. A girl of seventeen had hypertrophy of the turbinates treated by galvano-cautery, and adenoids removed by forceps, a few at a time. The second sitting was followed by slight bleeding, but the hemorrhage after the third sitting required very hot irrigations to stop it, and recurred fifteen hours later, though it finally stopped spontaneously. (Cartaz.)

15. In a girl of seventeen the growth was very hard, and the hemorrhage at the operation was considerable. It recurred two hours afterwards, and required plugging. (Scott Renner.)

16. Kahn reports that in May, 1893, in a girl of five, he removed adenoids with a Gottstein curette. The bleeding was so severe he had to plug with iodoform gauze. He found he had cut off a thin layer of bone. The bleeding did not recur.

17. Dr. Hooper had a case of fatal hemorrhage in a bleeder resulting from examining the case with the finger for diagnosis.

18. Dr. Delavan reported a case of immediate fatal bleeding in a child of four.

19. In another case of Dr. Delevan's hemorrhage occurred eight hours after operation on a child of two and a half years, and death occurred within twenty-four hours.

20. Wright reported a case of an adult, where primary hemorrhage required tamponning with nitrate of iron.

21. Newcomb reported a case of a child of three years and nine months where bleeding began four hours after operation and death resulted within sixteen hours.

True secondary hemorrhage, where the bleeding does not begin for several days when healing should be well advanced, seems to be extremely rare. I have been able to find only the following five cases besides the one I report to-night:

1. Segond operated on a girl of sixteen, under chloroform, with forceps and finger. Hemorrhage was abundant at the operation, but stopped spontaneously. On the eighth day it recurred; the pulse became very weak, and syncope threatened. The pallor lasted many days.

2. A boy of fourteen had his vault filled with adenoids; tonsils not enlarged. Operated on in 1893; bleeding slight. On the fifth day when he awoke, the bed was covered with blood; but the hemorrhage stopped of itself and did not recur. (Lacourret.)

3. The Gottstein curette was used on a boy of fifteen. Bleeding at operation was so free as to require cold irrigation. Severe hemorrhage occurred on the fifth day lasting eleven hours in spite of cold irrigation. Began again on the eighth day, and was stopped only by irrigation with perchloride of iron. Recurred at 4 A. M. on the ninth day, but stopped after two hours of itself, and recurred several times that day and night; still no plug was used. Pallor lasted long, but recovery followed. (Beausoleil.)

4. In July, 1894, with a girl of nine and a half, the bleeding at the operation with a Gottstein curette was insignificant, though she had bronchitis at the time. On the night of the fifth day there was considerable hemorrhage which was stopped by ice-cold drinks and one dose of ergotine, and did not recur. (Helsmoortel.)

5. In a girl of six, in January, 1896, enlarged tonsils were removed with a tonsillotome and a Gottstein curette employed for adenoids. The growths were very firm and there was almost no bleeding. On the night of the fifth day severe hemorrhage occurred, which was stopped by ice-cold drinks and ergot, like the last. (Helsmoortel).

It is curious that three of these five cases are French and the other two Danish. I could find no secondary hemorrhages among the German or English reports.

LITERATURE.

New York Medical Journal, October 12, 1889.
Rev. Internat. de Rhinol., May, 1892.
American Journal of Medical Sciences, 1893, cvi, 574-579.
Rev. de Laryngol., Paris, 1895, xv, 503-509.
British Medical Journal, London, 1893, i, 1322.
Belgigue Med. Gaud Haarlem, 1896, iii, 486.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 19, p. 449.)

OSTEOPLASTIC OPENING OF THE ORBITAL CAVITY FOR RESECTING THE FIRST BRANCH OF THE TRIGEMINUS.

Cahen[11] describes the following method of operating for a deeper resection of the supra-orbital nerve after an unsuccessful operation for neuralgia. In many cases the ordinary operation does not secure the desired result, and both patient and doctor are unwilling to take the risk of a removal of the Gasserian ganglion; in these cases the author has employed and advises this operation, which has been successful in his hands:

At either end of the longitudinal incision employed in the ordinary operation two perpendicular incisions are carried upward, and a flap is raised of skin, periosteum and bone, which has its base upward. The remainder of the spongiosa and the tabular vitrea of the frontal bone is removed to the extent covered by the flap, the dura mater exposed, and after careful raising of the dura the orbital wall is laid bare. With a small chisel and bone forceps the wall of the orbital cavity is removed from the orbital margin backward. This exposes the nerve, which is resected as far back as possible; the wound is then packed with iodoform gauze and secondary sutures inserted. This method, the author believes, will be useful in many cases where entrance into the orbital cavity is desired.

SIXTY-ONE CASES OF PARTIAL AND COMPLETE EXCISION OF THE TONGUE.

Wheeler[12] says that out of 61 operations performed by him for malignant disease, none died from the effects of the operation save one, a male on whom he operated by Kocher's method modified; he died of asthenia. He did not tracheotomize him.

Of the 61 cases, in 29 the disease returned. Many of these operations were performed not with a view to cure, but merely to relieve and remove a foul, sloughing, fetid mass, and thus render existence more tolerable. Twenty-two cases he was not able to trace at all directly himself. He heard indirectly that five were healthy three or four years after operation.

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[11] Cent. f. Chir., No. 27, 1897; American Journal of the Medical Sciences, January, 1898, p. 95.

[12] Dublin Journal of Medical Sciences, April, 1897; American Journal of the Medical Sciences, August, 1897, p. 228.

Seven others had had no return of the disease, to his own personal knowledge, one to fifteen years after operation, while three had no return seven, three and two months after operation.

There is only one prognosis for unoperated lingual carcinoma — death; and a like prognosis for a large number of operated cases. That complete recovery does take place, he believes to be undoubted, as shown by his own cases.

The kindly healing of wounds in the mouth is not due to the bactericidal action of the saliva, but to the outpouring of leucocytes which its presence in these wounds always induces.

He considers it expedient to ligate the external carotid before removing the tongue, tonsils and part of the palate; but preliminary ligature of the lingual arteries in excision of the tongue, as recommended by Mirault, is not required; there is no hemorrhage from the ranine arteries to cause alarm, and, as the operation upon the tongue is frequently postponed until the wounds for deligating the lingual vessels heal, the disease in the mouth is increasing and may be infecting the patient. The author believes it is good surgery to remove the tongue first and then the diseased glands later, if it is necessary to do the operation in two stages.

The inflammation in the glands usually subsides a little, and the glands can then be more readily removed, and the connective tissue will be a guide to the lymphatic glands deeper in the neck, where the lymphatics directly communicate.

The author has performed all the recent operations, but prefers the thermocautery scissors when suitable. It is an admirable instrument in the majority of cases of lingual cancer where the disease is not too extensive. He never uses a ligature through the tongue. The tongue is held by toothed forceps, and just as the ranine arteries are about to be severed the hot blade is allowed to cool a little, in order to allow the arteries to bleed; they are then secured and ligated. Frequent sprays are the best antiseptics.

THE ORIGIN AND NATURE OF RANULA.

Von Hippel[13] in a paper on this subject agrees with Neumann and others that certain ranulæ arise from unobliterated portions or branches of the thyro-glossal duct, and reports one interesting and thoroughly convincing case in support of this view. Most cases of ranula have another origin. It is generally an affection of the sublingual salivary glands. As a result of a partial, chronic, interstitial inflammation of the gland, sclerosis occurs, and causes pressure and stricture of the small tubules of the gland. Naturally, the peripheral gland lobules continuing work, there is retention of the secretion and a slow dilatation of the tubules behind the strictures. This process has been observed taking place simultaneously in a number of neighboring tubules, and these tubules becoming wider and wider come in contact, and ultimately melt the one into the other.

Von Hippel considers the process in the small tubules to be primary in the development of ranula, while changes in the gland vesicles is secondary and incidental. Generally the tumor is near the frenum, and grows outward and backward; sometimes it spreads towards the other side, and so appears median. In other cases the tumor is from the first distinctly lateral and never approaches close to the middle line. The only certain treatment consists in excision not merely of the cyst but of the whole affected gland.

The author makes the following conclusions:

(1) Ranula is a retention cyst of the glandula sublingualis, in rare cases of the glandula incisiva.

(2) It originates in the small ducts of the gland.

(3) It is occasioned by a partial chronic interstitial inflammation, which leads to closure of the small ducts.

(4) The cyst formation is due, at first, to retention of secretion, later to proliferation, degeneration and desquamation of the duct epithelium, on the one hand, and on the other, to transudation from new-formed capillaries.

(5) Increased pressure causes atrophy of the glandular tissue involved.

(6) Submental and acute ranulæ are only accidental varieties of the ordinary disease.

(7) The only radical operation for ranula consists in the extirpation of the cyst, together with the whole of the gland diseased.

(8) In very exceptional cases, all the clinical features of ranula are exhibited by cysts of the unobliterated ductus lingualis or its branches.

TREATMENT OF ABDOMINAL INJURIES.

Hyperesthesia of the abdomen after injury is an indication for operation. An increase in the respirations to twenty-eight or thirty per minute makes the indication absolute. Cold extremities are also significant.[14]

The surgeon, when confronted with gunshot wounds penetrating the abdomen, ought immediately to perform laparotomy, and look out for the various perforations of the viscera to see if he can close them, without waiting till peritonitis arises to force his hand.[15]

Abdominal section is the only treatment to apply in contusions of the abdomen. It has been sufficiently demonstrated that the symptoms are not an adequate index of the gravity of the lesion or lesions; and, if we cannot tell what the injuries are, the only thing to do is to investigate. Mendy found that in 289 cases of contusion from the kick of a horse 30 per cent. of the non-operated patients died; and also 71 per cent. of those operated upon. These figures have no value; for, in many instances, no details were given, and in 18 out of 25 fatal operative cases peritonitis was already established. Of the writer's cases, 20 in all, 14 of the patients were operated upon, with two deaths, while, of the six not operated upon, two died.[16]

THE TREATMENT OF GENERAL SEPTIC PERITONITIS.

Since adopting as a routine procedure the intra-intestinal injection of sulphate of magnesia, the results of operations have been so much more favorable than those of former years that McCosh[17] cannot but believe that, in a measure at least, this improvement is due to the injection into the small intestine of a saline cathartic. There may have been other changes in the mode of operation and technique, but the author's former experience leads him to place the credit to this special modification of treatment.

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[13] Archiv. f. klin. Chir., Band lv, S. 164; Annals of Surgery, November, 1897, p. 650.

[14] Le Dentu: Le Progrès Méd., October 27, 1897; Monthly Cyclopædia of Practical Medicine and Universal Medical Journal, January, 1898.

[15] Chauvel: Lancet, October 2, 1897; Monthly Cyclopædia of Practical Medicine and Universal Medical Journal, January, 1898.

[16] Michaux: French Congress of Surgery; Medical News, November 27, 1897; Monthly Cyclopædia of Practical Medicine and Universal Medical Journal, January, 1898.

[17] Annals of Surgery, June, 1897; American Journal of Medical Sciences, December, 1897, p. 721.

During the past year he has operated on eight cases of general septic peritonitis. One of these died as the direct result of the peritonitis, one died from lung complications five weeks after operation, five recovered and remained well, and one is still in the hospital convalescing.

There were two other cases that were moribund that were not operated upon. The cases operated upon were not selected, but were the general run. In six cases a gangrenous appendix was the cause, in one a perforating gastric ulcer, and in one a septic uterus. The histories are reported briefly. The details of the operation may be summarized as follows:

(1) Chloroform is employed as the anesthetic.

(2) A free incision is generally made, five or six inches in length. Its situation varies according to the organ which has excited the peritonitis. The purulent fluid is allowed to flow out, its escape being often aided by turning the patient on the side.

(3) As a rule, the intestines are allowed to escape from the abdominal cavity into hot towels held in the hands of assistants (the patient being generally turned on the side). In certain cases, where the distention is enormous and where the heart's action is very weak, any considerable escape of intestinal coil is prevented. Where possible, however, even at great risk, the intestines are removed, and, if well protected by hot towels, he has not found that the evisceration increases to any great extent the shock of the operation. If the distention is such that their return is impossible, he does not hesitate to open the ileum and allow gas and feces to escape. The openings are closed by Lembert sutures. He has never seen any reason for establishing a temporary artificial anus by suturing the gut to the abdominal wall.

(4) The cause of the peritonitis is removed. If it be an appendix or tumor, it is extirpated. If it be a perforation, it is sutured.

(5) The intestines and the cavity of the peritoneum are thoroughly irrigated with hot normal salt solution at a temperature of 110° or 112° F. or over. A soft rubber tube is passed about among the intestines, or they are well douched if they are outside of the abdomen. Irrigation is preferred to the swabbing by gauze pads or sponges, as the author fears injury to the peritoneum, which will produce a chance for absorption of septic material. A considerable amount of the salt solution is allowed to remain in the abdominal cavity for the purpose both of stimulating the heart and of favoring intestinal drainage.

(6) Sulphate of magnesia is injected, through a hollow needle attached to a large aspirating syringe, into the small intestine at a point as high up as possible in the jejunum or ileum. A saturated solution containing between one and two ounces of salt is used. The needle puncture is closed by a Lembert suture.

(7) The peritoneal cavity is drained generally by four or more strips of sterile gauze thrust in different directions among the intestines, or other forms of drainage are used.

(8) The abdominal wound is but partly closed by sutures. The edges are not closely approximated, but are generally partially drawn together by two or three silkworm-gut sutures, between which and the intestines is placed a compress of gauze. A wound that gaps somewhat affords freer exit for the escape of peritoneal secretions.

(9) After the return of the patient to bed, if the condition of the stomach will permit, a ten-grain dose of calomel is given. If chloroform has been used this will generally be retained. Rectal stimulation is used for the first twenty-four hours.

A NEW METHOD FOR THE RADICAL CURE OF INGUINAL HERNIA: INTRAPERITONEAL TRANSPLACEMENT OF THE SPERMATIC CORD AND TYPICAL OBLITERATION OF THE INTERNAL RING AND INGUINAL CANAL.

Dr. George R. Fowler has contributed a new operation for the radical cure of inguinal hernia.[18] It consists of intraperitoneal displacement of the spermatic cord and the obliteration of the internal ring and inguinal canal. The steps of the operation are summarized by the writer as follows:

(1) A curved skin incision which furnishes easy access to all the parts involved in inguinal hernia.

(2) Splitting the anterior walls of the inguinal canal from the external to the internal ring.

(3) Isolation of the cord and sac together from the surrounding parts, after which these are separated from each other and cleared well up to the internal ring.

(4) Double ligature of the deep epigastric artery, with sufficient space between the ligatures to permit of incision.

(5) Cutting away of the neck of the sac and incision of the posterior wall of the inguinal canal and Hesselbach's triangle.

(6) The cord is transplaced into the peritoneal cavity from the site of the internal ring to a point below the level of the pubic bone.

(7) Broad approximation and suturing the peritoneum and transversalis fascia in front of the cord for the space mentioned.

(8) Obliteration of the internal ring and inguinal canal by accurate suturing, and strengthening of Hesselbach's triangle and the new point of emergence of the cord by outward displacement of the pubic attachment of the corresponding rectus muscle.

THE RESULTS OF KOCHER'S OPERATION FOR HERNIA.

Kocher[19] gives the results obtained by himself and his assistants in 197 operations for the radical cure of hernia. In the operation, as performed by him, the cord at its exit from the external ring is separated, and after division of the cremaster and the tunica vaginalis, the sac is isolated as high up as possible, and is drawn outward through a small opening in the fascia of the external oblique muscle one-half an inch above Poupart's ligament and one-half to one inch externally to the region of the internal ring. If the sac is large, and on account of its funnel shape a recurrence is feared, a small opening is made into the peritoneal cavity to the outer side of the internal ring, and a curved clamp is passed through this opening and down to the lowest limit of the sac. When it is withdrawn, the sac is inverted like the finger of a glove and drawn outward through the incision, tied and cut away. The incision is closed by a couple of stitches through muscle and fascia. Of the 197 cases operated upon, primary union was obtained in 91.3 per cent. All but 20 of the patients were over fifteen years of age. Of 111 cases, which could be followed, there were four recurrences, that is, 3.6 per cent. No patient died from the operation.

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[18] Annals of Surgery, November, 1897, p. 603.

[19] Centralbl. f. Chir., May 15, 1897; Medical News, July 3, 1897, p. 18.

(To be continued.)

New Instruments.

AN INSTRUMENT FOR FACILITATING CATHETERIZATION OF THE URETERS.

BY EDGAR GARCEAU, M.D., BOSTON.

This instrument is merely a modification of the Kelly instrument. It is to be used only with the patient in the knee-chest position. In this position the bladder, in consequence of the negative pressure within the abdomen, assumes a globular shape by being distended with air, which rushes in through the cystoscope when the obturator is withdrawn. This distention is universal and affects all parts of the bladder equally, so that in viewing the vesical membrane through the cystoscope a smooth surface is presented free from rugæ. So great is the force of the negative pressure that the trigonal area and the ureteral orifices, by virtue of the globular shape which the bladder assumes, are raised in an upward direction, so that they are not on a plane with the axis of the urethra, but lie decidedly above it. This is particularly the case in multiparæ, and especially in virgins, in whom the comparatively rigid vaginal walls act to retract the trigonal area higher than in multiparæ. But in multiparæ the lax condition of the vagina, in a varying measure, allows the trigonum to lie on a plane more nearly corresponding with the axis of the urethra. Yet it will be found that even in multiparæ the trigonum is slightly above the urethral axis.

To overcome this difficulty the examiner had to do either one of two things. He either had to point the end of the cystoscope in an inclined plane by lowering the handle so that the ureteral orifice came into view at the vesical end of the instrument; or he had to forcibly raise the instrument, and with it the urethra in order to see the ureteral orifice.

The first method made it very inconvenient for the examiner, for such was the required inclination of the instrument that it often necessitated his assuming a cramped position near the floor in order to look into the cystoscope.

The second method was exceedingly painful for the patient, owing to the traction on the urethra. A very simple device overcomes this difficulty. By it the ureteral area is depressed by pressure of a depressor (E) in the vagina, so that the orifice presents directly opposite the vesical end of the cystoscope, the latter being held in a horizontal plane. The examiner can be seated in a chair, and he is not obliged to change his position and he does not have to incline his instrument. There is a notable absence of pain in using this instrument for no traction on the urethra in an upward direction is required. It will be found of service especially in nulliparæ; but in multiparæ likewise it facilitates catheterization of the ureters to a marked degree. The inspection of both ureteral areas and trigonum is under perfect control.

Explanation of Figures. — All three figures are one-quarter the natural size. The diameter of the cystoscope is ten millimetres. The handle (A) is shaped so as to clear the buttock. It is fastened to the cystoscope proper at an angle which is shown in Fig. 1 (front view). This oblique insertion is necessary in order to allow urine expelled during the examination to escape without mishap to the examiner. Fig. 2 is a side view with the vaginal depressor elevated; H E enters the vagina; G F enters the bladder. At D is a screw-joint, which when tightened keeps the depressor in the desired position. The depressor (E) is a flat circular button; B is the handle of the obturator, whose tip (F) is seen at the end of the cystoscope (G).

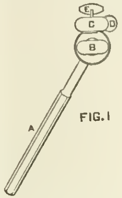

FIG. 1

Codman & Shurtleff, Boston.

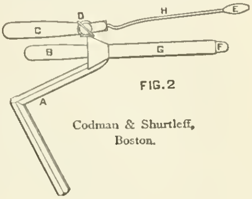

FIG. 2

Codman & Shurtleff, Boston.

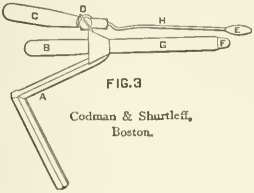

FIG. 3

Codman & Shurtleff, Boston.

To Use the Instrument, the depressor is elevated by loosening the joint (D). The cystoscope (G F) is then introduced through the urethra into the bladder, while the depressor and its shaft (H E) are guided into the vagina (Fig. 2). The obturator (B F) is now withdrawn and the instrument is pointed in a horizontal direction, and is turned about 45° to one side or the other. This corresponds to the point at which the ureteral orifice is located above the tip of the cystoscope. The depressor is now forced down (Fig. 3) by elevating the handle (C). This depresses the ureteral eminence and with it the orifice of the ureter. The screw is now tightened. This keeps the depressor in position. The ureter may then be catheterized.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, January 24, 1898, the President, Dr. R. H. Fitz, in the chair.

Dr. R. C. Cabot read a paper entitled

ADHESIVE PERICARDITIS AS A CAUSE OF HEPATIC ENLARGEMENT, WITH THE REPORT OF A CASE.[1]

Dr. H. F. Vickery; This patient is a man forty-two years old, now in the Massachusetts Hospital, who is under my care on account of Dr. Shattuck's absence. His liver is enlarged because of heart failure. At the age of twenty-eight there had been some years of rather marked use of alcohol when he was exposed to severe physical exertion. He soon felt discomfort in the region of the heart, and had to give up work for a week. Then he was able to resume his labor, and felt very well again until a few months ago, when he began to find that on exertion he was short of breath. He trains horses, and had never been afraid of the most active ones; but lately they tire him out. He was exposed to wet and cold three weeks before entrance, and had a cough, with little expectoration and much dyspnea. Those were the symptoms for which he entered.

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[1] See page 463 of the Journal.

On examination we find a dilated heart. The area of dulness is increased, and the epigastrium, the sternum and more or less of the left ribs near the edge of the sternum are affected by the cardiac pulsations. The work that the heart does in the way of lifting is more than is ordinarily seen in healthy persons, yet his pulse is weak and compressible, and he is easily put out of breath. On listening, no systolic or other murmur near the apex or anywhere can be heard, but the pulmonic second is somewhat accentuated. Very little edema is present in the chest, hardly any now, although he is still unable to do much. There is a distinct gallop rhythm at the apex, the sounds there being very valvular, with some reduplication (probably of the first sound) at this point. On further examination below the diaphragm the liver is enlarged and somewhat tender, and reaches down pretty near to the level of the navel. The spleen cannot be felt. Its area of dulness on percussion is increased. The legs are very slightly edematous. We have a weak heart from some cause, with a passive congestion at present mainly showing itself in the liver. The history has been such that cirrhosis might be thought of. He has had no hemorrhages nor diarrhea nor vomiting, and there is no ascites nor jaundice. If he were to lie down and we were to press upon the liver, the veins in the neck, which are somewhat large, would become a great deal larger, showing that the liver is engorged. This largeness of the liver might also possibly be thought to be due to fat, but in that case it would hardly be so tender and the cervical veins could hardly be enlarged so readily by pressure in the hepatic region. No murmur of tricuspid regurgitation can be made out. The possibility of its being an adherent pericarditis exists, but the ordinary signs of that condition are not present. As to the history, there has been no time when he has been sick except that one week fourteen years ago and during this present trouble. As to the physical signs, the veins pulsate in the neck to a certain extent, but they do not empty with the systole: they empty with the diastole. The precordial region heaves in an extensive way, but it is with the systole and not with the diastole; and the left diaphragm moves down as much as the right with inspiration, so that it does not seem as if anything tied the diaphragm to the pericardium more than usual. On taking a full breath the area of cardiac dulness is encroached upon by the left lung. Often, with extensive adhesions, that is not the case. Although I tried very hard to think this would be a good illustration for Dr. Cabot's paper I could not succeed. The only thing it has in common is the myocardial degeneration caused however by direct trophic changes and not because of being hampered by an adherent pericardium. Furthermore, the passive congestion shows mainly in the liver. I inquired whether as a boy he could run with the rest. He was just as lively as any of his mates. Training vicious and lively horses is pretty severe work and he has done that until lately. When he strained himself he was carrying logs at a mining-camp. The kidneys show a high-colored, heavy urine, as of passive congestion but not a nephritis.

This case came after I had been told of Dr. Cabot's paper and been asked to speak about it, and at that time I happened upon a book which is a very valuable monograph on the subject, by J. F. H. Broadbent, published first in London and now by William Wood in New York. He speaks a good deal about the diagnosis, and one point he makes is that the signs of passive congestion in the lungs are small in cases of adherent pericardium as compared with the swelling of the liver and perhaps ascites, because it is in many cases the right ventricle that fails first, not the left, so that it is the organs affected by the superior and inferior venæ cavæ that show the congestion. One point in diagnosis is, in his opinion, the absence of accentuation of the pulmonic second sound, as making it more likely that the heart failure is not due to anything in the left side of the heart. One case of great interest that he reports is of a man in whom the adhesions so affected the right auricle that the superior and inferior venæ cavæ, as it were, emptied into each other. This man, if he were in the ordinary horizontal position in bed, had swelling of the lower extremities; but if the foot of the bed were raised the edema in the legs lessened somewhat and the thorax and face began to swell, showing the effect of gravity as aiding one of these veins against the other, according to position.

As I understand it the important adhesions in these cases are between the outside of the pericardium and the chest walls. It is not impossible that the heart may be fatally embarrassed by adhesions of the pericardium merely to the heart itself. If, for instance, it is dilated and adhesions form at that time, it cannot get small again; but a great deal more harm is done if it is fastened, as the whole right ventricle may be, to the diaphragm and then other portions of the heart to the front wall of the chest and also to the backbone. Although it is not absolutely necessary that these external adhesions should be present, yet in the majority of serious cases they are. One way of making the diagnosis which Broadbent speaks of is that the degree of severity of the illness should be balanced against the apparent reasons for such a condition, the physical signs against the symptoms; and if the physical signs that are apparent are not sufficient to account for the cardiac failure present this disproportion makes adherent pericarditis more likely.

Dr. Jackson: I should like to ask Dr. Cabot what the size of the heart was?

Dr. Cabot: Normal.

Dr. Jackson: That adds still more interest to the case. I looked over several of the cases in Broadbent. He speaks of the heart as being enlarged in almost every case. In looking up some time ago the cause of enlargement of the heart, outside of valvular disease, I found that the two largest hearts were due to adherent pericardium, hearts weighing respectively 1,300 and 1,090 grammes, four times the normal size. At one of the recent pediatric meetings, Osler spoke of adherent pericardium as a cause of enormous enlargement of the heart in children. He did not refer especially to the enlargement of the liver. I am sorry to say I cannot tell in my hospital cases whether there was enlargement of the liver or not. I was merely looking for causes of enlargement of the heart outside of valvular lesions. I think it is more difficult to explain the cause of the congestion with no enlargement of the heart.

Dr. Vickery: I would like to ask about the state of the heart muscle in Dr. Cabot's case.

Dr. Cabot: As to the spleen, there was no mention of it in the autopsy report, and I do not remember the condition during life. As to the tea, I spoke of that because I remember at the time when Dr. Shattuck was going over all the possibilities and the impossibilities of cirrhosis he inquired, first, if there was any possibility of this child taking much alcohol and found there was not. Then he said, "Why should we not have a tea cirrhosis?" But he found the child had not been drinking much tea.

Dr. J. L. Goodale read a paper on

THE TREATMENT OF CERTAIN FORMS OF CERVICAL ADENITIS BY THE INTRODUCTION OF MEDICAMENTS INTO THE CRYPTS OF THE FAUCIAL TONSILS.[2]

Dr. Langmaid: I knew what Dr. Goodale was doing, and it seemed to me it might be the beginning of very useful therapeusis. When he communicated to me the fact that the tonsil through the uninjured mucous membrane of the crypts would receive finely divided carmine, carbon, etc., of course it was suggested to me that here might be a way to treat diseases in the tonsils. There is no doubt that the unbroken mucous membrane in the crypts of the tonsils does allow such substances to permeate it. I had very great interest in listening to his paper. We know how frequent these enlarged cervical glands are in children with depraved constitutions. Sometimes they are single. Very frequently they are the beginning of a chain of enlarged lymphatic glands extending down to the clavicle or beyond. They give rise to a great deal of apprehension. Sometimes they suppurate; frequently they do not. I remember that I made some efforts many years ago, in fact I had an instrument made to evacuate these glands when they suppurated, hoping thereby to get rid of them and to save the scar made by incision. So far as my recollection goes that was entirely unsuccessful. I have used in former years various substances, principally the compounds of iodine, to shrink the tonsil by injection directly into the tonsil. Such good results had been reported that I thought it was worthy of trial but I never got results which were at all satisfying.

Dr. Goodale says nothing about the effect upon the tonsil, and that was not his object; he was after the glands beyond the tonsil; but if there is any efficacy in such a medicament as iodine, it seems to me that this is an excellent way to get it into that gland. The painting on the exterior of the gland I think has disappointed every one. Either the thing goes away — probably it would without the iodine — or it suppurates; sometimes I have thought it hastens the suppuration.

I am sure I hope Dr. Goodale will go on with these experiments, and one source of apprehension that I spoke about may be removed in this new way.

Dr. Cobb: I have been very much interested in the paper. I have never tried this injection, but it seems to me that it offers a good many chances of improvement on any methods that we know. There are one or two clinical points that should be considered in estimating the scientific accuracy of this method. One is the effect of the iodine swallowed during the injection. It is almost impossible in a gagging throat not to inject more or less of the iodine into the mouth. I see that Dr. Goodale uses a very small amount, probably too small to affect the organization at all. Another possibility of error is the characteristic of these glands to increase and decrease without apparent reason. Of course, if they should do this during treatment, it would be misleading. I should like to ask Dr. Goodale about the effect of weak solutions of iodine on bacteria. How strong a solution is supposed to injure the bacilli of tuberculosis? Whether the effect of injecting a drug in complete or nearly complete solution as the iodine is has the same effect as the injection of carmine, which is in more or less fine particles, and therefore more adherent and less liable to be expelled by the movements of swallowing, I think it is also to be considered; possibly it would be better to inject some solution which was less easily expelled than a watery solution of iodine, since at every movement of swallowing the tonsil is more or less compressed and whatever is in its crypts is apt to be thrown out.

Dr. Farlow: I think this a very valuable and interesting paper, particularly so as supplementing the other article which Dr. Goodale sent to the last International Congress at Moscow, and published in the *Archiv für Laryngologie.*

For a number of years I have treated cases of more or less enlargement of these glands under the angle of the jaw on the supposition that very many of them were dependent upon, as certainly they accompanied, some diseased condition of the tonsil, even when the tonsil itself was not enlarged. Thorough inspection of all the crypts often brings to light some irritating mass which may have kept up the enlargement of the gland under the jaw. Cutting open or removing these diseased areas and painting the cut surface with Lugol's solution has often served to bring about a reduction in the size of the cervical gland. I did not feel that the iodine made its way into the gland, but that the removal of a diseased area, however small, connected with the cervical gland, might lead to a shrinkage of the latter.

If it were possible to find a case where the glands were symmetrically enlarged on the two sides, it might be instructive to watch the comparative results of injecting iodine into the crypts of one tonsil and painting iodine on the free surface of the other.

Dr. Coolidge: This paper shows an ingenious sequence to Dr. Goodale's investigations of absorption by the tonsils. If we can paint the inside of enlarged glands with iodine instead of the outside, I hope that we shall accomplish more by it. Why is it not just as possible to inject solutions of iodine into the subcutaneous tissue of the leg and have it go up into the glands of the groin, or into the arm to go into the glands of the axilla, as to inject it into the tonsil to get it into the glands of the neck? Of course, the only proof of the value of this is clinical experience, and if it can thus affect these cervical glands, which are often very troublesome, it will be a valuable addition to our therapeutics. I should like to emphasize the great importance of looking at the tonsillar region in all cases of enlarged glands of the neck. I think it probable that in most of these cases the source of invasion is the tonsillar region or near it, in the glandular structures of the fauces. We know that peritonsillar abscess may recur over and over again on one side, while the other is never affected.

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[2] See page 465 of the Journal.

We may not see any probable source of bacterial invasion into the peritonsillar region, although it no doubt exists. I have no doubt that in many of these cases of large cervical lymphatic glands there is an open door somewhere in the faucial region which we ought to make attempts to close, even though we do not see it, by removing glandular tissue. I should like to ask whether iodine stays in solution after it gets into the lymphatics. It seems to me if it did not it probably would have a better effect than if it did. A substance readily soluble, even an antiseptic, would probably not stay in a lymphatic gland long enough to produce any bactericidal effect, whereas if something could be precipitated in the gland, it would be more likely to have a good effect there.

DR. CABOT: I should like to ask why he did not inject his solutions directly into the gland?

DR. LANGMAID: It should be remarked that these glands, so far as my experience goes, very frequently begin with the second dentition, and if they do not suppurate are apt to disappear with the end of dentition.

DR. LELAND: I came rather to listen this evening than to say anything, but have been very much pleased with Dr. Goodale's paper giving the practical results which follow as a corollary the experiments set forth in his paper lately published in B. Fränkel's *Archiv*. Both of these papers are confirmatory of the observations of Dr. J. Sims Woodhead published in the *Lancet* of October 27, 1894, in "An Address on the Channels of Infection in Tuberculosis," in which he demonstrates that tubercle bacilli (probably also their products) are absorbed by the tonsil, or rather are carried into it by means of the migratory leucocytes. In this paper he shows that the bacilli themselves have been demonstrated within the leucocytes in various parts of the tonsil, from the surface to the deeper lymph channels. Both he and Dr. Goodale have shown that other particles are also taken into the tonsil, and that where the bacilli themselves may disappear, insoluble particles are carried along apparently in the lymph current. It would seem, therefore, if these morbid products can be carried into and through the tonsil into the glands farther along in the lymph channel, that various medicaments should be also. Following out the suggestion in the above-mentioned paper in the *Lancet*, I have since its publication endeavored to sterilize the mouth, and thus secondarily the tonsillar crypts and other lymph structures of the fauces, by introducing antiseptics into the mouth. This seems to be best done by the use of very minute doses of bichloride of mercury in tablet form, as made by various pharmaceutical chemists, containing from one-thousandth to one-two hundredth of a grain. These tablets were brought to my attention some years ago by Dr. Garland, who I hoped would be present this evening, and who told me that he had used these tablets with great success in the treatment of various ulcerative processes of both the mouth and the fauces. It can be demonstrated that there are from ten to twelve drops of saliva in the mouth under its various conditions except when unduly excited. If we therefore introduce one-five-hundredth grain of corrosive sublimate into the mouth every one-half to one hour we shall have a solution of the strength of about 1 to 5,000 or 6,000 bathing its interior almost continuously. I have applied this method to the treatment of such affections as apthæ, canker, mucous patches, and lacunal tonsillitis with gratifying success. I have tried this method also in cases of enlargement of the glands at the angle of the jaw with what seems to me good effect, but as I have not made definite experiments in this line, and as patients after receiving the recipe often disappear, I cannot make definite statements *pro* or *con*. But it may be said, that it seems convincing that some of the medicament must reach the intratonsillar spaces and thus diminish the virulence of the invasion of the micro-organisms, so that the lymph structures can better perform their bactericidal functions. And as this solution is largely swallowed, its inhibitory influence is not without its effect on the lower parts of the alimentary canal, diminishing the gastric fermentation now commonly attributed to bacterial action and so often complained of when the decomposing contents of the tonsillar crypts are swallowed; and assisting the phagocytic action of the intestinal leucocytes given out by the adenoid structures in this location, and so preventing extension of the morbid process, as Woodhead pointed out, into the omental and mediastinal glands, and so into the lungs themselves.

Hence, though this method deduced by Dr. Goodale and evidently so successful in his hands, will probably be fully demonstrated to be a valuable addition to our armamentarium in the treatment of glandular swellings in this locality, it seems to me also that disinfection of the mouth, as nearly as possible without injury to its mucous surfaces, has a very important place in diminishing the numbers of those pathogenic micro-organisms which are so prone to seize upon favorable conditions to become actively parasitic.

DR. GOODALE: Dr. Langmaid spoke as to the direct local effect upon the tonsil. That was the first effect I noticed after the injection; the tonsil shrank before the lymphatic glands of the neck, and in several instances the amount of shrinkage was very striking. In one case, at the beginning of the treatment six weeks ago, I could introduce the point of the canula one and a half inches into the tonsil before I reached the base of the crypt; and when I did it recently, I could hardly get it over one-half inch, so that the tonsil had shrunk very decidedly.

As to the possibility of the fluid injected flowing back, being swallowed, and indirectly producing an effect through gastric absorption, in the beginning I found that a flowing back did happen, but that was because I introduced too much. Of late I take only a drop or two, and that is enough to fill a crypt of the ordinary size.

As to the effect of iodine on bacteria, I think that direct experiments in the laboratory have not shown any marked result, but clinical experience has shown, certainly in cases of tuberculosis of the glands, a marked effect. I might as well refer here to Dr. Cabot's question and that of Dr. Coolidge with reference to the direct injection of iodine into the glands, and the indirect injection into the subcutaneous tissue. A recent writer whose article I saw reviewed in the *Centralblatt für Chirurgie* speaks of the direct injection of iodine into the tubercular glands, and reports a number of cases with striking and excellent results. Such treatment is, however, occasionally followed by sloughing.

The intramuscular injection of iodine has been practised by Frassi, whose paper I saw reviewed in the same *Centralblatt.* In these experiments he found the tubercular glands did diminish in size, and I think some entirely disappeared. Dr. Farlow spoke of comparing the effect upon glands symmetrically enlarged on either side of rubbing in iodine on the free surface of one tonsil and introducing it into the crypts of the other. I think that ought to be done if one had a suitable case. In my cases I think there has been such a disparity in the size of the two glands that that would have to be taken into account. In most of them the enlargement has been unilateral. Dr. Cobb suggested the introduction of iodine in an insoluble condition or the introduction of substances partially soluble. I have tried iodoform in ether, and the silver canula went to pieces very rapidly. That is one of the reasons why I gave it up, but I think it is worth trying if you can get some canula that will stand it. It would be valuable if you could have some partially soluble substance stay in the crypts some considerable time. I suppose a soluble substance, as Lugol's solution, would disapper rapidly from the tonsil and the effect upon the gland be rather short, so that something that would have a long-continued effect would have an advantage.

Dr. Leland spoke of the use of solutions of mercury in the mouth with the object of effecting sterilization and so indirectly preventing the absorption of septic or putrefactive substances into the tonsil. It seems to me that it would be rather a difficult thing to bring about a sterilization of the crypts of the tonsil in this way. In the first place, the experiments of Miller have shown that a large amount of mercury is necessary to sterilize the mouth completely. In the second place, a constant gargling of the mouth with a 1 to 2,000 solution in many persons brings on the development of superficial ulcerations. Lermoyez worked up the local effect of mercurial solutions upon the mouth. In one case he scratched a man's mouth, and it promptly healed up. The same man had his mouth scratched again, and the abrasion was painted with a weak solution of mercury, with the result that instead of healing it developed into an ulcer. This was repeated in a number of individuals. Lermoyez's explanation was that the mercury in the mouth inhibited the regeneration of epithelium, and that complete sterilization of the mouth could not be produced without strong solutions that might bring on mercurialism. So it would seem possible that the amount of mercury sufficient to sterilize the crypts by the absorption might be followed by the development of other troubles.

Two New Hospitals for Moscow. — A Russian physician, who recently died in the East, has left 1,000,000 roubles, a half million of dollars, for a general hospital for Moscow, while a prominent landowner in the neighborhood has offered the land and the necessary funds for the erection of a hospital for children afflicted with chronic or incurable diseases.

ASSOCIATION OF AMERICAN PHYSICIANS.

THIRTEENTH ANNUAL MEETING, WASHINGTON, MAY 3, 4 AND 5, 1898.

Address by the President, Dr. F. C. Shattuck, of Boston, on

SOME REMARKS ON HOSPITAL ABUSE.[1]

Dr. S. J. Meltzer, of New York, read a paper on

CONGENITAL STENOSIS OF THE PYLORUS IN INFANTS.

This author gave a brief review of the literature of this subject, and reported a case coming under his own observation in which, for the first time, operative treatment was resorted to. The diagnosis rested upon the following points: vomiting of a peculiar character, dilated stomach and peristaltic movements of the stomach, which could be called forth at any time by touching the abdomen. A gastro-enterostomy was attempted, the smallest Murphy button being used; but the operation was not a success.

Dr. I. Adler, of New York, reported an almost identical case, and exhibited the pathological specimen, with the statement that microscopical examination had shown a hyperplasia principally of the circular fibres, the longitudinal fibres being but slightly altered.

Dr. A. Jacobi, of New York, referred to the fact that up to within a short time no one had been aware that such cases existed, and that they now seemed to be multiplying very rapidly. He suggested that embryologists should study the origin of such cases, and referred to the belief held by Dr. John Thompson, of Edinburgh, that there existed a simultaneous spasm of the pylorus and stomach brought about by nervous inco-ordination.

Dr. Meltzer was not inclined to regard Thompson's theory as the correct one.

GASTRIC CARCINOMA ASSOCIATED WITH HYPERCHLORHYDRIA.

Dr. D. D. Stewart, of Philadelphia, called especial attention to the immense difficulty attending the positive diagnosis of certain cases of gastric carcinoma, and especially of those engrafted on the previous site of ulcer, in which a normal or an excessive secretion of gastric fluid persists even after the symptoms of the gastric ailment have been prominent for a long time. He related a case in which a section, eighteen months before the patient came under his observation, disclosed what the surgeon operating and others present at the time regarded as diffuse carcinoma, the stomach being apparently too much involved even for a gastroenterostomy. A gland in the omentum, removed at the time, was found to be carcinomatous. Despite this, the patient not only recovered from the operation, but to all appearances became entirely well. Symptoms recurring after a time, he was referred to Dr. Stewart by Dr. Keen. A study of his condition at that time would have caused the opinion to be formed that the case was one of chronic ulcer, not carcinomatous, but for the known result of the examination of the gland. The patient was operated upon a second time, and died. Autopsy showed two very large carcinomatous ulcers, with a thickened, non-carcinomatous pylorus.

Dr. W. E. Fischel related a case with a somewhat similar history. The patient was first seen in

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[1] See page 413, No. 18, of the Journal.

November, 1896, when he complained of frequent attacks of vomiting and distressing weight in the stomach. No other diagnosis than gastric neurosis seemed possible. Under treatment his condition improved, and continued fairly good until May, 1897, when the patient had a severe attack of pain in the epigastrium and a sudden rise of temperature. A few months before this attack a small tumor lump had been located in the abdomen. It was now found to have increased markedly in size. From the time of the first visit up to the date of operation frequent examinations of the stomach contents had always shown the presence of hydrochloric acid. There was considerable doubt as to the diagnosis, but an operation disclosed a large tumor involving the pylorus and extending into the smaller curvature. Autopsy disclosed no signs of ulcer or ulcer scars, but a cancerous growth situated at the pyloris causing almost complete stenosis and presenting an abscess cavity which, however, did not communicate with the lumen of the stomach.

DR. W. W. JOHNSTON thought that there must be some explanation for the temporary improvement which is frequently observed in these cases, and suggested that it might be due to improvement in a complicating catarrhal condition.

DR. JANEWAY referred to two of his cases in which there had been improvement and very considerable gain of weight, amounting in one to forty pounds. In this case there had been a continued preseuce of large amount of urea, which suggested the failure of another supposed diagnostic sign.

DR. C. G. STOCKTON suggested an explanation for the rather extraordinary transient gains in weight when undoubted carcinoma exists, in that it might be due to relief of a condition of food stagnation which had been present.

DR. A. H. SMITH also reported a case of gastric carcinoma with the continued presence of hydrochloric acid.

DR. STEWART, in closing, stated that the gain of weight in his case had been sixty pounds, and with entire cessation of symptoms for fifteen months, making it different from any other case so far recorded, and he believed that the high output of urea referred to by Dr. Janeway might be expected in cases where the stomach functions were well preserved.

DR. SIMON FLEXNER, of Baltimore, read a paper on

GASTRIC SYPHILIS, WITH THE REPORT OF A CASE OF PERFORATING SYPHILITIC ULCER OF THE STOMACH.

This patient, a man of fifty-two, presented as the most prominent symptoms ascites and edema of the lower extremities and scrotum. The ascites, which had been relieved by tapping, diminished within the last year of his life, the accumulation of fluid becoming inconsiderable. Death took place suddenly following a hearty meal. Just before death the symptoms were great abdominal pain and tympany. The autopsy showed a diffuse sero-fibrinous peritonitis, the abdominal cavity enormously distended and drumlike. Stomach contents and gas were present in the peritoneal cavity, a perforation existing in the fundus of the stomach. The prevailing micro-organism in the peritoneal contents was the bacillus aerogenes capsulatus, with which was associated the bacillus coli communis. The liver contained a large gummatous mass which probably had at one time pressed upon the portal vessels. The diagnosis of syphilitic ulcer of the stomach was based upon the history, autopsy and microscopical examination.

Dr. Flexner reviewed at length the literature concerning cases of syphilitic lesion of the stomach, and stated that he was only able to find thirteen cases in all, of which five belonged to the inherited and eight to the acquired form. No instance of the disease has been previously recorded in the English language, and with one exception the entire literature is German.

DR. I. ADLER, New York, read a paper and made

SOME OBSERVATIONS ON CARDIAC SYPHILIS.

Dr. Adler attempted to show that pathological changes demonstrable by the microscope can occur in the blood-vessels and in the walls of the heart, in syphilis acquired as well as congenital, even in cases where there are no clinical symptoms or gross pathological lesions.

From a study of the literature and of the cases coming under his own observation, he concludes that in reviewing all these anatomical and clinical considerations, the necessity becomes apparent of methodically considering syphilis as an etiological factor in heart disease. It may not happen very often that an absolutely positive diagnosis of heart syphilis can be established; but in every case in which the etiology is not absolutely clear, and in which syphilis cannot with reasonable certainty be excluded, the iodides and mercurials should be accorded the same privileges as digitalis and strophanthus, strychnine and nitro-glycerine. If carefully administered, they cannot do any more harm than these latter, and may do immeasurably more good.

DR. E. G. JANEWAY, of New York, read a paper on

DANGER OF ERROR IN DIAGNOSIS BETWEEN CHRONIC SYPHILITIC FEVER AND TUBERCULOSIS.

A certain number of cases demonstrably of specific nature have come under my observation condemned as being tubercular, not, as a rule, by physicians of little experience, but by those of well-established reputation, some being teachers and writers of medicine.

Dr. Janeway then relates a number of cases of which the following are fair examples:

CASE I. The first of this group had been sent to a noted health resort for typical subjects, but instead of improving had steadily lost ground, so that after three months' trial he came to me reporting a loss of forty pounds in weight, a slight continued fever, a sense of weakness and a pain in his left side. On examination, this pain was found to be dependent upon a peri-hepatitis, which was productive of distinct friction-sound with both inspiration and expiration, and also of palpable friction fremitus. An inquiry disclosed the fact that he had been a victim of syphilis ten years before. No pulmonary lesion could be found. Under antisyphilitic treatment he was well in two months, and has remained so. He has been seen by two of the leading diagnosticians of this country in different cities, neither of whom had made out the nature of his sickness, and one of them had sent him him to a health resort for tuberculosis of the right lung.

CASE II. An adult male, who came to be examined because of fever, sweating at night, loss of weight and pain in the right side. He had been ordered by a professor of medicine, who was also a noted examiner of diseases of the chest, to give up his business and remove to a resort for consumptives. A critical investigation disclosed the fact that two of the ribs on the right side were sensitive to pressure, and that there was a small sinus in the neighborhood of the right clavicle. He admitted syphilitic infection in early manhood; and anti-syphilitic treatment removed his fever, and within a month he had regained his weight.

The consideration of the facts here narrated have convinced me that many physicians are not aware that fever may attend the late manifestations of syphilis, more particularly of visceral syphilis. The class of cases to which I have drawn attention do not go to a syphilologist, but to the general or consulting physician, and this paper is presented with a view of directing attention to the necessity of considering syphilis as a possible explaining cause of those obscure phenomena which are usually considered to import tuberculosis, malaria or sepsis. Ignorance of the fact that syphilis in what is termed its tertiary period may occasion a fever of long duration, malaise, emaciation and perhaps perforation also, without necessarily presenting definite local manifestations, is largely the explanation of the mistake.

Dr. I. E. Atkinson: There is nothing more striking than the want of active attention on the part of the medical community to the frequent presence of syphilis in all sorts of obscure diseases. He related a case, now under care, in which malaria and hepatic abscess had both been suspected, but in which a cure was rapidly following the use of anti-syphilitic treatment.

Dr. S. J. Meltzer: The difficulty in diagnosis is made still greater by the statement of Hansemann, that out of 22 syphilitic lungs examined there were only five in which he did not find the tubercle bacillus, or some changes that looked like general tuberculosis. Under these circumstances we must always give the patient the benefit of the doubt by the use of anti-syphilitic remedies in obscure cases.

Dr. C. G. Stockton asked Dr. Janeway whether examinations of the blood had led to any conclusions as to whether the temperature depends upon the toxemia accompanying syphilis, or upon the secondary breaking down of gummata and whether the tuberculin test would be of value in differentiating.

Dr. V. C. Vaughan called attention to the fact that the two diseases might and do exist together in a good many cases.

Dr. Janeway, in conclusion, replied that examinations of the blood had not given him much help and that he did not think it safe as yet to make use of the tuberculin test in such cases as a number had been reported in which the symptoms were aggravated by the test. The method of treatment used by him was the old preparation of tincture cinchona compound with potassium iodide and mercury bichloride.

AFTERNOON SESSION.

NEPHRITIS OF MALARIAL ORIGIN,

by **Dr W. S. Thayer**, of Baltimore.

In 758 cases of malarial fever treated in the wards of the Johns Hopkins Hospital, albuminuria occurred in 46.4 per cent., and casts of the urinary tubules in 17.5 per cent.

Albuminuria is much more frequent in the estivo-autumnal form fever than in the regularly intermittent fevers, occurring in but 38.6 per cent of the latter and in 58.3 per cent. of the former. Casts were found in 12.2 per cent. of the cases of tertian and quartan fever and in 24.7 per cent. of the cases of estivo-autumnal fever.

A comparison of our figures with the statistics of others would tend to show that in the estivo-autumnal fevers albuminuria is as frequent, if not more so, than it is in scarlet fever and in diphtheria. Out of 1,832 cases of malarial fever observed in the hospital and in the out-patient department there were 26 instances of nephritis of malarial origin. Of these 13 recovered, 4 died and in 9 the result was doubtful; in two instances the disease probably became chronic.

Nephritis occurs probably in about two per cent. of all the cases of malarial fever in the neighborhood of Baltimore. The complication is far more frequent and severe in estivo-autumnal fever, where its occurrence is more frequent apparently than in scarlet fever, diphtheria or typhoid fever. There is nothing especially distinctive in the clinical characters of the disease; it shows the usual features of an acute toxic nephritis. In but two of the fatal cases was an autopsy allowed. In one of these there was, in addition to the malarial infection, a general streptococcus septicemia. There was nothing especially distinctive in the results of the anatomical investigations.

The frequency of albuminuria and nephritis in the malarial fevers of Baltimore, while somewhat below that observed in acute infections such as typhoid fever, scarlet fever and diphtheria, is yet considerable.

In estivo-autumnal fever, albuminuria and nephritis are, according to our statistics, fully as frequent as in any of these acute diseases.

There is reason to believe that malarial infections, especially in the more tropical countries, may play an appreciable part in the etiology of chronic renal disease.

Dr. F. Forcheimer said that he could corroborate in a general way the statement as to the frequency of kidney troubles in the estivo-autumnal form of malaria, but that the majority of cases he had seen were found in children. He called attention also to a peculiar form of nephritis in which he had found in the urine a large deposit of almost black pigment. It occurred in cases showing the tertian as well as the estivo-autumnal parasite.

Dr. William Osler called attention to the fact that we have had no single case of hemoglobinuria or hematuria due to the use of quinine, which is rather remarkable considering how frequent the condition is supposed to be in the south.

Dr. I. E. Atkinson stated that he had been for many years convinced that malaria is an important factor in producing kidney changes, and that a certain percentage will be found almost constantly.

Dr. W. T. Councilman, of Boston, read a paper on

ACUTE INTERSTITIAL NEPHRITIS.

Dr. Councilman described an interstitial nephritis which consisted of an acute non-suppurative inflammation of the kidney, characterized by cellular and fluid exudation in the interstitial tissue, accompanied by, but not dependent upon, degeneration of the epithelium. The interstitial lesion consisted in the presence of cells similar to those described by Unna as plasma cells. These cells are due to emigration from blood-vessels and proliferation of the emigrated cells. They are formed in other organs, chiefly in the spleen and bone marrow, from lymphoid cells, and are carried to the kidneys by the blood. Accumulations of plasma and lymphoid cells may be found in the blood-vessels of the kidney without any interstitial lesions. Such cases of acute interstitial nephritis are frequently found in the infectious diseases of children, notably in diphtheria and scarlet fever, but they may be found under other conditions.

Dr. R. H. Fitz, of Boston, described

A CASE OF MYXEDEMA AND ALBUMOSURIA; TREATMENT WITH THYROID EXTRACT, DEATH.

The novel feature in this case was the albumosuria which continued throughout the progress of the disease from the time it was first observed. Attention is called to its occurrence as a rare condition, and to the fact that since albuminuria is relatively frequent albumose might easily be mistaken for albumin unless the customary tests with heat and nitric acid are duly controlled.

On the addition of nitric acid to the urine a dense white precipitate is formed which is dissolved when the specimen is boiled but reappears on cooling. When the urine in a test-tube is boiled, it becomes opaque until the boiling-point is reached, when it suddenly clears up, and remains so until the liquid is cooled, when a white precipitate forms. Such action is indicative of the presence of albumose and should lead to a more extended chemical analysis. Dr. Fitz's case, together with a few others that have been collected, shows that despite temporary improvement under the use of thyroid extract, this remedy is not infallible in myxedema.

(To be continued.)

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Recent Literature.

Vade Mecum of Ophthalmological Therapeutics. By Dr. Landolt and Dr. Gygax. Pp. 138. Philadelphia: J. B. Lippincott Company. 1898.

When considering books of the class in which are included such as the one which has been recently prepared by Dr. Landolt and Dr. Gygax, the question comes up as to whether they are desirable additions to an already overburdened literature. The authors state frankly at the outset that their aim has been to present in compact form the indispensable facts of ophthalmological therapeutics; and to meet that end they have produced a volume of such size as to be easily carried about in the pocket, and which contains in an alphabetical sequence three hundred and twenty-six paragraphs relating to ophthalmological subjects. Their desire that it may prove acceptable to the student preparing for examination, and a true friend to the busy practitioner seems likely to be gratified, for the qualifications which are generally supposed to be necessary to meet such conditions have been developed in a marked degree. Many of the formulæ will prove interesting even to the trained ophthalmologist.

W. D. H.

The Massachusetts Board of Registration in Medicine examined, May 17th, 57 candidates for license to practise; five were women. The next examination will be in July.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, MAY 19, 1898.

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CARE OF THE WOUNDED IN ACTION IN BATTLE-SHIPS.

The cockpit of old time men-of-war is now obsolete. Then it was practicable to select a place below the water-line, of sufficient size and with sufficient light, to which the wounded from the decks above could be lowered through large hatches, above one another, by ingeniously devised contrivancies of many kinds to which naval surgeons have given much attention of recent years. Now these devices are useless and only man-handling is relied upon.

The internal arrangements of the battle-ship are as varied as those of residences. The *Maine* had better facilities for removing the wounded to surgical care than most battle-ships, because of a wider hatch in the upper deck from which men could be lowered and a broad space below the protected or armored deck, commodious enough to contain twelve mattresses on deck. This cockpit depended, however, on the uncertain supply of electric light; and in close action the battle-hatches were closed, cutting off, as in most other battle-ships, the communication between the decks, except for ammunition which passes through ammunition-hoists (vertical cylinders extending through the deck from the magazine, with openings on different decks).

No one place can be selected for care of the wounded to which all can be taken during battle. There is no place of safety under the water-line, for want of room and light. Sick-bays are usually on the berth-deck and inaccessible to persons above or below that deck, owing to the battle-hatches on all decks being closed and fastened so as to cut off communication between decks. Besides the vertical there are lateral obstructions to the removal of the wounded to any one place in the ship. There are closed water-tight compartments, narrow and tortuous passages, the hurrying to and fro of men in performance of various duties, and the passing of ammunition in these passages.

In view of these obstacles to concentrating the wounded in one place, desirable but impracticable, the surgeons of our battle-ships practically agree on the following points:

(1) There is no safe place for a cockpit in action.

(2) The impracticability of selecting any one place to which wounded from any part of the ship could be carried.

(3) The removal of all wounded must be by men without any mechanical contrivance.

It is now usual to select such "stations for succor" as will be near the crews to be helped — in places comparatively safe, out of the way, and sufficiently commodious to rest six or more mattresses on the deck, and with a good supply of electric light. The larger the surgeon's division in the ship, the more the stations for succor. At these stations are a surgeon, an apothecary or a nurse, with "first aids" — as pocket-case, elastic bandages, lint, cotton, morphia, hypodermic syringe, whiskey, etc. — in some package ready at all times for use. It is utterly useless to think of performing a surgical operation during a battle.

This new condition renders more important the duty of the medical officers to instruct the crew in the simpler methods of checking hemorrhage.

The monitors are far better arranged for care of wounded than ships of the *Massachusetts* class.

While battle-ships add to the security of the living, they add also to the danger of the wounded in battle.

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A VIRUS WITHOUT MICRO-ORGANISMS?

The myxomatous disease of rabbits occurring among the animals in the Institute of Hygiene at Montevideo, as described by Prof. G. Sanarelli, suggests the above question.[1]

The disease began spontaneously early in the year 1896. Animals apparently in perfect health are attacked by an inflammation of the lids and conjunctivæ of both eyes. By the next day the lids are so swollen that they are completely closed, and yield an abundant sero-purulent discharge. Small subcutaneous tumors appear all over the body, and there is enormous swelling in all parts where skin and mucous membrane come together. The swelling increases steadily till the animal dies, usually in from two to five days. Autopsies show gelatinous, elastic and very vascular subcutaneous tumors, hypertrophy of lymphatic glands and enlarged spleen. The subcutaneous tumors consist of a typical myxomatous tissue with a predominance of stellate elements and many blood capillaries. The eyelid has ten times its normal thickness owing to the enormous increase of myxomatous elements. The swelling is of the same character in all the other organs affected.

The tissues contain no bacteria or other parasites, and attempts to cultivate organisms from the secretions or tissues, using every method known to a modern bacteriological laboratory, are entirely negative in result. Professor Sanarelli is driven to the conclusion that the etiological agent of this disease does not belong to any of those groups of organisms which we are now in the habit of considering as the cause of specific disease. But, nevertheless, the myxomatous disease can be transmitted indefinitely from rabbit to rabbit. A drop of blood, a fragment of tumor, a trace of secretion from the eye, or a bit of some viscus, are equally virulent. But the urine, pleural effusion, and the aqueous humor are not virulent. Experimentally the virus may be put under the skin, into a vein, into the stomach or into the eye. After four or five days' incubation a myxomatous swelling begins at the site of inoculation, and all the other symptoms follow. Death usually occurs about the tenth day after inoculation. When the virus is given with food the autopsy shows that the digestive tract is normal, as in all other cases.

The disease spreads spontaneously from rabbit to rabbit by means of the secretion from the eyes and nose. It can be produced experimentally by putting a little secretion into a healthy eye with a platinum loop. The blood during incubation begins to be virulent after twenty-four or forty-eight hours. Pure sterile serum from the blood is also virulent. Two hundred cubic centimetres of sterile broth became virulent in doses of one cubic centimetre, after being inoculated with one or two drops of blood. But this broth had no effect on a second flask of broth. The virus increased in strength in passing from animal to animal during two years, so that now it will kill in five days, with slight lesions showing only on the fourth day. The virus is weakened by age and by mixing with antiseptics. Mixed with equal parts of 1 to 1,000 corrosive sublimate or five-per-cent. formaline solution for six hours, the virus becomes slightly less active, making the disease last a little longer. But moist heat at 55° C. for a few minutes renders the virus entirely inactive.

Rats, guinea-pigs, monkeys and birds are not susceptible to this virus. One dog inoculated every two or four weeks died after nine months, showing paresis and elephantiasis of the fore legs with alopecia and hemophilia all over the skin. Very virulent serum from rabbits' blood inoculated subcutaneously in doses of from five to eight cubic centimetres in a human subject produced swelling of the ocular conjunctiva with edema and marked pain in the eyeball. The symptoms disappeared rapidly when the injections were stopped.

Attempts at vaccinations were negative in result. During the two years only two of all the rabbits infected recovered. These received further large doses of virus and bore them well; but their *blood serum could not save or immunize any other animal.* This last fact serves to differentiate the myxomatous disease from the type of infections caused by micro-organisms.

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[1] Presented as a preliminary note to the Ninth International Congress of Hygiene held at Madrid, April 10–17, 1898. Recorded in La Reforma Medica, Naples, April 25, 1898, vol. ii, No. 19, page 217.

MEDICAL NOTES.

Yellow Fever (?) at Key West. — Two cases of probable yellow fever have been observed among the crew of a prize taken off the coast of Cuba and sent to the harbor of Key West.

War Appropriation for Medical Supplies. — About $20,000 of the $50,000,000 appropriated for the use of the President in preparation for war has been allotted to the Army Medical Department.

A Large Bequest to the Medical Department of Michigan University. — By the will of Mrs. Elizabeth H. Bates, of Portchester, N. Y., an estate of $135,000 has been left to the medical department of Michigan University, to be devoted to establishing a Chair of Diseases of Women and Children.

Dr. Brigham's Case of Gastrectomy. — Dr. Brigham writes with reference to the case of gastrectomy, the report of which was published in our issue of May 5th, that the patient has been constantly gaining since the report was in, and now weighs 126 pounds. She gets up at 5.30 a. m. and goes to church. "It is a curious thing," he writes, "that she was married to a Swiss and lived in Switzerland the first twelve years of her married life. Fortunately for me she came to this country, for Dr. Schlatter would certainly have had the case otherwise. She is apparently in as good health as any one — no one would ever suspect that she had undergone an operation."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, May 18, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 20, measles 79, typhoid fever 4.

A Large Bequest for the Study of Cancer and Tuberculosis. — By the will of the late Caroline Croft, daughter of the late Gardner Brewer, of Boston, the sum of $100,000 has been left to be expended under the direction of Drs. Henry K. Oliver and John Collins Warren to encourage the discovery of some method of curing cancer, consumption and other diseases which are now regarded as incurable. The will provides that the income from the $100,000 shall be paid to Dr. Oliver

> "for services to be rendered by him and expenses to be incurred by him in making and prosecuting researches and investigations for the discovery and development of some remedy and means for cure for cancer, consumption or other diseases now generally supposed to be difficult or impossible of cure.
>
> "At his decease, or inability, or unwillingness to carry on the work, the fund is to be made over to Harvard College, the medical department of which is to prosecute the work till a satisfactory cure shall be discovered.
>
> "I design that the researches and investigations shall consist in part of the subjection to trial of medicines which may be extolled as specific or as possessed of marked efficiency in the disease for which a remedy is being sought, and, in case of such a medicine being a so-called secret one, of the analysis and subjection to trial of the medicine.
>
> "I design that the researches and investigations shall still progress, notwithstanding any exemption from the disease which may come of surgical interference so long as the exemption is merely temporary."

It is expressly declared that the purport of the bequest is not to promote the general purposes of the medical department of Harvard, but as a public charity, for the benefit of those who may be afflicted with the disease, or diseases mentioned. If the Harvard University authorities refuse to accept the trust then the fund is to go to the Massachusetts General Hospital for a cancer ward, in which a fair and impartial trial shall be given any remedy which may at any time be supposed to exert a marked favorable influence in cancer.

Death of a Centenarian. — Miss Anna Maria Benton, of Windsor, Conn., died last week after a week's illness, at the age of one hundred and one.

Graduation at the Massachusetts College of Pharmacy. — The Class of 1898 of the Massachusetts College of Pharmacy was graduated on May 12th, the thirtieth annual Commencement Exercises being held at the College Building. The graduating class numbered twenty-four. In the evening the Annual Dinner of the Alumni Association of the College was held at Young's Hotel.

An Examination by the New Hampshire Board of Registration. — The following notice has been issued by the Regent of the New Hampshire State Boards of Medical Examiners: "The third examination for licenses to practise medicine in the State of New Hampshire will be held at the State House, Concord, on Tuesday and Wednesday, June 21, 22, 1898, beginning at 8 o'clock a. m. All unlicensed physicians who were not in practice in this State on and before March 16, 1897, must pass the examinations in order to receive a license to practise legally their profession. Application blanks should be procured at once, as these papers must be filled out and in the hands of the Regent by June 15th. All information regarding the coming examinations will be cheerfully given by the Department of Public Instruction, State Library, Concord.

NEW YORK.

Graduation at Bellevue. — The graduating exercises of Bellevue Hospital Medical College were held at the Carnegie Laboratory on May 8th, when diplomas were given to a class of 132.

The Medical Department of Cornell. — The new medical department of Cornell University has opened its school at the Loomis Laboratory, and all of the former faculty of the medical school of the University of the City of New York, with three exceptions, are said to have taken positions in it. The three members remaining with the latter are Dr. Egbert LeFevre, Secretary and Adjunct Professor of Medicine; Dr. E. D. Fisher, Professor of Mental and Nervous Diseases, and Dr. C. G. Coakley, Professor of Laryngology and Lecturer on Physiology. A large number of students have already been enrolled at the new school.

In Aid of the Red Cross. — An entertainment for the benefit of the Red Cross Society was given at the International Health Exposition on the evening of May 14th. The principal address was made by Chauncey M. Depew, and a number of prominent clergymen and physicians took part in the exercises; among those who spoke being Drs. A. Jacobi and George F. Shrady. The wife of former Governor, Levi P. Morton, and several other patriotic ladies have contributed $2,000 each for the construction and equipment of a first-class army ambulance, and it is expected that fifteen ambulances in all will be provided by the citizens of New York. A Red Cross Auxiliary has been organized among the different departments of Columbia University.

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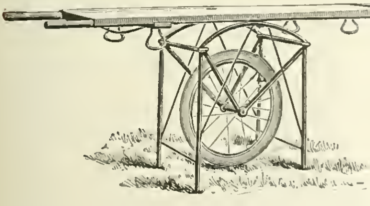
Miscellany.

THE REMINGTON LITTER-CARRIER.

In the April number of the *Albany Medical Annals* appears an interesting article on "The Transportation of the Wounded in War," by James P. Kimball, A.M., M.D., Major and Surgeon, U. S. Army, in which a description is given of a recent invention by Mr. Frederic Remington, the artist, which the writer considers "by far the best adaptation of the wheel to the litter that has yet been made."

Mr. Remington, in his campaign experiences with the army on the frontier, has had an eye for the needs of the wounded soldier, as well as for picturesque scouts and warriors. The invention, which he calls a "Litter-Carrier," consists of a single wheel, and a framework to hold the litter. The wheel is twenty-four inches in diameter, and has a steel rim three inches in width, covered with a rubber band; within the rim is a V-shaped shield of wood, through which the spokes pass. The shield prevents the accumulation of mud or snow on the rim. The frame is made of steel tubing, upon which rest two three-leaved springs, placed twenty-two inches apart, so that the poles of the regulation litter may rest upon them. The litter is fastened to the carrier by a pin which is attached to the lower side of each litter pole, and passes through a hole in the spring, where it is made fast by a cross-pin. Folding legs are let down to hold the carrier firmly in position when the litter is to be put on or taken off. The litter-carrier thus adjusted, with the litter placed upon it, is about thirty inches in height, and could serve on occasion as an operating table. When the carrier is in motion, the legs fold back and are secured by a simple device to the litter poles. The wheel is readily detached from the frame, and the whole can then be packed in small compass. The model which I have tested weighs thirty-seven and one-half pounds, but Mr. Remington is confident that the weight can be reduced to about thirty-pounds.



The litter-carrier is designed for two bearers, one of whom pulls, while the other pushes; but should one of the bearers become disabled it can be moved by one man alone. Over even ground the loaded carrier is moved with little effort; over rough ground the labor is not excessive, and the broad tread of the rubber-covered wheel and the elasticity of the steel springs make the patient's bed at least endurable, if not wholly comfortable. In case of necessity the carrier and patient can be lifted over ditches or other obstacles. I have tried the carrier under a variety of circumstances, up and down steep slopes, along side-hills, on unpaved roads and across fields, and find it admirably adapted to its purpose. In one of these tests of the litter-carrier a patient weighing one hundred and sixty pounds was carried without stopping a distance of one and one-twelfth miles, mostly over uneven meadow land, in twenty-two minutes, and without fatigue to the bearers. Over the same ground and distance the same patient was carried on a hand-litter in forty-six minutes; eleven minutes of this time were spent in necessary rest, and even then the bearers were very tired at the end of the course. For the long distances from the front to the dressing-station, Mr. Remington's litter-carrier promises to be of great value in lightening the labor of the bearers.

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THE PLAGUE AND THE MECCA PILGRIMAGE.

The International Sanitary Council in Constantinople has addressed an identical note to the Ambassadors pointing out the dangers which attach to the occurrence of plague in Jeddah, and to its existence in all probability outside that locality. It is pointed out that should the Mecca pilgrimage become infected, the public health of the Hedjaz, of Turkey, and of Europe will be endangered, and that this danger will not come to to an end with the present year. The Council recommends that direct and energetic diplomatic pressure should be brought to bear on the Porte, in order that it may render fully operative the decisions of the Councils, and adhere strictly to the prescriptions of the International Sanitary Conferences of Paris and Venice. It further recommends the early convocation of a special International Sanitary Commission to carry out the above recommendations. The Council further implores the diplomatic representatives to urge the Ottoman Government to adopt without delay a sound system of sanitation in all towns of the empire, or at least (for the moment) in all the principal centres. The Council despairingly adds that the chances of effectually protecting the pilgrimage against infection are slender, for the execution of some of the measures necessary is wholly prevented, and others are rendered abortive, by the powerlessness of the Porte to enforce their application.

England has a peculiar obligation in this matter, owing to its position in Egypt. It is, as we conceive it, the bounden duty of the government of this country, in the interests of our commerce and of the health of Europe, to bring the strongest pressure to bear upon the Khedive to check, if we cannot wholly prevent, the movement of pilgrims from Egypt to Mecca. The experience of the Indian Government and of Russia has shown that it is quite possible to take effectual steps with this object in view. Time presses, and if some public announcement of the intentions of the British government is not made earlier, we trust that the matter may be brought to the notice of Parliament immediately after the recess. — *British Medical Journal.*

Correspondence.

[Special Correspondence.]

THE MORGUE IN PARIS.

(Concluded from No. 19, p. 459.)

Brouardel's first word is an attraction. His voice is most agreeable and a new-comer is at once pleasantly impressed. As Brouardel proceeds one falls under the charm of his exquisite diction, of his harmoniously flowing phrases. He is a master of the French language, his every word is apt and lucid. Probably there is no other medical teacher in Paris who possesses to an equal degree Brouardel's fascinating gift of speech. His technical familiarity with every bearing of his subject is perfect, and his comparative illustrations, his memory of similar cases and his clear exposition of the anatomical, physiological or toxicological developments which follow the knife are presented in a graceful, unconscious genial flow of words which renders Brouardel the most charming of speakers. The attitude of the audience is one of intense listening. Note-taking is general. There is one woman present and she looks lonely. I have never seen more than a single female student at any one of these conferences and she was never the same. The men make place for her, but do not appear to realize that a woman is among them.

Specimens from the body in pans or pinned to thin slices of cork are passed about the class. The method of extracting information from such facts as become evident is shrewd and French. Not the slightest factor is neglected and the examination is thorough to the last degree. For this reason the cadaver is sometimes left in a condition almost of *débris*. In a search for contusions made evident only by subcutaneous hemorrhage I have seen a body longitudinally slashed literally into ribbons, and in one such case it was the very last cut which revealed the site of the injury. Even in cases in which the cause of death becomes quickly apparent every organ is removed and exhaustively examined. That is the unchanging rule. In the manner of conducting the autopsy, there are several departures from the Virchow method, variations which, so far as I know, are peculiar to the morgue. For example, some years ago at these conferences I observed that the skull was opened by means of a steel hammer provided with a sharp and sufficiently wide blade with which a circular cut in the usual locality was made by breaking the bone with this bladed hammer. The present method is to cut straight through skull and brain from the middle of the frontal bone to the occipital protuberance by means of a common hand-saw. This divides and crushes the brain in the path of the cut but does not in any way interfere with the necessary examination, the two halves of the brain being removed and sliced in the ordinary manner. This procedure saves time, no care being given to protection of the meninges.

The body is not opened by the longitudinal but by an oval incision, which, starting beneath the point of the chin and passing over larynx and trachea, sweeps across nearly to the left axillary line, follows this to just within the brim of the pelvis, pursues the pelvic curves across the lower portion of the abdomen, is carried up on the right side along its axillary line, sweeping back to the top of the sternum. The tongue, larynx and trachea are always removed with the lungs.

The ribs are cut along the line of incision and toward the sterno-clavicular joint by powerful bone forceps with arms twenty inches in length. All the abdominal muscles are removed, with sternum and anterior ribs, and thus a veritable cuirass is displaced, leaving lungs, heart, liver, stomach and intestines in full and normal view. The subsequent procedures are thus much facilitated, especially the exploration of the pulmonary cavity. The heart is divided, *in situ*, into halves by a cut through the ventricles at right angles to the longitudinal axis of the organ. The use of a knife with thin, flexible blade twelve inches in length and narrow in its width is a great convenience in slicing lungs, liver and brain.

Brouardel is exceedingly neat and dextrous in the use of the knife, for, while he does not make the autopsy, he examines the organs as they are passed to him and explores the cavities of the body. I remarked that while the Monday and Friday instructors wear a blouse with long sleeves, Brouardel wears only an apron, not even removing his cuffs, upon which I have never seen a spot of blood or other liquid. His conference is held on Wednesday. Dr. Vibert holds the Monday conference and Dr. Descoust appears on Friday. Naturally, Professor Brouardel is head and front of this course. His knowledge of legal medicine is profound, his manner of exposition bears evidence of rarest ability, and a listener regrets the termination of his hour. I should not forget to mention that all these instructors, and especially Brouardel and Descoust, make strenuous effort to teach the students a careful manner of replying to questions in court, impressing upon them the danger of committing themselves by hasty, immaturely conceived statements, giving them every possible hint as to clever fencing with lawyers, who will try to entrap them by springing upon them queries suggested by the over-night studies of these advocates, and particularly with regard to the action of poisons. This is a striking feature of the course, and, touching all important points, is constantly recurring, until the listener becomes accustomed to the repeated warning: "Gentlemen, be careful how you give your opinion upon this question in court"; and then follows an explanation as to the wisest manner of bearing witness upon the point at issue.

In the course of the conferences are expressed opinions which have a curious — I may say startling — effect upon the Anglo-Saxon mind. For example: During the examination of the body of a man who had been shot by the jealous father of the girl who had wished to marry the victim, the father being jealous because his daughter has been his enforced mistress during the previous two years, the lecturer, no other than Brouardel himself, seriously and soberly impressed upon his audience his opinion, that a widowed father should not be permitted, under any circumstances, to live alone with an unmarried daughter. It would not be safe. Her virtue would certainly be corrupted, etc. In cases of all female cadavers above the age of sixteen years there never fails to be a sharp and critical examination of the hymen (if any there be), vagina, uterus and adnexa, with what may be seen to be a foregone conclusion that evidences of virginity will not be found. This portion of the autopsy and the many opinions pronounced and allusions made bear a *cachet* which is peculiarly French in its significance. There are autopsies which reveal most singular and interesting characteristics of the French life and mind. This is notable in the manner of death, both suicidal and homicidal. According to Professor Brouardel, methods of suicide follow the changes of the moon. For instance, during one month suicides seek death by the pistol; during the following month they adopt hanging; the next month drowning; then follows charcoal; then springing from high windows; then poison; and so on. Not only does there exist this variety of suicide, but the manner of death is affected by the season, certain methods of seeking death prevailing in the winter season, others being confined to warmer months. In connection with every case at the morgue there is the *dossier*, the history of the victim and the commingling of brutality, naïvete, selfishness, devotion, simplicity and cunning, easily weaves for the listener a vivid romance. If space allowed I would outline some of these stories together with their extraordinary pathological revelations.

Dr. Vibert, who addresses the class on Monday, is chief of the Anatomo-Pathological Laboratory, and a valuable member of the medico-legal force of Paris. He is active in all cases of sudden and criminal death. It was he who conducted the examination of the bodies burnt in the Bazar of Charity last May. As a teacher he is simple, solid, intelligent, but without grace. He makes the autopsy with his own hands, aided only by a servant, who also takes the necessary notes.

Dr. Descoust holds the conference on Friday. He is chief of the Medico-Legal Laboratory — an apt, ready, keen-witted speaker, wholly *sui generis* in method and manner. His course is made peculiar by the fact that upon entering the room he at once calls for a student to make the autopsy, and this feature of his hour is amusing because of his facetiousness in inducing a student to come forward. There is always need of much urging, and this he does in a quaint, comical fashion, from which, however, there is no escape. If the student has not previously made a medico-legal autopsy so much the better for Descoust and so much the worse for the student. The latter removes coat and cuffs, assumes blouse and apron and begins the work, but not until all that can be gained, as to cause of death, from external signs has been thoroughly considered: The probable age of body, length of stature, probable occupation during life, significance of external injuries (if any), probable number of days since death occurred (judging especially by the condition of the eye), what the condition of the skin indicates, what the color of the nails presupposes, what is pointed out by ease or difficulty of removing hair from the body, indications of the stage of decomposition, etc. Nothing is neglected, and this chapter of the examination occupies at least one-third of the hour. If there be bullet-wounds, the student is required to pronounce on the probable distance of the pistol or gun from the body when discharged and the position of the individual who fired it. A prolonged description of the condition of the skin from impact of the ball and from effects of grains of powder, the shape and character of the bullet-hole then follows. The same care in case of knife wounds. If death occurred by hanging, the autopsy is not allowed until every possible indication that death was caused by the rope has been dragged from, or put into, the student's brain. The list is a long one, and I have known Descoust to spend forty minutes in awakening the student's mind to the probable condition of the capillaries of the skin, of the sterno-cleido muscles, of the carotids, the hyoid bone, the cartilages of the larynx, the vertebræ, the mucous membrane, etc. In case of poisoning by whatever agent, the disquisition is lengthy and exact.

These few illustrations will show the cases and precision of the examination. No new step is permitted until every previous one has been made perfectly clear. As the autopsy proceeds measurements, weights, colors, every slightest aberration from the normal, is observed and noted. All is made precise and scientific. In all suspected cases great care is taken in preservation of blood, urine, contents of stomach and specimens of various tissues for further examination elsewhere.

If the student be too previous in his diagnosis, he may expect no mercy; for, while Descoust is kindly and patient, he is exacting on all points and much anatomy must be learned by the officiating student who is exposed to Descoust's jovial but unsparing questions. Occasionally Descoust loses his equanimity and then reminds me of Wegner, of Berlin, whose sarcasm will be remembered by more than one of your readers. On one occasion, during a course of normal histology in which I was a student in (1872), Wegner was called by a German to look into his microscope. He did so, and then, straightening himself, he said with a *höhnisch* laugh and tone: "Das ist aber classisch. Wissen Sie was ich sehe? Ich sehe nichts als Baumwolle, Luft und Schmutz!" The student's embarrassment may be left to the imagination. In a similar fashion Descoust sometimes drops upon an unlucky student, but, unlike Wegner, he makes amends by some clever humoristic remark which restores the equanimity of the student.

It was an unexpected, unusual, in fact laughable specimen which Descoust one day presented for examination, namely, a little, dry, shrivelled fetus of three months, and it was a most instructive and full hour which followed; for, the student found himself largely at a loss in his attempts to decide the age of the fetus, its probable means of birth, whether the result of involuntary or criminal abortion, as to the significance of the anatomical conditions of the fetus, etc.

This is a proof of the thoroughness of the course; for one easily conceives the multitude of cognate questions which are evolved by every autopsy, and not one is neglected nor forgotten.

While it involves some trouble for a foreigner to obtain admission to these conferences, he would be the gainer if he secured the necessary card. H. O.

RECORD OF MORTALITY

For the Week ending Saturday, May 7, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Cerebro spinal men.
New York . .	3,438,899	1218	418	9.92	18.24	.80	3.04	.72
Chicago . . .	1,619.226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	445	128	—	—	—	—	—
St. Louis. . .	570,000	160	38	5.04	18.27	1.26	1.26	—
Baltimore . .	550,000	190	73	6.89	24.57	.63	2.52	.63
Boston . . .	517,732	208	54	9.60	15.84	.48	1.92	2.88
Cincinnati . .	405,000	139	—	2.88	10.80	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	101	58	17.10	16.83	5.94	1.98	—
Washington .	277,000	90	26	10.00	22.22	3.33	2.22	3.33
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	59	12	11.83	8.45	—	1.69	10.14
Worcester . .	105,050	31	11	12.92	19.38	—	—	9.69
Fall River . .	95,919	36	13	11.44	8.58	11.44	—	—
Nashville . .	87,754	31	5	—	16.15	—	—	—
Lowell . . .	87,193	36	14	5.72	25.74	—	—	—
Cambridge . .	86,812	27	7	7.40	25.90	—	3.70	—
Lynn	65,220	—	—	—	—	—	—	—
Charleston . .	65,165	40	15	15.00	15.00	12.50	—	—
New Bedford .	62,416	10	4	—	10.00	—	—	—
Somerville . .	57,977	16	9	—	31.25	—	—	—
Lawrence . .	55,510	17	7	11.76	11.76	—	5.88	—
Springfield . .	54,790	12	2	—	16.66	—	—	—
Holyoke . . .	42,364	8	5	37.50	12.50	25.00	12.00	—
Salem	36,062	18	1	—	11.11	—	—	—
Brockton . .	35,853	10	3	20 00	—	—	—	20.00
Malden . . .	32,894	10	1	—	10.00	—	—	—
Chelsea . . .	32,716	7	2	—	—	—	—	—
Haverhill . .	31,406	6	0	16.66	33.33	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	8	1	—	20.00	—	—	—
Taunton . . .	27,812	10	1	—	10.00	—	—	—
Quincy . . .	22,562	1	1	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	8	0	—	12.50	—	—	—
Everett . . .	21,575	2	0	—	—	—	—	—
North Adams .	19,135	8	5	—	25.00	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Chicopee . .	17,368	4	2	—	25.00	—	—	—
Brookline . .	16,164	—	—	—	—	—	—	—
Medford . . .	15,832	3	1	—	33.33	—	—	—

Deaths reported 2,979; under five years of age 919; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 228, acute lung diseases 437, consumption 287, diphtheria and croup 56, diarrheal diseases 34, cerebro-spinal meningitis 30, whooping-cough 28, measles 26, scarlet fever 26, typhoid fever 20, erysipelas 9.

From whooping-cough New York 18, Boston and Cincinnati 3 each, Baltimore and Pittsburg 2 each. From measles New York 20, Pittsburg 3, Baltimore 2, Cincinnati 1. From scarlet fever New York 19, St. Louis 3, Boston 2, Baltimore and Lowell 1 each. From typhoid fever New York and Pittsburg 6 each, Baltimore and Boston 2 each, Washington, Charleston, Cambridge and Haverhill 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending April 30th, the death-rate was 18.4. Deaths reported 3,965; acute diseases of the respiratory organs (London) 274, measles 177, whooping-cough 140, diphtheria 66, fever 29, scarlet fever 28, diarrhea 27.

The death-rates ranged from 10.3 in Cardiff to 30.0 in Liverpool; Birkenhead 15.2, Bradford 20.3, Bristol 16.9, Gateshead 26.6, Hull 18.6, Leeds 18.6, London 17.2, Manchester 18.1, Newcastle-on-Tyne 22.4, Nottingham 13.9, Portsmouth 14.0, Sheffield 21.1, Sunderland 26.8, West Ham 15.5.

METEOROLOGICAL RECORD

For the week ending May 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....1	30.00	58	67	48	51	59	54	N.W.	S.E.	12	5	C.	C.	
M...2	30.08	50	54	46	78	77	78	E.	S.E.	7	7	O.	F.	
T....3	30.14	44	47	42	96	86	91	N.E.	N.E.	10	10	R.	O.	
W...4	30.12	44	48	40	81	79	80	E.	S.E.	12	6	O.	O.	.18
T....5	29.93	56	64	48	76	82	79	W.	S.W.	6	12	O.	R.	.01
F....6	29.80	54	63	44	78	68	73	N.	N.W.	10	4	O.	F.	.27
S....7	29.70	46	62	45	55	69	62	E.	S.E.	3	7	O.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 7, 1898, TO MAY 13, 1898.

Major Edward T. Comegys, surgeon, is relieved from duty at Fort Sill, O. T., and will report in person to **Major-General John R. Brooke**, U. S. A., commanding Provisional Corps, Camp George H. Thomas, Chickamauga National Park, Ga., for assignment to duty as acting medical purveyor, for the supply of troops stationed at that point.

Acting Assistant Surgeon **Frederick S. Dewey**, U. S. A., will proceed from Oklahoma City, O. T., to Fort Sill, O. T., and report in person to the commanding officer of that post for duty.

Acting Assistant Surgeon **G. M. De La Torre**, U. S. A., is assigned to duty with the 10th Infantry, Tampa, Fla.

Acting Assistant Surgeon **W. P. Lawrence**, U. S. A., is assigned to duty with Light Battery B, 4th Artillery, Port Tampa, Fla.

Acting Assistant Surgeons **Llewellyn P. Williamson**, **Frank Metcalfe** and **Randolph M. Myers**, U. S. A., will proceed from this city to New York City, and report in person to **Major George H. Torney**, surgeon, in charge of hospital ship for duty.

Acting Assistant Surgeons **Edwin W. Patterson**, U. S. A., and **Edgar A. Vander Veer**, U. S. A., will proceed from this city to Atlanta, Ga., and report in person for duty to **Major Blair D. Taylor**, surgeon, in charge of the General Hospital, Fort McPherson, Ga.

Acting Assistant Surgeon **F. A. E. Disney**, U. S. A., will proceed from this city to Fort Jefferson, Fla., and report to the commanding officer of that post for duty.

Acting Assistant Surgeon **Wilfrid Turnbull**, U. S. A., will proceed from this city to Key West, Fla., and report in person for duty to the commanding officer, Company E, Battalion of Engineers, at that place.

Acting Assistant Surgeon **Edward T. Gibson**, U. S. A., now at Minneapolis, Minn., will proceed without delay to Fort Yates, N. D., and report to the commanding officer of that post for duty.

A contract having been made with **Dr. Carroll E. Edson**, of Denver, Col., for duty as acting assistant surgeon at Fort Logan, Col., he will proceed to that post and report to the commanding officer for duty.

Captain William C. Borden, assistant surgeon, is relieved from duty with the 3d Infantry, in camp near Mobile, Ala., and will report in person to **Major William R. Hall**, surgeon, for duty at the General Hospital, Key West, Fla.

Acting Assistant Surgeon **H. P. Jackson**, U. S. A., will proceed from Charleston, S. C., to Key West, Fla., and report in person to **Major William R. Hall**, surgeon, in charge of General Hospital, at that place for duty.

Acting Assistant Surgeon **Charles K. Cutter**, U. S. A., now on duty at Boston, Mass., is assigned to duty as assistant to the attending surgeon and examiner of recruits in that city.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING MAY 12, 1898.

Peckham, C. T., passed assistant surgeon. Granted one day's extension of leave of absence. May 4, 1898.

Vaughan, G. T., passed assistant surgeon. Granted leave of absence for six days from May 9, 1898. May 7, 1898.

Stimpson, W. G., passed assistant surgeon. Granted leave of absence for seven days from May 17, 1898. May 11, 1898.

Eager, J. M., passed assistant surgeon. Upon being relieved by Assistant Surgeon **A. R. Thomas**, to proceed to Galveston, Tex., and assume command of Service. May 12, 1898.

Thomas, A. R., assistant surgeon. Upon being relieved by Assistant Surgeon **S. B. Grubbs**, to proceed to Cape Fear Quarantine, Southport, N. C., and assume command. May 12, 1898.

Cumming, H. S., assistant surgeon. To report at Immigration Depot, New York, N. Y., for duty. May 12, 1898.

Grubbs, S. B., assistant surgeon. Relieved from duty at New York, N. Y., and to proceed to Reedy Island Quarantine and report to commanding officer for duty and assignment to quarters. May 12, 1898.

Russell, H. C., assistant surgeon. To proceed to Chicago, Ill., and report to commanding officer for duty and assignment to quarters. May 6, 1898.

BOARD CONVENED.

Board convened to meet at Washington, D. C., May 10, 1898, at 10 o'clock, a. m., for the physical examination of an officer of the Revenue Cutter Service: Surgeon **P. H. Bailhache**, Chairman, Surgeon **George Purviance** and Surgeon **H. W. Austin**, Recorder.

SOCIETY NOTICES.

American Gynecological Society.—This Society will hold its twenty-third annual meeting at Boston, May 24, 25 and 26, 1898. The meetings will be held at the hall of the Boston Society of Natural History, corner Berkeley and Boylston Streets. All physicians are cordially invited to be present.

Maine Medical Association.—The forty-sixth annual meeting will be held in Common Council Chamber, City Building, Portland, Me., Wednesday, Thursday and Friday, June 1, 2 and 3, 1898.

AMERICAN MEDICAL ASSOCIATION.

Railroad Rates.

The Western Passenger Association, Chicago, formally announces the following rates for the Denver meeting of the American Medical Association, June 7-10, 1898.

Rate. — One regular first-class normal tariff (not temporarily reduced), fare, *plus* $2.00, for the round trip from Association territory to Denver, Colorado Springs and Pueblo, Col., and return.

Dates of Sale. — Tickets to be sold from Eastern Committee territory June 2, 4 and 5, and from Trans-Missouri territory June 5 and 6, 1898.

Limits. — On going, trip tickets to be good for continuous passage, commencing on date of sale up to first Colorado common point en route; stop-over to be allowed on going trip at intermediate Colorado common points, but to arrive at destination not later than June 7, 1898. The return to be continuous passage, beginning on date of execution by joint agent, with the provision that the return passage shall not commence earlier than June 12, nor later than July 6, 1898. Tickets may be executed for return at destination or either of the other Colorado common points en route. Purchaser to commence his continuous passage return journey from point of execution.

Diverse Routes. — For this occasion tickets may read, west of the Missouri River, going one route and returning another *via* any regularly authorized route, *via* which regular short line one-way rates are properly applicable.

RECENT DEATH.

Joseph Stedman, M.D., M.M.S.S., of Jamaica Plain, died at Watkins, N. Y., May 16, 1898.

BOOKS AND PAMPHLETS RECEIVED.

Injuries from "Live" Electric Light and Trolley Wires. By J. J. Brownson, M.D., Dubuque, Ia. Reprint. 1898.

The Pathology of Ante-Natal Life. An Address delivered before the Glasgow Obstetrical and Gynæcological Society. By J. W. Ballantyne, M.D., F.R.C.P.E., F.R.S.E. Reprint. 1898.

Original Articles.

HYSTERECTOMY FOR REMOVAL OF LARGE UTERINE MYOMATA BY THE COMBINED VAGINAL AND ABDOMINAL METHODS.[1]

BY DUDLEY P. ALLEN, M.D., CLEVELAND, O.

A PAPER read before the Medical Congress in Washington, last spring, by one of your most widely known surgeons, namely, Dr. Homans, suggested my subject for to-night. In his paper he discussed the whole question of hysterectomy, both vaginal and abdominal, together with the indications for, and the technique of, operation. This paper will be limited to the discussion of the technique of abdominal hysterectomy for uterine myomata. Though interesting to enumerate the steps by which the operation has reached its present advanced position, it would be out of place; and to discuss methods, which though the most successful of their time are now superseded by others, would trespass too long upon your patience. I shall, therefore, pass by all consideration of the extra-peritoneal, and of the older intra-peritoneal methods, and at once proceed to present what is, in my judgment, one of the best of recent operations. The method of which I speak is that of Doyen, of Rheims. The operation is, in a word, to open the abdomen, draw the uterus forward over the pubes, incise the vaginal vault through the Douglas cul-de-sac, draw the cervix upward into the abdomen, and without ligature to divide first one broad ligament, next the attachments of the uterus to the bladder, and last the other broad ligament, the broad ligaments being seized and held by assistants during the removal of the uterus and until their vessels can be secured and ligated.

As the value of any method must depend upon the success with which it enables the operator to avoid dangerous complications, it may be well to consider in the beginning the dangers attending the operation of hysterectomy. They may, in brief, be enumerated as follows:

(1) The exposure of the abdominal viscera incident to a large incision and prolonged operation. Since to remove large fibroids long incisions are necessary, any method which shortens the time of that portion of the operation taking place while the abdomen is open is of great value.

(2) Hemorrhage occurring during operation has two dangers. The first is that incident to all loss of blood. The second is, that if the Trendelenburg position is used, blood may gravitate toward the diaphragm, and increase the dangers of subsequent infection.

(3) Injury to the various viscera is by no means of rare occurrence. Ureters, intestines and bladder have, not infrequently, been injured.

(4) Infection of the abdominal cavity has ever been the bane of intra-abdominal methods, and the complete disinfection of the uterine cavity and vagina is so difficult as to make welcome any method which secures certain asepsis of these tracts.

(5) Drainage as a means of avoiding or escaping infection, should it occur, is of unquestionable benefit. If a method adds facility of drainage to its other advantages, it certainly enhances its value.

(6) Adhesions or hernia may result from leaving the pelvic floor uncovered by peritoneum.

Before discussing the operation of Doyen, by which the uterus is removed through an abdominal incision, I shall speak of a modification which seems to me of value in many cases. The modification is the division of the cervix from the surrounding tissues of the vagina as the first step in the removal of the uterus.

Among the dangers incident to abdominal hysterectomy, is that infection may take place from the vagina or the uterine canal, whether the uterus be amputated at the level of the internal os, or enucleated. Unquestionably the danger of such infection is not great, but its possibilities are by no means to be disregarded. The difficulty of thoroughly disinfecting either the vagina or cervical canal by means of douches or scrubbing is universally recognized. Unquestionably by care much can be done to avoid such infection. In a case of large sloughing fibroid, with a gangrenous mass the size of a fist extending into the vagina, I removed both uterus and cervix through an abdominal incision, without infection. The fact remains, nevertheless, that both uterine cavity and vagina are liable to be sources of infection.

After a patient is anesthetized, it is an easy matter in a few moments thoroughly to curette the cervical canal and pack it tightly with antiseptic gauze, and at the same time to disinfect the vaginal vault. When this has been done, the cervix, which has been seized by a strong pair of vulsellum forceps, is drawn downward. With a cautery the vaginal tissue about the cervix is divided, as is done in vaginal hysterectomy. After the entire cervix has thus been separated, it may be thoroughly cauterized. By this means the cervix is rendered absolutely sterile. The benefits of this procedure as a preliminary to opening the abdomen are twofold:

(1) Asepsis is secured with more certainty than by any other method.

(2) The division of the vaginal vault by the cautery is in most cases performed quickly and without hemorrhage. If the cervix be very short or difficult to reach, as is sometimes the case when the fibroid is developed in the lower part of the uterus, its separation by the cautery may be unusually difficult. It can, however, usually be accomplished.

This part of the operation requires less time than is often needed to control the bleeding which takes place when the vault of the vagina is divided through the abdominal incision. No attempt is made to do more than divide the vaginal vault. The abdominal cavity is not opened from below. A long pair of slender curved forceps is then used to seize the tissue just behind the cervix at the point at which it is divided by the cautery. The object of this pair of forceps is that when the abdomen is opened the forceps may be pushed upward into the Douglas cul-de-sac, and by marking absolutely the vault of the vagina, enable the surgeon with certainty and rapidity to open downward into the vagina. After the long forceps have seized the vaginal vault, the vagina is filled loosely with iodoform gauze. The gauze has clamped upon it another pair of forceps, so that it may easily be removed. The handles of both forceps are surrounded by sterile towels, so that when the long forceps are pushed upward into the Douglas cul-de-sac, to mark the point at which the vagina is to be opened from above, no infection may take place.

The question may arise whether valuable time is not lost by the vaginal part of the operation. To this may be replied that the time required is short, and is more than compensated for by the certainty of asepsis, as well as by the increased speed of the remaining part of the operation. Having completed the vaginal portion of the operation, the patient is placed in the Trendelenburg position, the abdomen is opened, the enlarged uterus is drawn outward over the pubes, and the intestines are carefully covered with gauze, shutting them off from the air, and also preventing the flow of blood toward the diaphragm.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, February 3, 1898.

The advantages of the Trendelenburg position require no discussion. By pushing the pair of forceps in the vagina upward and cutting down upon them close behind the uterus, the vagina is quickly opened, and the loss of blood is so small that it may be disregarded. With a pair of long vulsellum forceps the posterior lip of the cervix is then seized, and drawn backward and upward into the abdominal cavity, when with a second pair of forceps the anterior lip is seized in the same manner thus securing a firm grasp upon the uterus. It is my custom at this point of the operation to tip the uterus toward the umbilicus, until with a single sweep of the knife the peritoneum is divided above the bladder. The extent of the anterior peritoneal flap is thus definitely determined, and the danger of cutting away too much in the latter part of the operation is avoided. The uterus is then carried again over the pubes. The operator takes in his left hand the forceps holding the cervix, and drawing the cervix upward divides all the tissues about it. While continuing to pull the cervix upward and backward, an assistant seizes the broad ligament on the side of the uterus opposite the operator, who quickly divides the broad ligament from below upward, the incision being, when possible, external to the tube and ovary, so that these remain attached to the uterus after the broad ligament is divided. Bleeding from the broad ligament is prevented by pressure made by an assistant upon the tissues as they are divided. The traction employed to draw the cervix upward and backward aids in separating the uterus from the bladder and ureters, so that a few cuts of the scissors are all that is necessary for this part of the operation. After the separating of the uterus from the bladder, the remaining broad ligament is divided, hemorrhage being controlled in like manner by the hand of the assistant pressing upon the vessels. The ovarian and uterine arteries are then ligated. Commonly a few ligatures are sufficient to control all hemorrhage. The speed with which the operation is performed is surprising to one who has never tried the method. The intestines, ureters and bladder are also easily avoided. Little time is lost in distinguishing what tissues are to be divided.

The advantages of this operation are (1) its speed, (2) the relatively small loss of blood, and (3) its safety. The method of closing the floor of the pelvis is a matter of choice. A running suture may be used to unite the peritoneum over the divided tissues, entirely closing the pelvic floor, or a small opening may be left to provide for drainage through the vagina. The long curved forceps used to mark the vaginal vault are not removed during the operation, but are allowed to remain in the vagina, that they may be utilized to seize the strips of gauze and draw them downward from the abdomen into the vagina. The upper extremity of the gauze strips is left even with pelvic floor. Ideal drainage is thus secured. The gauze may be removed on the second day after operation, with little pain and no disturbance.

It has seemed necessary thus briefly to sketch the steps of the operation that it might be more satisfactorily discussed. As proposed by Doyen, the operation is one of the most brilliant in surgery. When compared with the older extra-peritoneal methods, it amounts to a revolution. It marks an equally radical advance when compared with the older intra-peritoneal methods, since until within comparatively recent years, the extra-peritoneal methods have produced results quite equal to the older intra peritoneal methods.

It is necessary, however, to compare the Doyen operation with the more modern procedure referred to by French surgeons as the American method, namely, the method largely in vogue in this country, of dividing first one broad ligament, next the cervix at the level of the internal os, and, lastly, the remaining broad ligament, seizing the main arteries as they are encountered. Although it is common by this method to leave the cervix undisturbed and the vagina unopened, the cervix may also be removed. The advantages claimed for the method are that if the vagina is not opened the dangers of infection are decreased. It is further claimed that the pelvic floor which remains is more secure. It is also said that by thoroughly cauterizing the cervical canal, there is additional security against sepsis, and that the cervical canal secures sufficient drainage.

The reputation of surgeons who practise this method of supra-vaginal amputation, and their success, is sufficient to place the operation upon a very high plane. It is difficult to settle the relative value of the two operations by statistics. Experience has shown, however, that infection through the cervical does occur in a certain number of cases. If it does occur, the cervical canal is too small to secure the most satisfactory drainage, and it would seem that this could be secured with much more certainty through the opening made by the removal of the entire cervix.

Although many who operate by the Doyen method entirely close the pelvic floor by a continuous suture, it has seemed to me wise, in cases in which there were adhesions, and in others in which there was extensive development of the tumor in the pelvis, to employ drainage. After the cervix has been removed, if gauze be used for drainage, it is removed with so great ease, and causes so little pain and disturbance that the added security gained by the use of drainage seems to more than compensate for its disadvantages. Beside the supra-vaginal method of performing hysterectomy and the method of Doyen there are many others.

Richelot dissects down, anteriorly, separating the bladder from the uterus, and ligates the uterine arteries on either side. He then opens into the vagina anterior to the cervix, seizes the cervix with forceps and draws it upward into the abdomen. The broad ligaments are then divided from below upward, much as in the operation of Doyen, save that the opening is anterior rather than posterior to the uterus, and the arteries are secured as they are divided, rather than controlled by pressure and ligated later.

Segond, after dividing one broad ligament and ligating the vessels as they are encountered, opens the vagina and enucleates the cervix, and, lastly, divides the second broad ligament.

After trying the two methods, that of Doyen seems to me superior, since it is far more easy to open the vagina through the Douglas cul-de-sac than to do so between the uterus and bladder.

I have also made use of the operation, formerly so common in Germany, of enucleating fibroids if subperitoneal and closing the cavity thus produced by sutures. Several cases operated in this manner have, however, died of sepsis, so that I early abandoned the method. The amount of blood lost is greater than by the operation of Doyen; and it is difficult to prevent the blood from flowing among the intestines, so that its complete removal is difficult if not impossible. Thus to enucleate several fibroids from the same uterus requires more time than to extirpate the entire organ; there is no opportunity for drainage; sepsis may occur from a chance connection with the uterine canal; and, lastly, there is no certainty that small fibroids which remain may not develop later.

In advocating thus a method of hysterectomy, it is not with the idea that it is superior to all others, and must be used in all cases. It behooves an operator to understand all methods, and be prepared to suit them to the existing conditions. There are, for instance, cases in which a fibroid develops itself in the posterior uterine wall, lying low down in the pelvis between the rectum and uterus. Such a tumor may so obstruct access to the vaginal vault as to render it impossible to cut down into the vagina through the Douglas cul-de-sac. In such cases I have enucleated the fibroid, after which it has been possible to proceed with the opening of the vagina in the usual way. Similar difficulties may be encountered with the development of tumors between the layers of the broad ligament, but these may also be enucleated and the uterus be extirpated later.

This paper has been limited to a discussion of the method to be used in removing the uterus when enlarged by fibro-myomata. Hysterectomy on account of inflammatory conditions will not be considered.

The advantage of the combined vaginal and abdominal method of performing hysterectomy may be summarized as follows:

(1) The vaginal part of the operation is performed while the abdomen is still unopened; and it is my belief that, inasmuch as this shortens the time required for the removal of the uterus after the abdominal cavity is widely opened, it is greatly to the patient's advantage. This is for the reason that the shock incident to prolonged operations in the abdominal cavity is often proportionally greater than in other operations.

(2) The division of the vaginal vault by the cautery requires but a short time, and is accompanied by little if any hemorrhage. This shortens the time required to control the bleeding, which often occurs when the vaginal vault is divided from the side of the abdomen.

(3) Owing to the fact that the patient is anesthetized, it is possible to curette, disinfect and pack the cervical canal and disinfect the vaginal vault. After dividing the vaginal vault, the tissues of the cervix may be thoroughly cauterized and the field of operation rendered sterile.

The advantages of the Doyen method of operation are:

(1) That the vagina is opened through the Douglas cul-de-sac with great speed, especially if the vaginal vault be already divided and the point of division marked by a pair of forceps in the vagina used to push the tissues upward.

(2) Having opened the vagina through the Douglas cul-de-sac by seizing the cervix and pulling it upward and backward, the remainder of the cervical attachments are very quickly divided; and since strong traction is used, the cervix and uterus are pulled away from the ureters and bladder, greatly lessening the danger of wounding these important structures.

(3) Since the operation can be performed with great rapidity and the hemorrhage is controlled by the pressure of the assistant's hand, it becomes necessary to tie only the chief arterial trunks, and no time is lost by securing smaller arterial branches or the same artery if divided by chance successively at different levels.

(4) Should drainage be indicated at the close of the operation, or should the subsequent development of symptoms of infection render it desirable, the pelvis can be drained easily and in the most efficient manner.

(5) The method secures a most satisfactory pelvic floor.

There are three great dangers incident to surgery. They are, (1) prolonged operation, (2) hemorrhage, and (3) sepsis. These dangers are overcome in a wonderful degree by the combined vaginal and abdominal method of performing hysterectomy for large fibroids.

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THE ARSENIC IN THE MARSH CASE.

BY EDWIN J. BARTLETT, M.D., HANOVER, N. H.

Isabella A. Marsh and William Buzzell were tried at Montpelier, Vt., March 11 to April 5, 1897, for causing by poison the death of Isabella's husband, George A. Marsh. Both respondents were found guilty of murder in the first degree. Petition for a new trial, based on the exceptions, was denied by the County Court, and about a year later this decision was sustained by the Supreme Court of the State.

The trial was a notable one, from the gravity of the issue, the dignity of the judicial procedure and the ability of the counsel upon both sides. The State's evidence, massed and presented with persistent thoroughness, was contested with the most complete preparation especially upon technical points, and unflagging alertness.

OUTLINE HISTORY OF THE CRIME.

The Marshes and Buzzell lived in Northfield. Isabella was Marsh's third wife and he was her second husband; each had children by a previous union. Buzzell also was married, but not living with his wife. Mrs. Marsh, as shown in the evidence, had made no secret of her unhappiness with Marsh and her desire to be rid of him; in the meantime, however, the marriage compact was not interpreted too strictly. Buzzell, intimate with both, apparently enjoyed a husband's privileges without very serious protest from the legal spouse. In fact, the evidence of criminal intimacy was extraordinary in its openness.

Marsh had suffered more or less from poor health, and had consulted several physicians. His habits were not exemplary; and no one seems to have found any definite ailment, or really to have given satisfactory attention to the matter. On Thursday (January 23, 1896) he was well enough to be giving an exhibition of his strength and agility to some visiting peddlers, and on Friday in the night his last illness began.

Saturday morning Mrs. Marsh sent for Buzzell, who came to the house and remained till several days after Marsh's death, assisting in the most intimate way in such care as Marsh had and in all the funeral preparations. A physician, promptly summoned, made seven calls and doubtless afforded Marsh some relief; but he did not discern the underlying cause of a puzzling illness.

Many neighbors were in and out, whose collective testimony makes apparent the sufferings of Marsh and the brutal and arbitrary nursing afforded him. He besought the doctor to put him out of his misery; he was tormented with thirst; he guessed no one would care if he did die; he begged his wife, "For God's sake go according to the doctor's directions." And the nurses varied the doses, shook him when he had "spells," took the feather bed from under him when they thought he was dying. Buzzell closed his eyes before he was dead; Mrs. Marsh, with unquotable language, refused the doctor's request for counsel. They neglected to send for Marsh's mother. When, however, the physician requested an autopsy, Mrs. Marsh refused that, "because she couldn't bear to have George all cut up."

One visitor, whose evidence the defence strove to discredit, described the administration by Buzzell of a small quantity of white powder, not of the medicines left by the doctor, about five hours before Marsh's death.

Marsh died about 1 A. M., Wednesday, January 29th, after five days of acute illness. Mrs. Marsh and Buzzell went off during the day; returning, they occupied together the room and bed in which Marsh died, then moved upstairs for a day or two. Mrs. Marsh's son and Marsh's two young sons testified to these facts.

Gossip seized upon the case; and the autopsy requested by the physician but refused by Mrs Marsh became inevitable. She then said that she thought poison would be found in him, because he had been using some in horse medicine the day before he was taken sick. It was shown at the trial that Mrs. Marsh had attempted to buy arsenic; also a witness testified that she had said that "she was now going to get rid of George," and had asked how much arsenic it took to kill a man.

THE DEFENCE.

In defence it was urged that much of the State's testimony was irrelevant, since the respondents were being tried for murder, not adultery. Marsh's health was reviewed for two or three years, with the claim that serious disease existed, and it was urged that his symptoms and the findings of the autopsy were more consistent with Bright's disease than with arsenical poisoning. This view was furthered by the albuminous urine, the lack of fatty changes in the liver and kidneys, some confusion in the evidence as to the weight of one of the kidneys, and the rather slight inflammation of the gastric mucous membrane. The arsenic was not contested, but it was claimed that he had been despondent and had contemplated suicide. So, as his disease progressed and his sufferings increased, he may naturally have attempted to end his life by poison.

MARSH'S SYMPTOMS.

During his fatal illness he suffered from the sensation of a lump in his throat, from general distress amounting to agony, pain all over, severe and continuous vomiting, pain in the stomach and bowels, diarrhea, thirst, great restlessness, slight "spasms," and toward the last slightly wandering mind. The temperature was constantly normal. The pulse steadily increased in rapidity, being 70 to 85 Saturday, 90 Sunday, 100 to 110 Monday, 130 to 135 Tuesday.

THE PHYSICIAN'S TREATMENT.

The physician who made seven calls was naturally and reasonably perplexed. The Somerville cases, among others, show that without cause for suspicion arsenical poisoning does not necessarily reveal itself. This doctor first thought that Marsh had eaten something that disagreed with him, and washed out his stomach; later he thought the disease was grip of the bowels. He asked for a consultation, and finally for an autopsy, both of which were refused. That Marsh was suffering and that the doctor sought assiduously to reach the trouble is evident from the remedies employed during these five days. They were, grouped somewhat in the order of use: bismuth subnitrate, acetanilid tablets, soda water; morphine powders; washing the stomach out with warm water, soap and water injections, morphine and atropia hypodermically, opium and starch injections; dilute hydrocyanic acid, ice; bismuth, calomel, copper arsenite; digitalis, whiskey; tincture of opium all along.

THE EXAMINATION OF THE BODY.

On the 17th of February, nineteen days after death, Dr. J. H. Linsley, of Burlington, made a thorough autopsy. No cause of death was found, and, except as hereafter noted, no considerable lesion. Later he prepared and studied some fifty sections from the various organs, from which he furnishes the following summary of the more important findings:

Stomach. — The mucosa showed a more or less extensive necrosis. There was a granular deposit and a considerable amount of pigment both in the mucosa, in the glands thereof, and in the walls of many of the blood-vessels. There was a slight growth of delicate connective tissue in the deeper layers of the mucosa and in the sub-mucosa.

Liver. — There was a deposit of pigment about the intra-lobular vessels, a few areas of slight localized hepatitis, both parenchymatous and interstitial. The liver cells were otherwise normal. The capsule was normal. The blood-vessels were not unusually filled with blood.

Kidneys. — There was a slight hyperplasia of the lining cells of some of the Malpighian bodies. There was no apparent change in the glomeruli *per se*. The cells of the convoluted tubes were intact, and showed no morbid change. In the medullary portion of the organ there was some new growth (very slight) of interstitial connective tissue, although this had not, apparently, been extensive enough to have changed any of the lining cells of the tubules in the immediate vicinity of the neoplastic material. The blood-vessels in this part of the kidney were congested, and some infiltration of blood-corpuscles outside the capillary walls was noted.

Lungs. — The alveolar walls showed some thickening in places; the walls of many of the bronchi were thickened and infiltrated with lymphoid cells, and there was some desquamation of the lining cells. Some of the blood-vessels were filled with blood. The lower lobes were congested; the vessels in this part were greatly engorged with blood, and there were small and slight hemorrhages into many of the air vesicles. In one place the pleura appeared thickened and its blood-vessels congested. The pulmonary stroma contained the ordinary amount of black pigment.

Three days later, February 20th, Dr. Linsley delivered to the chemist in the presence of a witness the following parts of the body in well-sealed specimen jars: (1) Stomach (unopened); (2) brain and spinal cord; (3) penis, testicles, ureters, bladder, rectum, prostate, portions of biceps, sartorius and humerus; (4) kidneys, lungs, diaphragm, spleen, heart, liver; (5) intestines, large and small, pancreas; (6) urine in bottle, originally 2½oz., post-mortem.

The stomach, immediately opened and inspected by pathologist and chemist, contained 163 gm. (160 c. c., 5⅓ f. oz.) of a greenish-brown fluid in which floated two or three soft white masses. The organ was coated within with adhesive, brown-stained mucus, and the surface below the mucus showed irregular patches of moderate redness. Later yellow patches appeared.

The intestine contained a thin paste of yellowish-brown color. Its surface was also catarrhal, but no areas of special redness were observed. One hundred and sixty grammes of contents were collected with the aid of water, but it was not practicable to separate all the contents from the gut.

The rectum, about one inch within the anus, was streaked with red. There was none of the excessive inflammatory redness in the alimentary canal such as is often described and occasionally seen.

The urine contained albumin.

THE IDENTIFICATION OF THE ARSENIC.

By repeated mechanical separation 31 mgm. of white arsenic were obtained from the stomach and 32.8 mgm. from the intestines — almost exactly one grain in all. Microscopically, the particles were mostly irregular and broken; one in six or eight was distinctly crystalline. Compared with five available samples from different sources, it was evident that these particles might have had a common source with one of the samples, but were distinctly different from the other four. The samples were laboratory samples and stood in no relation to the case. The washed and dried particles sublimed without more than a trace of residue and with scarcely perceptible loss of weight.

Arsenic was also obtained from the gastric and intestinal contents by the general process of Fresenius and Von Babo as well as by Chittenden and Donaldson's modification of the method of Gautier. The last-mentioned process was also used for the separation of arsenic from the tissues — the liver, the kidneys, the urine, the brain, the muscle and the blood. The liver and the kidneys, though yielding different proportional quantities of arsenic, were in the same jar; the blood used was the small quantity of drainings in jar No 3, in which was the muscle, etc.; otherwise, there was no opportunity for diffusion after the autopsy.

For purposes of conclusive identification, the arsenic was converted into all of its familiar forms; the original oxide or the arsenic from the tissues giving the sublimed and crystalline oxide, the element reduced by carbon, the element reduced by hydrogen, the element alloyed with copper, the oxide sublimed from copper, the element with a zone dissolved with sodium hypochlorite, the chloride, the yellow sulphide from the chloride, the element, the oxide and the sulphide in the same reduction tube, copper arsenite, silver arsenite, silver arsenate.

In the whole investigation several hundred qualitative tests were made; the Marsh-Berzelius reduction was done 54 times; in all cases a portion of the liquid ready for the Marsh generator was tested by the method of Reinsch, with uniformly satisfactory results. Twenty-four exhibits were prepared.

THE QUANTITY OF ARSENIC.

The quantity stated as milligrammes of arsenious oxide was,

From the stomach mechanically	31.
From the intestine mechanically	32.8
In the stomach chemically	48.
In the intestine chemically	14.85
In the liver	28.14
In the kidneys	5.86
In the brain and cord	4.05
In the urine	.375
	165.075

Or 2.54 grains from 7.15 pounds of material.

In this no account is made of the stomach and intestines themselves, but only of their contents, nor of the arsenic distributed in blood, muscle and other tissues. It could therefore be said that there was more than 2.54 grains in the whole body, but that it was not in the same proportion in the remainder of the body as in the parts examined.

The distribution of the arsenic — the milligrammes of arsenious oxide in 100 grammes of material, omitting that mechanically separated — is as follows:

Stomach contents	30.
Intestine contents	9.3
Liver	2.8
Kidneys	1.7
Urine	.5
Brain and cord	.26
Blood	.20
Muscle	.06

MORE ARSENIC.

After a preliminary report showing arsenic had been rendered, it appeared that bismuth subnitrate and copper arsenite had been among the remedies employed during the last few days of Marsh's life. Samples out of the same bottles were therefore obtained from the attending physician.

The bismuth was not quite arsenic free; one gramme (15½ grains) gave in repeated trials less arsenic than that in a .01 mgm. comparison tube, or less than $\frac{1}{6480}$ of a grain. A person taking fourteen pounds of this bismuth would get less than the equivalent of a grain of arsenious oxide, probably not in an absorbable form and certainly not separable mechanically. The scarcely visible quantity from 15 grains was exhibited in comparison with the heavy deposits from fractions of the various organs.

Of the copper arsenite $\frac{1}{25}$ of a grain was left by the doctor; if all was taken — which was probably not the case — it would be the equivalent of $\frac{1}{50}$ of a grain of arsenious oxide. But there was more than 125 times as much in the body. All the possible arsenic from this source was exhibited in comparison with that from $\frac{1}{21}$ of the liver, which it very closely matched and agreed with.

In the course of the preparation for the trial it seemed best to examine a certain undertaker's fluid. This consisted of zinc chloride and sodium arsenate. Extending somewhat this examination, it appeared that some arsenical fluids contain a microscopical sediment of transparent prismatic crystals, readily distinguished, however, from white arsenic; others, unfortunately, contain in their sediment white arsenic. The fluid in question was not used, and was therefore not a factor in the case. This is consistent with the scanty amount of arsenic in solution in the stomach; if, however, the fluid had been used, and all the arsenic in the tissues thereby explained, there would have remained, pointing to another source than this particular fluid, the solid white arsenic of the stomach and intestines.

A bag of white rubber — a "fountain syringe" — was presented for examination upon the supposition that it might have been an instrument for the injection of poison. Washings with distilled water gave faint traces of arsenic; scrapings and washings with dilute acid gave more; and destruction of the fabric of the bag gave marked arsenical mirrors. Other bags were tried with similar results. This was reported as valueless evidence, and was never used. Certainly a part, and very likely the whole of the arsenic came from the zinc oxide or other materials incorporated with the rubber by the manufacturer.

THE ADMINISTRATION OF THE POISON.

Aside from the evidence of the administration of a white powder, there are no definite facts as to quantity, time or mode of administration. The doctor left no white powders; the bismuth was suspended in water, the other substances were in tablets or dissolved. So much white arsenic as was found in the alimentary canal was undoubtedly administered as white arsenic, either dry or mixed with food or drink. It is a fair inference that one dose was administered prior to the sickness beginning Friday night, but the duration of the case, the continued opportunity, and the presence of the solid particles in the stomach after death, five days later, are more consistent with at least one other later dose.

A GRAIN OF ARSENIC IS NOT A SMALL THING.

The magnitude of a grain of arsenic is not as appreciable to the world generally as to those who deal with such quantities. With reference either to its effects on the human system, or to the methods of its detection, it is immense. A level teaspoonful of arsenious oxide weighs about 170 grains; if this quantity were divided equally among 600 or 700 human beings only a select and peculiar few would escape violent sickness; if administered in skilfully divided doses, without remedial measures, to 170 adults, many would doubtless die. A common analytical balance in the ordinary course of its use would weigh $\frac{1}{648}$ of one of these grains (.1 mgm.), and a better but not uncommon balance, $\frac{1}{1296}$; if the grain were dissolved in 13 gallons of water and a teaspoonful of this liquid were put in a Marsh apparatus the resulting deposit (from .005 mgm., or $\frac{1}{12960}$ grain) is readily perceptible to the practised eye.

From such facts arises, too, the necessity for excessive and unremitting caution as to the chemicals used in such investigations. In the work described, after the rejection of two lots of "arsenic-free" zinc and one of acid, the materials were tested before each one of the fifty-four reductions.

DEATH FROM SANTONIN. — Death as the result of an overdose of santonin is a rare, possibly an unprecedented, occurrence, yet, according to the *Medical Press and Circular*, an inquest was rendered necessary a few days ago at Reading, England, on the body of a woman who had taken about two drachms of santonin for supposed worms, at the instance of an incautious friend. She became delirious and had "fits," which continued until she died. An autopsy revealed the fact that she was not suffering from worms, her abdominal symptoms being caused by an internal neoplasm.

IRIDECTOMY IN EXCLUDED AND OCCLUDED PUPIL DURING ACTIVE INFLAMMATION.[1]

BY EDWIN E. JACK, M.D.,

Assistant in Harvard Medical School; Ophthalmic Surgeon to Out-Patients, Boston City Hospital; Assistant Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

As far as I have observed, iridectomy, in cases of iritis with blocked pupil, is done only when the eye has become free from inflammation, the object being usually to make an artificial pupil for visual purposes; sometimes, though more rarely, in order to prevent further attacks of iritis. We all know the difficulty and inefficiency of medical treatment of iritis at this stage. Mydriatics do harm rather than good as their desired action is no longer possible and we wait patiently, relieving the pain, till the attack subsides. During this time sight is likely to be much impaired or lost. Pain and lost vision, are, however, not the only bad features of these cases. The longer the inflammation continues the less likely is subsequent operation for artificial pupil to be successful on account of the secondary changes which go on in and around the iris. These changes briefly stated are — atrophy of the iris tissue, occluded pupil, opacity of the lens, exudation behind the iris and around the lens and ciliary bodies, which later may go on to atrophy of the globe. My own experience in operating for artificial pupil in such cases is not an encouraging one. I have removed pieces of atrophied iris apparently entire but no vision has resulted and investigation has showed the pigment layer still clinging to the lens capsule. At other times the tissue has been so friable that only small shreds could be picked away, leaving a very unsatisfactory opening.

Some time ago a boy with a violent attack of iritis came under my care at the infirmary. The iris was much discolored, swollen and bombé, pain was intense. It occurred to me that there was nothing to lose and very likely much to gain by doing an immediate iridectomy. This was done under ether, the piece of iris coming out entire. Pain ceased very soon after the operation, and though the opening partially filled up again the iritis quickly subsided.

Since that time I have operated on two other cases. One of these was a lady, aged forty, who for many years had had attacks of iritis with severe pain. I was called during one of these attacks by her physician, with the idea of doing enucleation, as she was almost worn out with pain and had finally decided upon this radical step. The condition of the eye was that commonly seen in cases of blocked pupil. Iridectomy was advised and done without ether, the pain of the operation being severe but not much more so than what she had borne for some time. The relief was immediate and there was no return of trouble up to the time of her death, a year and a half later.

The other case was a man, aged fifty-seven, with incipient phthisis and with a history of repeated attacks of iritis for fifteen years. Both eyes showed the evidence of these attacks by numerous posterior synechiæ. The patient was having a fresh attack in o. d. with moderate pain; it had been going on for a month, with treatment, before I saw him. During the first two weeks of my observation he was fairly comfortable, but at the end of that time the pupil became excluded and very soon occluded, the iris bombé and pain intense, completely prostrating him. Vision was reduced to the perception of moving objects at two or three feet. Iridectomy was done upward without ether. The iris immediately returned to its normal plane, the pain, though temporarily increased, requiring a subcutaneous injection of morphia, soon stopped. The opening did not fill up, allowing a vision of 0.1 some weeks later, which later still was certainly better, though no accurate test was made. Had I foreseen the good visual result in this case I would have done the iridectomy downward and not upward.

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[1] Read at the March meeting of the New England Ophthalmological Society.

Of course three cases cannot serve as a definite guide for all similar ones; yet I think certain inferences can justly be drawn. The procedure is justifiable if only for the relief of pain, and one may reasonably expect it will do that. It will also, probably in most cases, cause the rapid improvement of the iritis and at the same time prevent those secondary changes which are in some cases destructive and which in others are a barrier to future successful operative measures. It is possible also that the operation may result in an immediate satisfactory artificial pupil.

A CASE OF SUB-HYALOID HEMORRHAGE.

The patient, a lady, aged forty, had never had trouble with her eyes in any way. A week before her visit to me the sight of the right eye became suddenly partially obscured and the next morning there was a practically total loss of central vision. In the macular region was a very large hemorrhage about three and a half to four discs diameter in height and breadth. The upper boundary was straight and horizontal, the lateral and lower boundaries were a curve, the whole like a flattened drop. The color of the patch around the curved border, especially below, was much darker than elsewhere, gradually getting lighter toward the centre and the upper boundary, showing evidently the settling of the blood to the bottom of the affected area. Just outside the border was a narrow rim of lighter red, and below were a few small striated retinal hemorrhages in the course of a vessel. At a point in the large hemorrhage corresponding with the macular was a glistening spot — almost the size of the usual macular reflex. No retinal vessels could be traced within the hemorrhage.

The patient was in good health, there was no renal or organic heart trouble. She had had slight uterine trouble, with occasional treatment, for twelve years, but it had never caused her serious inconvenience. Her only two children had died soon after birth of "heart trouble." Within the last three years she had menstruated but three or four times, the last being a day or two before the onset of the eye trouble. The flow was scanty, and unattended with any local or general disturbance; and, indeed, at no time had she had any symptoms attributable to the menopause. However, on account of this coincidence and the absence of other apparent cause, the menopause seemed the best explanation of the hemorrhage. Three weeks later the V. O. D. = $\frac{10}{200}$, the patch was less red, and the upper edge had a frayed appearance. Five weeks after this V. O. D. = 0.3 —, the blood had all disappeared, and the area looked normal, except that above the macula was a retinal disturbance in the form of a faint grayish-white band extending upward, the lower part being made up of fine round white dots. A little over a year later, the patient not being seen again till then, V. O. D. = 1 —, nothing to be seen in fundus except a very few faint dark-colored dots which were grouped together.

The source of these hemorrhages, arterial or venous, has been disputed, the majority being in favor of a venous origin. The situation, too, though now accepted as sub-hyaloid, has been in the past thought to be choroidal or within the retinal layers. In the case reported the tendency of the blood to fall to the bottom, the complete covering of the vessels and the ultimate return to normal fundus and normal vision would seem to definitely point to a sub-hyaloid situation. In a case reported by J. Herbert Fisher in which a post-mortem was made, the internal limiting membrane as well as the hyaloid membrane had been stripped off.

For the many interesting points connected with this subject,— origin, situation, cause, etc., — I would refer to Fisher's paper in the "Royal London Ophthalmic Hospital Reports," Vol. XIV, Part II, which contain numerous references; also an article by W. P. Holmes Spicer, same reports, Vol. XIII, Part III.

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Clinical Department.

INTRAVENOUS INFUSION IN A CASE OF UREMIA.

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By the kindness of Dr. E. H. Bradford I am enabled to report the following case:

Wm. M., age six years, entered the Children's Hospital December 7, 1897. About November 1st the boy had an attack of what was thought to be appendicitis. This subsided, but ten days later he was taken ill with lobar pneumonia. After recovery was sent to the Children's Hospital for treatment of probable Pott's Disease with iliac abscess. On entrance there was a mass in the right iliac fossa, not tender; some stiffness of lumbar spine and spasm of lumbar muscles; no kyphosis. After a few days' observation a diagnosis of appendicitis was made, and this was confirmed by operation on December 22d by Dr. H. L. Burrell. The remains of an old appendicitis were found — pus adhesions, etc. Appendix could not be removed, and abscess cavity was drained.

After the operation the patient sank very rapidly, on account of frequent vomiting and inability to retain treatment either by mouth or rectum.

On the fifth day commenced to improve and gained steadily until January 15th. On that date complained of severe abdominal pain, a few hours later of lumbar pain. At 3 P. M. passed a few cubic centimetres of bloody urine. Examination showed much normal blood, a few small round cells and leucocytes, an occasional hyaline and granular cast. Vomited several times in the evening. Given diuretics and hot packs.

On the 16th passed 65 c. c. of urine; on the 17th, 65 c. c; on the 18th, 150 c. c.; on the 19th, 40 c. c.; on the 20th, 10 c. c.

Examination of the urine practically the same as on 15th. Boy vomited on an average of once every ten minutes, night and day. Various means were tried to stop the vomiting, but without effect. Enemata of peptonized milk and stimulants given every four hours, but patient steadily lost ground. Hot packs were freely used.

On the evening of the 20th the patient was in a very poor condition. Delirious and extremely restless; pulse weak; temperature 103°. At midnight seemed much weaker. At 2.30 A. M. the writer was called, and found the boy in a deep coma; limbs lax, respiration somewhat irregular, pulse slow but of good volume. As a last resort, the right median basilic vein was opened, and about ten ounces of blood allowed to escape. Twenty ounces of normal salt solution was then put into the same vein. In an hour the boy was conscious and rational. Nine hours afterwards the patient passed 100 c. c. of urine, and in the next five hours, 670 c. c. The next day passed 1,730 c. c., and the next 2,240 c. c. Condition showed an immediate improvement. His mind was clear; color and pulse good; and there was no more vomiting. On the evening of the 20th infusions of salt solution under the skin of the axillary folds were given, but without any apparent effect.

The ordinary therapeutic measures were given a faithful trial — that is, hot packs, digitalis, squills, etc. No tumor was ever felt in the abdomen. The bladder was usually empty (to percussion) and the kidneys could not be felt.

Condition of urine steadily improved, and on February 1st and 2d was negative.

The patient made a good convalescence, interrupted by an attack of varicella on February 8th, and was discharged well on March 8, 1898.

The case is reported as being of interest in regard to venesection and infusions of salt solution in certain cases of uremia where other therapeutic measures have been used without avail.

New Instruments.

A SEPARABLE TUBE FOR PACKING GAUZE INTO ABDOMINAL AND OTHER DEEP SINUSES.[1]

BY W. A. MORRISON, M.D., EAST BOSTON.

In the treatment of certain cases of abdominal section, especially those primarily purulent, where the use of gauze drainage is imperative, considerable difficulty is frequently experienced in properly applying the gauze to the bottom of the cavity, especially at the second and subsequent dressings, which are done without the use of an anesthetic.

This difficulty is due to a variety of causes, chief among them being the tortuous shape of the sinus, which renders it a matter of extreme difficulty to properly apply the gauze by means of ordinary dressing-forceps, and also to a relatively small external opening, making manipulation difficult; lastly, the sensitiveness of soft parts rendering the use of any force a matter of extreme discomfort to patient. The first of these difficulties is increased as healing of the wound progresses.

A most frequent condition occurring in the abdominal region is the formation of an abscess resulting from appendicitis, where constant drainage must be kept up until healing occurs. Here a sinus often burrows deeply in the pelvic region, and the proper application of an effective gauze drainage is frequently a matter of impossibility.

As a result of this improper drainage, an abscess frequently re-forms, rendering a second operation necessary and exposing the patient to its attending dangers.

A similar condition is present for the operation of the removal of pus-tubes, where complete asepsis cannot be maintained, and also in certain classes of deep abscesses of hip which have burrowed some distance from original point of infection.

Some months ago, after operating on a case of appendicitis in a boy of fourteen, these difficulties were experienced in a marked degree, and an attempt to obviate them resulted in devising an instrument which has, in several cases, produced admirable results. The instrument consists of a series of tubes of various sizes and in two shapes, straight and slightly curved at the point; each of these tubes is divided in the centre into two parts somewhat similar to a bivalve speculum, and with perforations at the extremity through which irrigation may be used if necessary. These tubes are closed at one end when the two parts are placed together, rendering the lower end of the tube smooth and rounded, thus preventing any injury to the tissues through which it is pressed. To prevent any lateral motion, there is a groove on one side into which fits a slight projection from the other.

It has been found desirable, in a limited number of cases, to have the tube slightly curved in order to more readily enter a tortuous passage. These tubes are made in three sizes, having an internal diameter of one inch, a half-inch, and a quarter-inch each.

In applying this instrument to the average sinus, it is passed to the bottom of the cavity, and through it the gauze is packed. When a sufficient quantity has been inserted, the gauze is held in place by moderate pressure, and each half of the tube which has been pressed apart is easily removed.

The tubes are made of brass and nickel-plated, and can be rendered aseptic by boiling in the usual manner.

By means of this instrument, perfect drainage of cases of this kind is established in a simple and effective manner.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

REGULAR Meeting, Thursday, February 3, 1898, DR. H. L. BURRELL in the chair.

DR. W. A. MORRISON presented a

SEPARABLE TUBE FOR PACKING GAUZE INTO THE ABDOMINAL AND OTHER DEEP SINUSES.[1]

DR. DUDLEY P. ALLEN, of Cleveland, O., read a paper entitled,

HYSTERECTOMY FOR THE REMOVAL OF LARGE UTERINE MYOMATA, BY THE COMBINED VAGINAL AND ABDOMINAL METHOD.[2]

DR. JOHN HOMANS: I am sure we are all of us under obligation to Dr. Allen for his very clear description of the operation of Doyen. I would say that the

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[1] Shown at the meeting of the Suffolk District Medical Society, February 3, 1898.

[1] See page 492 of the Journal.

[2] See page 485 of the Journal.

French surgeons are ahead of us in vaginal surgery. They are far more bold, and they have a great deal of right on their side in saying that the vaginal operation can often be done for removing tubes or for extra-uterine pregnancy or for removing small ovarian tumors, and is attended with much less shock and much less danger of sepsis, as a rule, than the abdominal method. In hysterectomy for removing a fibroid, I almost always do the combined vaginal and abdominal operation. I generally begin by dragging forward the cervix, after the vagina has been thoroughly cleaned, the uterus thoroughly curetted and plugged with gauze, and sewed up, if you please, and the cervical canal burnt with the cautery. Each surgeon will use the method he likes best to render the vagina and interior of the uterus aseptic. I think the best way is to scrub thoroughly with ether soap, then with a bichloride solution, and then curette the interior of the uterus and paint it with pure carbolic acid or cauterize it. Then I make a circular incision around the cervix with the actual cautery. There is no bleeding. The upper vaginal flap is turned up with less loss of blood than when the knife is used. There are times when you cannot get the cervix down. I had one last week where the cervix was obliterated, nothing but a dimple in the mouth of the uterus up under the pubes, and it could not be got down. I do not think a man had better make up his mind always to make complete removal of the uterus, but to do what he thinks best in each case. I generally remove the uterus completely; but sometimes I leave, as I always did formerly, the cervix. Now it seems to me the great advantage of Doyen's[2] operation is this pair of forceps to seize the vaginal vault at the point on the cervix about where the peritoneum leaves the uterus to descend over Douglas's space onto the rectum. Then when you get the abdominal cavity opened, you feel down behind the uterus and an assistant pushes up the tip of the forceps, and you cut intelligently at once, without any embarrassment, and save a great deal of time. There is a surgeon in Australia who has an ingenious instrument I have often thought of imitating, with which he seizes the cervix with a pair of forceps which have a ring that slides over the cervix on which he cuts right round the neck of the uterus. It always seemed to me that this was a very ingenious device.

At times, when a fibroid has grown in the posterior part of the uterus and is firmly bound down by the peritoneum all round, it is necessary to divide the peritoneum, and it is impossible to drag the uterus forward upon the pubes until you have divided the fold of peritoneum called the broad ligament, or have enucleated the uterus, more or less behind. The method of Doyen of dragging up the cervix in the posterior part of the vagina and then trusting to an assistant's hand to hold the vessels, as one always used to do in amputation at the shoulder-joint, is something that I have not as yet tried.

I have used a pair of forceps in the manner suggested by Dr. Allen, to mark the point where I wished to open the vagina, with, I think, a great shortening of the time and great relief in deciding at once where to divide the vaginal wall. On the grounds of asepsis it would seem as if the vaginal part of the operation had better be done after the abdominal, but it is, I think, rather more awkward. If you do the vaginal part first, you have your lines marked out through the mucous membrane of the vagina, even if you do not open the peritoneal cavity at first, and I think it would be rather more embarrassing to do the vaginal part after the abdominal. I generally am able to secure the uterine arteries, either through the vagina when I am opening it, or soon after I have opened the abdominal cavity, and have pushed down the peritoneum, separating the bladder from the uterus. I do not think we are planning this evening to go into the matter of the reasons for removing fibroids or the different methods of doing so.

This method of Doyen's I think an admirable one. I should think it would not be applicable to all cases, but to the majority. In regard to the total removal of the uterus; if you have got down to a very small neck and have everything tied, I should not do it, but should cut off the uterus behind this button of a neck (perhaps leaving a neck three or four times as thick as an ordinary finger-ring), and should thoroughly disinfect the uterine canal with the actual cautery. Now in this way we leave a complete pelvic floor without any division of the vaginal vault. When the vaginal vault is divided and complete removal of the uterus has been done, I always sew up the roof of the vagina without regard to drainage unless the operation has been septic; I do not see why you should not sew up the pelvic peritoneum as readily as you sew up the peritoneum between the umbilicus and the pubes; at any rate, I always sew it up and generally with silk. If I could trust catgut I would rather use it, because most of the patients after hysterectomy for fibroids, whether you do it one way or another, have a vaginal discharge — some of them for a year or more; and occasionally one discharges a silk ligature. I think that catgut, if you could be sure it was aseptic, would be better material to use.

I felt so strongly about this Doyen operation that this summer I said to my assistant, Dr. Pease, that either he or I must go over to France and see Doyen operate. He went, and was much pleased with the rapidity and skill with which the operation was performed.

Dr. A. T. Cabot said that he had been much interested in the account of the combined operation, which Dr. Allen had described and discussed so fully that there was little to add. He said that he had himself not employed the operation for the removal of fibroids, but had used it in cases of cancer of the uterus with very great satisfaction, the advantage there being very great in that, by doing the vaginal part of the operation first, it was possible to thoroughly circumscribe the disease below, after which it could be approached from above with much greater hope of a thorough removal.

He said that in after-treatment he had sometimes sewed up the vault of the vagina and then joined the peritoneum above it. In other cases he had closed the peritoneum, leaving the vault of the vagina open, with gauze drainage established through it.

Dr. Cabot said that the operation for fibroids which he used by preference was the supra-vaginal amputation, and that in this operation he thoroughly cauterized the cervical canal, not only with the idea of destroying any septic material that might be there, but also with the idea of enlarging it so that any fluid which collected in the stump below the stitches might escape readily in the direction of the vagina rather than force its way out through the stitches into the abdominal cavity above.

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[2] Dr. Allen tells me that this manoeuvre is his and not Doyen's.

He thought that the experience of Dr. Homans with the subsequent discharge of silk ligatures should lead us to make every possible effort to use animal sutures and ligatures. He said that he had used chromacized catgut, and had as yet had no ill results following it.

Dr. Elliot: In discussing the modern hysterectomy operations we come down to pretty fine points, because all the operations claim and have great freedom from hemorrhage and great freedom from sepsis; in fact, these three different operations — vaginal hysterectomy, the combined method and supravaginal hysterectomy — are wonderfully perfected operations. The mortality in all three is down at least to five per cent., so that the differences are only slight; one is a shade better than the other in certain cases. The combined method, I think, has great advantages in cases of cancer of the uterus. As Dr. Cabot says, you can by this method get outside the disease with certainty *per vaginam*, and then take out the glands and tubes from above. For fibroids, my own idea, both from a theoretical and a practical point of view, is this, that what you want to do is to get out the fibroid; you don't want to take out anything else. If the cervix is of any use we want to leave it; and, as Dr. Allen has said, the American surgeons claim that the cervix supports the bladder and leaves the vagina intact. It certainly does. Now I have almost always done the supravaginal amputation for fibroids, and I am a very firm believer that that is the best operation, but I have listened with great interest to learn if any advantage could be gained by taking out the cervix. I have failed to be persuaded that there are any advantages in taking out the cervix, and even after Dr. Allen's exhaustive paper I feel the same way. He claims that by the combined method he can shorten the time of the operation. Now the operation of hysterectomy is so perfected that there is no anxiety about time. Vaginal hysterectomists claim there is no shock; and there is none. In supravaginal amputation there is almost never any shock. There is no bleeding. The gauze sponges are scarcely wet with blood. Now, if we can get equally good results without opening the vagina, why open the vagina? Also, from the aseptic point of view, I think it is an advantage not to open the vagina. In doing the combined method for cancer I have gone so far as to dissect out the cervix *per vaginam* up to the peritoneal cavity, pack that incision with sterile gauze and wait until the next day before doing the abdominal part. In this way I believe I can carry out a more perfect antisepsis. There is more danger of sepsis when we work near the bladder and rectum; in spite of the antiseptics, there is more chance of contamination than working from above. All the fibroids I have seen I have been able to get out by the supravaginal amputation. I think I have taken out the neck once or twice, but very rarely; and very rarely have I seen any shock or hemorrhage, and only once sepsis, which had a definite cause in a hospital case.

As to the cautery, I object to using the cautery in any operation unless it is shown to be of great advantage, for the reason that it leaves a slough which is non-living tissue, which is easily attacked by germs; and they are always present in spite of the best antiseptic precautions. I prefer when doing the combined method to sew up the vagina at once. This shuts off the vagina and at the same time stops the hemorrhage, which Dr. Allen does with the cautery. I have had the difficulty that Dr. Homans speaks of. I do not like to sew with catgut, because there are so many lively little vessels around the vaginal vault, and the silk I have sewed up with I think has always or nearly always come out after several months. I suspect that probably at some point the stitch goes into the vaginal vault, or there is a crack which allows the vaginal secretion to reach the stitch.

Dr. E. A. Pease: Dr. Allen has so well described Doyen's method, I think very little can be added. The height at which Doyen puts the patient for vaginal hysterectomy was very interesting to me. The body is in the ordinary lithotomy position but is so raised as a whole that the vagina is directly opposite the operator's eyes when he is standing. In this way he gets a much better view of things than in our way of having the patient a foot or two below the eyes. Doyen's table is raised and lowered very quickly by means of a pedal at the base. He is a very rapid operator; twice I saw him do a vaginal hysterectomy for small fibroids in ten minutes. He is not so careful about the bleeding vessels as is Richelot, of whom Dr. Allen has just spoken. Richelot's method of abdominal hysterectomy is really safer for the patient than is Doyen's, so far as bleeding is concerned; for Richelot, instead of trusting the broad ligament to the hands of an assistant, clamps and ties each vessel; this latter procedure makes the operation a much longer one, however. Fibroids that we would think could be done only abdominally, Segond and other French surgeons would take out vaginally. I remember one particularly which had several lobes reaching above the umbilicus, and even this Segond removed from below, although considerable time was taken. He was very much helped by a long corkscrew which he had made for the purpose of twisting into fibroids and pulling them down vaginally as we pull them up abdominally with a similar instrument. In regard to the matter of leaving a part of the cervix, I think the question of malignancy must be taken into consideration, because in the first thirty cases I helped Dr. Homans do intra-peritoneally, two had cancers not known of beforehand, one in the body and the other in the cervix. If the person is young the cervix might often be left, whereas if the person is in the neighborhood of fifty it would better be removed, as a rule.

Dr. Homans: In regard to the discharge of silk long after operation. I have never but once removed silk from the vagina which I had put in the abdomen at the time of the operation; but I have thought that the continuous discharges of pus or mucus for months and years was probably caused by the presence of ligatures.

Dr. Cushing: There are some observations which I take the liberty of making on this question. In the first place, in regard to the operation being particularly that of Doyen. I don't know how long he has been doing it precisely; but as far as opening the vaginal vault, bringing the uterus forward and separating the vagina and broad ligaments from the cervix as this is pulled up from the inside, I think that is Martin's operation, and I am pretty sure I have a paper at home in which he described and figured that before Doyen was doing it. Possibly, however, he may have taken it from Doyen. As far as having something in the vagina to fix the part, that is Eastman's; Eastman invented a staff with a ring, and after that it was taken up by Chrobak, who perfected the operation along in 1891, before the total extirpation was much developed in this country except by Eastman. I do not think we ought to be too much under the glamor of French pelvic or abdominal surgery. Three years ago I took the trouble to go over to see the wonderful developments — and certainly there were wonderful developments — in vaginal hysterectomy, but I got a very strong impression that the reason they have developed vaginal hysterectomy so much is because they do not know how to do abdominal hysterectomy. At this time Richelot was operating by opening the vagina from above in front and then putting on clamps from below, doing practically Mary Dixon Jones's operation, which we had abandoned in this country, and when I described and figured on the board as well as I could the way it was done in this country by tying the arteries from above and removing the uterus, he was almost incredulous, but politely said he would try it, and I see he is doing it now. I tried to persuade Segond to use our American methods, and told him how Polk, Kelly and others were doing hysterectomy. He gravely said he would like to see it, and on my invitation he came over and was captivated by the American method and went back and published a paper on it. Jacobs, of Brussels, came over a year previously and told me he was completely astounded by the surgery he saw here and was going to adopt the American method of abdominal hysterectomy.

The operation of Doyen, as described, has the disadvantage, that, although it is beautiful to describe and a very showy and quick operation in the easy cases where there are no adhesions and where everything is clean, yet in the case where there is a myoma partly developed subperitoneally, where the myoma plugs the pelvic cavity so that it comes out like a cork out of a bottle, or in a case of subperitoneal myoma, or myoma complicated by salpingitis and adhesions, the operation cannot be done in that way. All the methods of hysterectomy which aim at excessive speed in removing the uterus do not shorten the operation finally. It takes just so long to tie all the vessels, and in my judgment it is better to tie the vessels as you go along going down — tie the ovarian, and then the uterine arteries, as you get to them, and not opening the vaginal canal until the last. I certainly never saw the assistant whom I should like to leave with the two hands holding the patient's uterine and ovarian arteries while I had removed the uterus. I don't think it is good surgery, when you can ligate the arteries, to put on clamps: something might happen. I think those who have done the amputation at the shoulder-joint with the vessels held by assistants wished they had them held in a different way. The uterus can be removed in a very short time; I have seen Kelly do it in four minutes, but it takes the best part of an hour to tie the vessels, sew up the vaginal vault or the stump of the uterus and put the patient to bed. In regard to cauterizing from the vagina and beginning that way, I also have my doubts. It is to be observed that the combined method was the way people began cautiously to feel their way in these cases, and Martin, as far back as 1887, described beginning below and finishing above, or beginning above and packing some gauze in the pelvis, closing the abdomen and then pulling the cervix down and completing from below. If you cauterize, you certainly have a place you cannot conveniently sew together. Beginning with Chrobak's method of supravaginal amputation at the level of the internal os and cauterizing the cervical canal, I did some twelve cases in 1891 or 1892, all of which recovered. Then, taking up the method of total hysterectomy, I made all my hysterectomies total for a while, but finally I saw no good in removing the cervix if it was healthy. By leaving it you save time; it is a quicker operation and preferable, not merely for saving the vault of the pelvis, but because the cervix has certain very well-defined physiological uses and properties which I will not go further into here. It is worth saving, as careful questioning of those who have it or do not will prove [referring to sexual feeling during coitus]. If it is to be removed, however, it certainly is not an advantage to have a place which must slough. There is very little trouble about hemorrhage. There ought to be no trouble if the vessels are fastened one after another; after you have got your broad ligament divided the cervix will come up so that you can get at it, and then you cut the uterus out as the last step. Everything is tied, and you proceed to sew the two surfaces of the vagina together. I never have any trouble with catgut; have never used anything in ten years in the abdominal cavity but catgut, unless very fine silk in suturing the intestine. I never buy it; I always prepare it. It seems to me that the burning to save possible hemorrhage is unnecessary. You know where the hemorrhage must come from, only from the lower branches of the artery on the side below the uterine artery, which can be perfectly well picked up by forceps, and then you have nothing but the posterior vaginal artery, which can be fastened on the peritoneum. If you sew that whole opening in the vagina together there is no hemorrhage; therefore, I fail to see why this method of beginning with the cautery in the vagina should be a method particularly in advance of what we already have, and I think there are some disadvantages in working in the vagina. I never should want to do anything in the vagina and then go into the abdomen. As to the curetting, that can be left to an assistant; but when it comes to having him do so much more, especially picking up the uterine arteries, it is rather more than an assistant should be expected to do.

Dr. Elliot: I omitted one important part of my discourse, and that was the treatment of the uterine canal. I began by boring out the cervix with the actual cautery and draining it into the vagina. Later I discovered that the canal is usually sterile, and I now use only a little pure carbolic acid to coagulate the secretion, so it will not pour into the abdominal wound; then the canal is sewed over. So far as the canal of a healthy cervix is concerned, I do not see why we should take that out expecting cancer any more than we take any other part of the body expecting cancer.

Dr. Homans: I think the cases Dr. Pease referred to were cases of cancer in the middle of fibroid tumors discovered by Dr. Whitney on examination. Dr. Whitney reported that he found that two ordinary-looking fibroids when opened were cancerous in their interiors.

Dr. Gay; I should like to ask Dr. Homans, or those gentlemen who have been doing this operation of removing the uterus entirely and also of leaving the cervix, as to what the late effects are; if there is any difference five or ten years afterwards whether the cervix was left as a cap to the vagina or not.

Dr. Homans: I could not answer that question. I have never had any complaints from the patients either way. The mortality of removing the cervix has been very small; I should say not more than two or three per cent.; and the mortality the other way has been very small. I have not seen any of the nervous effects from removing the uterus; and so far as the functions of the rectum and bladder are concerned, I have had no complaints. I have several times had people come in to see me a considerable time after a fibroid has been removed and say this, "I think it is a pleasure to have had a fibroid, and to have had it removed, so to know how much better one feels after it is out."

Dr. Walker: I asked Segond and Jacobs about that point of removal of the cervix. Segond said he had had only one case of hernia, and Jacobs made a similar remark, but those cases I think had not gone more than five years after operation.

Dr. Elliot: I find after total extirpation the vagina is usually much shorter and more resistant than normal. After supra-vaginal hysterectomy I have made a bimanual examination, and could not tell whether anything had been done. I felt something like a very small uterus. The feeling around the vault and the lateral cul-de-sac is softer and more natural and the vagina is longer than after total hysterectomy.

Dr. Cushing: I have questioned a large number of women, and I have never heard of any of the bad nervous symptoms Emmet and others have described. The women get in perfect health; but if they are married women, they are better off if the cervix is left.

Dr. Allen: I fully appreciate the fact that I am speaking to surgeons of much larger experience than myself and those more entitled to an opinion; but so so far as I have been able to understand none of them have performed the operation in the manner described. Perhaps it is not amiss, therefore, for me to suggest that the operation may have possibilities for one who has not tried it that he does not suspect. I think our opinions are largely based upon personal experience. A man may be convinced of the correctness of his conclusions, and later may change them. I was much impressed by an experience which I had eight or nine years ago. Dr. Bull, the President of the New York Academy of Medicine, asked me to read a paper before that body. I discussed the subject of abdominal drainage, taking the position that abdominal drainage was largely overdone, and that it would be much wiser, instead of draining all cases, to do a more perfect operation, more thoroughly control the hemorrhage, and thus render drainage unnecessary. Many of the prominent laparotomists of New York City were present, and every man on the floor disagreed with me, saying his success with drainage was such that he did not think he could give it up. I simply remarked later that I suspected they would change their opinion, and I feel, gentlemen, if some of you try the Doyen operation you will find it has advantages in certain cases. I did not say it was a universal method. I said it had many advantages, and was a method well worth knowing and worthy of application under certain circumstances. In the first place, Dr. Homans spoke of Doyen using the vaginal forceps to mark the vaginal vault at the point of division. I do not understand that this is a part of the Doyen procedure. At all events, if he uses it I have found no mention of it in his writings. The method is, so far as I know, original with myself. Various instruments have been utilized to push the vault of the vagina upward. These have not, however, been clamped on to the vault of the vagina, and have the disadvantage that they do not mark it with absolute certainty. My method is to secure the forceps at the vault of the vagina, at the point of division. There is then no chance of mistaking the point at which one is to cut through the cul-de-sac into the vault of the vagina.

So far as closing the floor of the pelvis after operation is concerned, my remark was that it seemed wise to close it in most cases. There are cases in which there is a good deal of pressure in the pelvis, and others in which there are extensive adhesions. One thing I had in mind in recommending drainage in some cases was a remark Dr. Homans made in Washington, namely, that in one of his cases he had had an abscess which by good fortune discharged itself through the cervical canal. Drainage affords a safe method of avoiding the dangers of sepsis. If the cervix be removed it is a very simple matter to insert a gauze drain should sepsis be feared, or if the pelvic floor has been closed; should sepsis result from catgut, as has been suggested, or from other cause, it is a very easy matter to open the vault of the vagina and secure good drainage.

Dr. Cabot remarked that the hands of the assistant might be in the way in operating in the way I suggested. My experience has been that the hands of the assistants are not so much in the way as the tumor itself. If by a few cuts of the scissors the tumor be out of the way there is abundant room for the hands of the assistant. The method is not, as suggested by Dr. Cushing, to have one assistant hold both broad ligaments. There are two assistants, one on either side.

Dr. Elliot and others have spoken of the cervix supporting the bladder. Now I presume the cervix has a function, but when the whole uterus is cut away I question how great that function is. The results I have seen after the removal of the cervix have been satisfactory so far as both the pelvic floor and the vault of the vagina were concerned, and I have not been able to see that the cervix itself was of great benefit to the vault of the vagina after the uterus has been removed.

Contamination of the abdomen from the vagina is a thing hardly to be considered, nor is there danger lest the operator's hands become septic. One can do all I suggest during the vaginal portion of the operation and touch nothing but the ends of his instruments. The retractors hold the vagina widely open. All the operator does is with a pair of forceps to seize the cervix, draw it down, and then with a few sweeps of the cautery divide the vaginal vault close about the cervix.

So far as sloughing from the cautery is concerned, I have used the cautery a great deal in various vaginal operations and have not seen sloughing. If one uses a low degree of heat and burns slowly, he gets a slough; but if one uses a high degree of heat and burns quickly, the cautery controls the hemorrhage and does not cook the tissues and causes no perceptible slough. Although the hemorrhage comes chiefly from the ovarian and uterine arteries, my observation is that there is sometimes considerable bleeding from the divided tissues of the vagina. If this be controlled before the abdomen is opened no time is lost later, and it seems to me of value to control this bleeding before we open the abdomen.

I have been quite interested in the remarks with reference to Segond. Segond went back from America to Paris and discussed what he called the American operation, but Segond has recently sent me a reprint which I have read with care. He has adopted the American operation in so far as the division of the broad ligament and ligature of the ovarian and uterine arteries are the first step of his operation, but here the comparison ceases. He enucleates the cervix, not from behind as Doyen, but by cutting down from the broad ligament into the vagina from the side, so that virtually he has gone back to the enucleation of the cervix, doing it from the side rather than from behind or in front.

In regard to trusting an assistant to hold the broad ligament, I think that is an imaginary objection. I trust my assistants to hold the broad ligament, and they hold it, and I have had no trouble.

In closing, I do not wish to be understood to say that this is an exclusive method, more desirable than all methods under all circumstances, nor to say that other operations are not of the very highest value; but I do believe that it is well to understand all methods and to turn to them when they are of advantage. Opening the vault of the vagina from below saves time, and when time is a consideration, has a very distinct value. By the Doyen method one can operate with greater rapidity than with any other with which I am acquainted. Time is certainly a matter of very great consideration in certain cases. A short time ago a woman of advanced age, with a badly diseased heart and an immense tumor — a most unfavorable case for operation — presented herself. No one would question that in a case of this sort it was of very great advantage to save time. The operation was not timed, but I venture to say that from the opening of the abdomen until the uterus was laid upon the table the time did not exceed five minutes. I do not believe by most methods the uterus could be removed so speedily. Certainly the combined operation has striking advantages, quite enough to merit for it careful consideration.

ASSOCIATION OF AMERICAN PHYSICIANS.

Thirteenth Annual Meeting, Washington, May 3, 4 and 5, 1898.

(Concluded from No. 20, p. 478.)

SECOND DAY. — MORNING SESSION.

Dr. Geo. M. Sternberg, of Washington, read a paper on the

BACILLUS ICTEROIDES (SANARELLI) AND BACILLUS X (STERNBERG).

Dr. Sternberg reviewed the work done in yellow fever by both Sanarelli and himself, and showed that the former in his recently published reports had in numerous instances misquoted him, and thus in his conclusions done him an injustice. He was inclined to believe that the two organisms in question were probably identical, and that it cannot yet be said definitely that either is the cause of yellow fever. He referred to the very slight differences that appear to exist between these organisms to-day, and explained them with the statement that the bacillus *X* originally bore a stronger resemblance to the bacillus icteroides, and that the present changes in the former might be due to the fact that it had for so many years been grown in an artificial medium. He stated that experiments are now being conducted in his laboratory to determine the identity of the organisms and also to determine the value of Sanarelli's aglutination tests. The results of this work will soon be published.

Dr. A. C. Abbott stated that he personally believed that Sternberg's and Sanarelli's bacilli were identical.

Dr. William Osler objected to the experiments upon men as brought forward so prominently in Sanarelli's paper, stating that to deliberately inject a poison of known high degree of virulency into a human being, unless you have that man's sanction, is criminal.

Dr. Theobald Smith, of Boston, presented an article on

COMPARATIVE STUDIES OF BOVINE TUBERCLE BACILLI AND OF HUMAN (SPUTUM).

Dr. Smith gave a *résumé* of studies upon fever cultures of tubercle bacilli from human sputum and of five cultures from cattle, reported his experiments in full and drew the following conclusions:

(1) The sputum cultures, with one exception, resembled one another closely in morphological, biological and pathogenic characters. The same is true of the bovine cultures, the differences between these two groups being sufficiently well marked to justify the establishment of two varieties. The coati cultures resemble the human, the cat and the swine culture the bovine variety, and the horse culture stood between the two in pathogenic power.

(2) The differences in the morphological characters of the bovine and the sputum variety are not sufficiently constant to warrant their use in diagnosis.

(3) The differences between bovine and sputum bacilli will probably enable us to determine more definitely the agency of cow's milk in the tuberculosis of infancy and childhood.

(4) Sputum bacilli are presumably not capable of infecting cattle spontaneously.

Dr. Simon Flexner, of Baltimore, read a paper on

PSEUDO-TUBERCULOSIS HOMINIS STREPTOTRICHA.

Dr. Flexner reported a case which presented the symptoms and physical signs of pulmonary and peritoneal tuberculosis. No sputum was obtained. The autopsy exhibited extensive, consolidated foci in the lungs, which resembled, in gross appearances, areas of caseous pneumonia, and nodules in the peritoneal cavity which were indistinguishable from true tuberculosis. The bacteriological examination revealed no tubercle bacilli, but a micro-organism in the lungs and "tubercles" which belonged to another genus, and for which the name of "streptothrix pseudo tuberculosa" is proposed.

Drs. S. J. Meltzer and **T. M. Cheesman**, of New York, read an article entitled

AN EXPERIMENTAL STUDY OF THE DIRECT INOCULATION OF THE SPLEEN WITH MICRO-ORGANISMS, AND A CONTRIBUTION TO OUR KNOWLEDGE OF THE IMPORTANCE OF THE LESION OF A BODY TISSUE FOR THE SETTLEMENT AND DEVELOPMENT OF BACTERIA WITHIN IT.

The authors state, that, as the final object of experimental infection is the introduction of the organisms into the circulation, and as the different results obtained by the various methods heretofore employed are largely due to a mechanical factor, that is, the rapidity with which the organisms and their products are absorbed, it occurred to them that new characteristics in the forms of infection might be obtained from a systematic study of inoculations made primarily into one of the internal organs. The spleen was selected because, although its exact function is little understood, it seems to harbor the specific micro-organisms in certain of the infectious diseases. The experiments, which are published in full, were conducted chiefly on rabbits, and the inoculations were mostly of broth cultures of the bacillus coli communis. The following conclusions are drawn from the work:

(1) Cultures of bacillus coli communis, bacillus typhosus and staphylococcus pyogenes aureus when injected into the tissue of the normal spleen soon disappear from that organ, and, indeed, from the normal body generally.

(2) Bacteria injected into a spleen after the whole or a part of the vessels have been tied, multiply in the spleen with great rapidity and continue to supply bacteria to the blood, where in the healthy body they soon disappear.

(3) Bacteria injected into the spleen or subcutaneous tissue, or into the blood current through the ear vein, in cases where moderate lesions have been made by cauterization, or compression in the spleen, liver, kidney, uterus, peritoneum, or subcutaneous tissue, usually find lodgment in these lesions and multiply there.

(4) Even in cases where numerous foci existed from which the blood was constantly provided with a fresh supply of bacteria, but few bacteria were found at any time in the blood.

Dr. W. H. Welch stated that this contribution to the doctrine of *locus minoris residentia* is welcome because it confirms the view generally held by bacteriologists as well as by practitioners, and because it has recently been attacked by Rinne and others.

Drs. M. H. Fussell and **A. E. Taylor**, of Philadelphia, reported two cases of

ACUTE LEUKEMIA.

Dr. William Osler, of Baltimore, read a paper on

PARALYSIS OF THE LEFT RECURRENT LARYNGEAL NERVE IN MITRAL STENOSIS.

Dr. Osler reported two cases of mitral stenosis in which paralysis of the left recurrent laryngeal nerve occurred without signs of aneurism or intra-thoracic tumor. He referred to Ortner's two fatal cases with this symptom, which he explains by pressure of the distended left auricle on the left recurrent.

AFTERNOON SESSION.

Dr. E. G. Janeway, of New York, described

TWO ATTACKS OF TEMPORARY HEMIPLEGIA OCCURRING IN THE SAME INDIVIDUAL AS THE RESULT OF THE USE OF PEROXIDE OF HYDROGEN IN A SACULATED EMPYEMA (PLEURAL).

The case reported is as follows: Mr. B., aged forty-one, had, two years previously, developed a pleurisy on the left side, which had been aspirated. One and a half years after this event a swelling developed in the left lumbar region, which, when incised, was found to communicate with a saculated empyema at the base of the left lung. The patient had used peroxide of hydrogen to irrigate the sac. On the 25th of November, three and one-half months after the operation, two minutes after his customary use of the peroxide, and as he noticed it bubble inside, he felt very queer, became unconscious for a second, and found that his right arm and leg were numb and powerless. He did not lose the power of speech. This loss of power lasted for twenty-five minutes, and then passed away completely, leaving him as well as ever. Three days after this first attack he had an exactly similar seizure, the paralysis lasting as before twenty-five minutes. The sinus was found to have so far closed that no air nor fluid escaped after the introduction of the peroxide.

The author then refers to the two cases published, one by Leudet and the other by Forgues, and after a consideration of the physiological methods by which such symptoms might be produced, he concludes that the phenomena are best explained by supposing the hemiplegia to be due to an embolism of such a nature as to soon disappear. The only substance capable of thus acting would be either air or gas. Oxygen might be the agent when peroxide had been used as in the case recorded. He thinks the evidence all against the reflex theory.

Dr. Henry Hun reported a somewhat similar case in which the patient had been using peroxide of hydrogen to cleanse a sinus above Poupart's ligament, and which seemed to be due to caries of the vertebra. He thought it possible in his case that there might have been an opening through the vertebra into the spinal canal and the pressure might have acted directly upon the cord.

Dr. V. C. Vaughan, Referee representing Physiological Chemistry, introduced a discussion on the question,

IS URIC-ACID DIATHESIS AN IMPORTANT FACTOR IN PATHOLOGY?

After going somewhat into detail concerning the composition of the nucleus of the leucocyte and studying the phenomena of chromatolysis, in which process uric acid is formed, Dr. Vaughan proceeded to study the origin of the alloxuric bodies in the body, as follows: It will be evident from what has already been given concerning the chemistry of nuclear substances that the alloxuric bodies can originate only when there is nuclear disintegration and then not until the nucleinic acid is broken up. The solution and disintegration of nuclei is designated as the process of chromotolysis. Some of the conditions under which the alloxuric substances may be formed in the body may now be stated.

(1) Every nucleus comes from a parent nucleus. Every cell must at some period of its existence be nucleated. Biologically, the nucleus is that part of the cell which is essential to growth and reproduction. Many of the cells formed in the animal body are destined, after having reached a certain period of growth, solely to serve other cells, and these may, and some of them certainly do, lose their nuclei after having reached the stage of development necessary for them to reach before they can perform the function for which they are brought into existence. The nuclei, after having perfected the red blood-corpuscle so that it may serve as a carrier of oxygen, disappears,

the nuclein is broken up, alloxuric bodies are formed, and uric acid, the most highly oxidized of these substances, is the chief representative in the urine of the nuclear metabolism resulting as here indicated. As the formation of red blood-corpuscles is a continuous process, this source of the alloxuric bodies is a never-failing one.

(2) The leucocytes are a constant, but quantitatively variable, source of the uric acid and other alloxuric bodies.

(3) It has long been known that increased consumption of animal food increases the amount of uric acid formed in the body. This increase is probably due to two causes: (1) meat contains nucleo-proteids and alloxuric bodies in small amount; (2) digestion leucocytosis is greatest after meals rich in animal food, and is likewise increased by alcoholic beverages.

(4) The physiological disintegration of various nucleated cells in the body must contribute slightly to the formation of alloxuric bodies.

(5) Some poisons, such as lead and alcohol, stimulate certain cells to abnormal proliferation, and many of the rapidly forming cells break down and their nuclei suffer dissociation changes.

(6) Certain pathological growths are accompanied by marked cell proliferation, and, as above, this may be a source of uric acid in cases of carcinoma, etc.

Dr. W. H. Draper, Referee representing Clinical Medicine, said: Those of us who have for years clung to the old sub-oxidation theory, which made the complex chemistry of the body so simple when we considered the final destiny of a nitrogenous molecule to be urea and one of the carbohydrates to be carbonic acid and water, are compelled to admit that the more the chemistry of the vital process of nutrition is investigated the more complex the problem becomes. We certainly are no longer justified in believing that uric acid is necessarily the penultimate of urea, because we can convert it into urea by oxidation in the laboratory, since recent investigations tend to show that it is derived from a special albuminous element, the nuclein in the nuclei of the white blood-cells, and it is asserted that uric acid and its allied bodies can be obtained from the destructive transformation of nuclein. Horbaczewski has found by actual experiment that drugs which increase leucocytosis are followed by an increase of uric acid, and, contrariwise, that drugs which diminish leucocytosis will diminish uric acid. Though we may be led to accept this evidence as to the nuclein origin of the uric acid, we must acquire more evidence than we now have to prove that it is the principal source of uric acid.

The chief interest, however, to the clinician, of these considerations as to the origin of uric acid lies in their bearing upon the elucidation of the widely accepted views as to their etiological relation to the subjective symptoms and objective lesions which are so generally ascribed in these days to the lithic-acid diathesis.

Since the demonstration of Garrod, fifty years ago, of the salts of uric acid in the blood serum of sufferers from gouty arthritis, there has been no question as to the fact, though there has been infinite discussion of its true relation to the nature and determining cause of the process by which the paroxysms were produced. Two well-ascertained facts embarrass us: (1) we know that uric acid may accumulate in the blood, temporarily at least, and not produce gout; (2) we know that gout may occur without any positive evidence in the blood serum that there is an excess of uric acid, or in the urine that there is an undue elimination of it. These facts and others which might be mentioned have driven the advocates of the uric-acid theory to invoke the aid of the nervous system to supplement its defects and explain the pathological process. As a result, we have now what has been called the neuro-chemical theory, which perhaps better than any other correlates the diseases which pass under the name of gout and rheumatism.

The differential diagnosis of the diseases just mentioned has always been, and still is, a puzzling problem to pathologists and practitioners; and it may be said that there is nothing absolutely common to them all, except what we may call arthritism, a common seat in the structural tissues of the joints and contiguous fascia and tendinous appendages, or, in a word, in the connective tissues wherever found. In regard to gout we have a pretty general consensus as to the recognition of uric-acid blood state as a coincident but not invariable element. In regard to acute inflammatory rheumatism, in which we have discovered no special blood dyscrasia, since we have discarded as unproved the lactic-acid theory, authorities are now inclined to reckon it among the specific infectious fevers. As between these apparently most distinct forms of articular inflammation, we must conclude that the only common basic relation is the anatomical one, and the only reason to suppose that these diseases are in any way related lies in the fact that in those who are exposed to these affections for some cause inherent in the individual, hereditary or acquired, these structures are especially vulnerable.

The experience of clinical observers in what, I think, we might call for convenience, arthritism, tends towards the acceptance of the view that gout and rheumatism are in some way allied. In support of this assertion I would first instance the mixed forms of gout and rheumatism in the same individual, in different individuals in the same family, in the greater liability of the men to true gout and of the women to rheumatism, in the common recurrence of gout and rheumatism in the children of gouty parents for which there seems to be no other explanation than a special vulnerability of the joint structures along with an extreme susceptibility to atmospheric changes, to certain errors in digestion, and perhaps to the invasion of particular pathogenic infections.

Dr. James Tyson, Co-Referee representing Clinical Medicine, continued: I regard that person as the subject of the uric-acid diathesis who secretes habitually a scanty, high-colored urine, of high specific gravity and decided acid reaction, a urine which promptly deposits, either at the temperature of the body or at a slightly lowered temperature, a copious sediment of uric acid and mixed urates,-to which oxalates may be added. Such a urine may contain a trace of albumin and even a few hyaline casts. I do not say that this constitutes the uric-acid diathesis. It is rather its sign, or perhaps one of its consequences, whence we may infer its presence. It matters not from the clinical standpoint whether such a person ingests more uric acid, manufactures more uric acid within his organism, or does not take in enough water to hold the uric acid in solution, he is the subject of a condition which produces the result.

The most manifest of the results of this diathesis is the tendency to uric-acid gravel and uric-acid calculus, a result so commonly recognized that it is scarcely necessary to make any extended reference to it.

(2) It is, however, true of the uric-acid diathesis that it means something more than a scanty urine readily depositing urates and uric acid. Whatever it is, while of a less tangible character, it leads to some results that are scarcely less tangible than gravel and its effects, and one of these is gout.

(3) As undoubted in my own mind as that gout is the result of uric acid is it that the uric-acid diathesis is frequently responsible for an idiosyncrasy in which depression of spirits is a constant symptom, and extreme modesty, a want of self-reliance, moodiness, irritability and bad temper are a part of the same condition.

(4) That uric acid is responsible for certain cases of migraine I am also ready to admit.

(5) Vertigo in most distressing forms is also at times a result of the presence in the blood of the alloxuric bodies, it may be alone or associated with other symptoms.

In all these conditions, save lithiasis and gout, and possibly in the latter also, I believe that the offending uric acid, or allied substances, are operating in solution through the blood, it may be in concentrated solution, but nevertheless in solution.

Dr. Tyson then asks, Does uric acid produce rheumatism as something distinct and separate from gout? Does it produce sore throat, asthma and bronchitis? Does it produce glycosuria and diabetes? He proceeds to answer all of these questions save the last in the affirmative and in regard to diabetes says, that, while the two disorders may exist simultaneously and may be the result of the same cause, that cause is not uric acid in the case of glycosuria.

DR. C. A. HERTER: Perhaps I may be permitted to say a few words with reference to certain observations made during the past seven years in regard to the excretion of uric acid in health and disease. In these observations the Ludwig-Salkowski method was exclusively used because of its exceeding accuracy. The first thing that struck me of importance was the fact that the majority of healthy adults upon a mixed diet showed no very wide variations in the excretion of uric acid as compared with the excretion of urea, the average proportion ranging between 1 to 60 or 1 to 40, while there is a large class who excrete very much more uric acid than this without presenting anything characteristic in their clinical condition. There is nothing particularly characteristic about a distinct increase in uric-acid excretion, and no reason for connecting it with any particular clinical form of disease unless it be some digestive disorder.

The idea has been referred to that it is characteristic of the uric-acid diathesis for patients to excrete a small amount of urine of high specific gravity and high acidity. That is true in many cases, but not characteristic, for the amount of uric acid may be increased in urine that shows quite opposite features. An increased amount of uric acid in the urine is no evidence of an increase of uric acid in the blood. It seems upon the whole likely that there is a certain relationship between leucocytosis and the increase in excretion of uric acid, but there are some difficulties in the way of accepting the Horbaczewski theory just as it stands. I have studied the blood of animals, and never found any increase of uric acid there even after removal of the kidneys, a fact that remains to be harmonized with this theory. Repeated examinations of the blood in various conditions of disease have failed to reveal any actual increase of the uric acid in the blood; and in the absence of such evidence it would seem to be going out of the way to charge these conditions to uric acid.

DR. A. H. SMITH: It seems that this discussion illustrates the error we are likely to fall into when we endeavor to make the results of reactions in the test-tube tally with the reactions that take place in the body, leaving out of the question the problem of vitality.

Early in my life I adopted the idea that uric acid in the body was due more to the ingestion of the carbohydrates than to nitrogenous food, and my clinical experience has tended to confirm that view. One of the worst cases I ever saw, a case in which spontaneous amputation of the big toe took place, had been under treatment by drugs for a long time, but absolutely recovered in a few months by use of a diet similar to what we would use for cases of glycosuria.

A number of years ago I undertook to study the relative output of urea and uric acid of patients who were getting an unusual amount of oxygen by inhalation, and my results seemed to support the sub-oxidation theory.

DR. J. H. WRIGHT, of Boston, made a

REPORT OF A CASE OF MADURA FOOT.

Dr. Wright reported a case of mycetoma, or madura foot, of the melanoid variety, and the black granules which are so characteristic of the affection were found to consist essentially of a fungus growth. Pure cultures of this fungus were obtained, and the organism is one of the hyphomycetes, and is therefore not closely allied to actinomyces as has been thought by some, for the latter is now recognized as a streptothrix.

By the aid of the lantern Dr. Wright described the morphological peculiarities of the parasite and the histological lesions produced by it.

THIRD DAY. — MORNING SESSION.

DR. A. H. SMITH, of New York, read a paper on

ANTITOXIN TREATMENT OF PNEUMONIA.

Dr. Smith, after describing the preparation of pneumonia antitoxin, and giving an account of its action upon animals, summarized all the work on this subject that has been published up to date and gave a brief *résumé* of results obtained by different observers.

DRS. WILLIAM H. WELCH and **V. C. VAUGHAN** both stated that there is at present no scientific experimental basis for this antitoxin. They referred to the difficulties in discovering even a toxin in this disease, and showed that the immunity experiments so far were of such limited value that there is little promise of making it of therapeutic use.

DR. STOCKTON referred to the belief that the degree of leucocytosis has something to do with the crisis in lobar pneumonia, and reported a case illustrating this theory.

DR. W. S. THAYER stated that his experience had been that there was much difference in the way leucocytosis behaved in relation to the crisis, and he was more inclined to believe that the fall in leucocytosis depended rather upon the rapidity with which the lung consolidation cleared up.

THE BACTERIOLOGY OF CHEESE.

Drs. V. C. Vaughan and **J. T. McClymonds** reported a large number of bacteriological examinations upon all varieties of cheese. They had found pathogenic bacteria in all save a very few old foreign brands. Although numerous organisms were found, one specific bacteria seemed to appear in nearly all the examinations. The inference seemed to be that the fresher and the poorly made cheeses contained the most organisms and were the more dangerous.

Dr. W. H. Thompson, of New York, reported

A CASE OF CHRONIC INFECTIVE ENDOCARDITIS, WITH STREPTOCOCCI FOUND IN THE BLOOD BEFORE DEATH; TREATED BY ANTI-STREPTOCOCCUS SERUM; AND EXPERIMENTS ON THE EFFECTS OF INJECTIONS OF SERUM AND OF ANTITOXINS UPON THE KIDNEYS.

Patient, aged thirty-six, male, affected for seven months with definitely periodical daily attacks of an intermittent fever, ushered in by chilliness or by pronounced rigors. At other times he would have attacks of severe, periodical neuralgias in the forehead and in the left hypochondrium, without rise of temperature. No recent cardiac lesion could be demonstrated on account of a loud murmur due to congenital malformation of the right heart obscuring other heart-sounds. He never showed ecchymoses or other local lesions which would point to infective endocarditis, but an examination of the blood drawn from the median line showed the presence in it of numerous streptococci pyogenes. He was then treated with injections of anti-streptococcus serum with no benefit, his rigors increasing in severity, and death finally supervening, with symptoms of acute nephritis and suppression.

Though his urine had shown previously both blood and albumin after several attacks of rigors, yet the renal symptoms increased so rapidly after the injections of the streptococcus antitoxin that to test the effects of serum injections on the kidneys, as well as the seemingly beneficial effects of injections of normal saline solutions in the renal suppression of this patient, experiments were performed on eleven dogs.

These experiments on dogs were followed by ten check experiments upon rabbits on the same lines, and tabulated results were given of the conditions found in the urine and in the kidneys.

Dr. J. E. Graham reported two cases of septicemia treated by antistreptococcus serum with recovery.

Dr. W. S. Thayer spoke of the similarity of the temperature curve in this affection to that of quotidian fever, but believed that the differentiation could always be made by the more exact periodicity of paroxysms in the malarial chart, by the larger count of red blood-corpuscles in septicemia, and by the action of quinine, which he regards as an absolute specific for malaria.

STUDIES OF ANTITOXINS FOR TUBERCULOSIS.

Drs. E. L. Trudeau and **E. R. Baldwin**, of Saranac Lake, described their attempts to produce an antitoxic and curative serum for tuberculosis, and to test on animals the efficacy of serums already produced.

The paper is divided into two parts. The first describes the authors' methods and attempts at producing an antitoxic serum in various animals — sheep, fowls, asses and rabbits — as well as the tests used to study experimentally any germicidal or curative properties supposed to have been developed in such serums. The second part is devoted to tests on animals of the antitoxic power of the serums obtained by the authors, and of some other serums already in the market, or furnished to them for experiments. The work extended over four years, and the observations were made on four sheep, three asses, 12 fowls, 18 rabbits and 450 guinea-pigs.

The results obtained showed that in one or two of the serums tested, a slight degree of antitoxic power may have been present, while in all the others the tests were negative. In none of these tests could any germicidal or curative influence be demonstrated.

The writers feel that in the light of recent contributions made by Ehrlich, Wasserman and Behring to our knowledge of the mechanism of immunity and antitoxin production in the body, the outlook for an efficient tuberculosis antitoxin is by no means a hopeless one.

THE EFFECTS OF FREEZING ON DIPHTHERIA ANTITOXINS.

Dr. H. C. Ernst, of Boston, found that upon freezing diphtheria antitoxin for a period of from two to eight days it separated into several layers of different density; and on testing the immunizing power of these different layers, it was determined that the upper layers had lost nearly all of their antitoxic properties, whilst the lower layers had greatly gained in power. The freezing seems to have the power of throwing down the antitoxic element.

Dr. Vaughan asked whether in the total amount of serum in the tube there had been any loss of antitoxic property.

Dr. Ernst replied that this could not be determined with absolute accuracy, but that there seemed to be no such loss.

The regular programme having been concluded, the annual election of officers was held, resulting in the choice of the following: President, Dr. J. Baumgarten; Vice-President, Dr. E. G. Janeway; Recorder, Dr. I. Minis Hays; Secretary, Dr. Henry Hun; Treasurer, Dr. W. W. Johnston; Councillor, Dr. J. C. Wilson; Representative on Executive Committee of Congress of American Physicians and Surgeons, Dr. William Osler; Alternate Representative, Dr. C. F. Folsom.

The following papers were read by title:

"Chronic Interstitial Nephritis," by Dr. I. N. Danforth, of Chicago.

"The Diffuse Infiltrating Form of Secondary Melano-Sarcoma of the Liver," by Dr. L. Hektoen, of Chicago.

"A New Pathogenic Pigment-producing Bacillus," by Dr. H. C. Ernst, of Boston.

"Neuralgia Paresthetica," by Dr. J. H. Musser, of Philadelphia.

"The Renal Form of Enteric Fever," by Dr. James C. Wilson, of Philadelphia.

"A Chapter in Peripheral Pathology: the Circulation in the Feet," by Dr. Morris Longstreth, of Philadelphia.

"Some Usually Overlooked Physical Signs in Chest Diseases," by Dr. N. Bridge, of Los Angeles.

"The Micrococcus Subnormalis," by Dr. Samuel A. Hopkins, of Boston.

"A New Pathogenic Chromogenic Bacillus," by Dr. F. P. Gorham, of Boston.

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THE REPORT OF THE ROYAL COMMISSION UPON TUBERCULOSIS, 1898.

A perusal of this document shows very conclusively that the Royal Commission appointed in 1896, which has just made its report, has taken a very different view from that of the Massachusetts Legislature now in session, which has practically withdrawn State support from the State Cattle Commission.

This is the third British Commission which has been appointed to make investigations in regard to tuberculosis. In 1888 a Departmental Committee was appointed to inquire into pleuro-pneumonia and tuberculosis, and that committee reported that there was little doubt that tuberculosis of cattle was infectious and also dangerous to man.

In July, 1890, a Royal Commission, composed equally of physicians and veterinary surgeons, was appointed to inquire and report what is the effect, on human health, if any, of food derived from tuberculous animals, and, if prejudicial, what are the circumstances and conditions with regard to the tuberculosis in the animal, which produce that effect in man. That Commission reported that, as the result of feeding and inoculative experiments, it was shown that the disease was interchangeable with that of man; that the meat of a tuberculous cow was seldom dangerous, if well cooked, but that the milk from a cow with a tuberculous udder must be regarded as dangerous.

Among the noted members of the present Commission are Sir Herbert E. Maxwell, Chairman; Dr. Richard T. Thorne, of the Local Government Board; Prof. G. T. Brown, veterinary adviser of the Board of Agriculture, and Shirley F. Murphy, Medical Officer of Health of London.

The Commission was instructed "to inquire what administrative procedures are advisable and would be desirable for controlling the danger to man, through the use as food, of the meat and milk of tuberculous animals; and what are the considerations which should govern the actions of the responsible authorities in condemning for the purpose of food supplies, animals, carcasses, or meat exhibiting any stage of tuberculosis."

Some of the recommendations contained in this report will commend themselves to sanitarians, the more so as their adoption would protect the public against other diseases than tuberculosis. The provision of public slaughter-houses, the inspection of all meat slaughtered elsewhere than in public slaughter-houses and brought into the district for sale, the inspection of all animals immediately after slaughter in a public slaughter-house, and the requirement that in future no person shall be permitted to act as a meat inspector before undergoing a qualifying examination on the law of meat inspection, the names and situation of the organs of the body, signs of health and disease in animals and carcasses, and the conditions rendering fresh meat fit or unfit for human food, would still be essential for the protection of the public, if tuberculosis were stamped out. So long as it exists they are doubly essential. The same remarks apply to the recommendations that in future no cowshed or stable should be permitted or registered in urban districts within 100 feet of any dwelling-house, and that the conditions of the attached cowsheds that should warrant the registering of a dairy in a populous place should include (1) an impervious floor, (2) a sufficient water-supply, (3) proper drainage, (4) a depot for the manure at a sufficient distance from the stables, (5) a minimum cubic contents of from 600 feet to 800 feet for each adult beast, (6) a minimum floor space of 50 feet for each adult beast, and (7) sufficient light and sanitation. It is almost impossible to exaggerate the importance of stringent provisions of this character for the regulation of the keeping of animals in populous places, and the necessity for proper regulations on this subject is in no way dependent upon, although it may be well illustrated by, the dangers which result to the human race by the consumption of the carcasses of animals that have died of tuberculosis and the milk of animals suffering from that disease.

So far as these recommendations have for their object the prevention of the consumption of diseased meat, the report points to the conclusion that they can be better justified on general grounds than on the ground of special risk of the spread of tuberculosis through meat. The Commission are unanimously of opinion that this risk has been very greatly overestimated; and the only evidence which they have been able to find in support of it is that afforded by the results of certain artificially contrived infections of meat made for the purposes of the previous Royal Commission on Tuberculosis, which evidence, as they point out, was "the outcome of deliberately contrived laboratory experiments admittedly carried out under methods involving a risk greater than any which would probably arise in ordinary trade procedures." On the other hand, the Commission entertain no doubt that the corresponding danger from milk-supply from tuberculous animals is far greater; and they practically confirm the opinion expressed by the former Commission that "no doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter." The main reason for this is that the cooking of the meat to a great extent destroys the infected matter; and that the bulk of the milk in England is consumed in a raw state — a statement which applies quite as well to the United States, but not to the Continent of Europe. The Commission state that "it has been proved over and over again that milk from tuberculous udders, and even milk which has been purposely contaminated with tuberculous matter, can be rendered harmless by being boiled for one minute"; but it is hopeless to expect that the public will take this simple measure of precaution. What precautions can then be taken by the State to protect the public?

At present, it appears that in England local authorities are powerless in this matter. The Commission, while reporting that the system of meat inspection is unsatisfactory, go so far as to say that milk inspection, in relation to tuberculosis, is still more so, and that, indeed, it may be said not to exist; and yet it has been proved to the satisfaction of the Commission that tuberculosis prevails to a larger extent among dairy stock than in any other class of animals; it is easier to see the defect than to suggest any adequate remedy. The difficulties in the way of any effective inspection of the milk-supply of a large town are enormous. The vast bulk of the milk must come from outside the town, and the inspection must, therefore, mainly be in the hands of outside authorities. The Commission, have, however, seen their way to make certain practical recommendations with a view of dealing with this danger. They recommend that power should be given to local authorities to take samples and make analyses from time to time of milk produced or sold in their districts, and that milk vendors should be required to supply information as to the sources from which their milk is derived. They further recommend that at ports where milk and milk products are received from any foreign countries any costs that may be thus incurred in their examinations should be borne by the importers. If these recommendations are adopted, investigations by medical officers of health, as to the spread of infection by milk supplies, will be greatly facilitated, and the knowledge that this will be the case may lead, it is thought, to increased precautions being taken by the milk purveyors to secure their milk from infection. The Commission also recommend that notification of every disease in the udder should be made compulsory, under penalty on the owners of all cows, whether in private dairies or those of which the milk is offered for sale. The objection to this measure is that tuberculosis of the udder can rarely be differentiated from other forms of udder disease by the ordinary stock owner or dairyman. It would also involve additional inspection by the rural authorities; but, on the other hand, it might materially improve the quality of the milk supplies, afford protection against other infection than that from tuberculosis, and possibly assist in preventing the spread of tuberculosis amongst the cattle. The remaining recommendation of the Commission under this head is that local authorities should have powers to inspect all cows kept for supplying milk within their jurisdiction, and to proceed against any owner who retains any cow "which suffers from tuberculosis or any disease which might render the use of such milk dangerous or injurious to health."

In view of the great difficulties in the way of any effective inspection of milk supplies, it is satisfactory to notice that there is reason to hope that bovine tuberculosis may be very considerably reduced by other means. Any attempt to stamp it out by slaughter the Commission regard as quite impracticable, apart from the cost, which would be intolerable; but they state that the Danish Government has been remarkably successful in eliminating the disease from herds by the adoption of tuberculin as a means of diagnosis, separating the sound from the suspected animals, and feeding the calves exclusively on boiled milk. By the adoption of these means, tuberculosis has been practically eliminated from badly infected herds in Denmark. Some members of the Commission themselves visited Denmark in the spring of last year for the purpose of investigating the working of the system which has been so successfully adopted in that country. In this, as in so many other matters connected with dairy farming, the Danes set an example worthy of imitation. The Danish Government supplies tuberculin gratuitously to farmers, on the condition that the healthy animals shall be isolated from those which are tuberculous; and, in addition, it gives the services of a veterinary surgeon to superintend the operations necessary in carrying out the test in a scientific manner. The annual cost is £5,625. For this sum the Commission estimate that 50,000 animals could be submitted to the same test in England. If the test were applied to all the cattle in the United Kingdom the cost, it is stated, would exceed a million sterling; but the Commission are of opinion that there is not the slightest probability of anything like this demand at first on the Imperial exchequer; and they suggest that after the system had been established for, say, five years, it might be considered how far stock owners might be called upon to contribute to this form of insurance. The Commission therefore recommend that funds be placed at the disposal of the Board of Agriculture and the Veterinary Department of the Privy Council in Ireland, for the preparation of commercial tuberculin, and that stock owners be encouraged to test their animals by the offer of a gratuitous supply of tuberculin and the gratuitous services of a veterinary surgeon on the following conditions, namely, that the test be applied by a veterinary surgeon; that tuberculin be supplied only to such owners as will undertake to isolate reacting animals from healthy ones; that the stock to be tested shall be kept under satisfactory sanitary conditions; and more especially that sufficient air space, ventilation, and light be provided in the buildings occupied by the animals.

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CONTAGIUM VIVUM.

There has been a general conviction that all the infectious diseases are due to the multiplication and diffusion of living parasites in the organism affected. This has been proved true of many virulent diseases whose microbic origin is now known, and is logically inferred of others whose pathogenic agent is still unknown. It was long ago shown that the analogy is complete between the viruses which produce measles, small-pox, diphtheria, etc., and the living agents of the respective fermentations; all are capable of unlimited self-propagation. Are there any chemical poisons, not of an animated, figured nature but of a soluble kind which produce similar results? This question has been generally answered in the negative, although some competent authorities have surmised that the viruses of canine rabies and of snake-bites are soluble ferments of the nature of ordinary toxic neurotic agents (strychnia, atropine, etc.), but unlike the latter in their ability to multiply themselves in the blood and tissues indefinitely.

Sir James Fayrer inclined to the opinion that snake virus is a poison of the nature of ptomaines, a proteid capable of transforming the plasma of the blood and tissues — through contact, it may be — into proteids like itself, though Pasteur and others believe an unknown microbe to be the cause.[1] Weir Mitchell and Reichert[2] maintain that there are two distinct classes of poison in venoms, both represented in all venoms, only differing in relative proportions and slightly in chemical and physiological properties, that they are proteids and closely related to principles normally existing in mammalian blood.

At a recent medical congress, Sanarelli, of Montevideo,[3] called attention to the difficulties which attend the general proposition that virulence constitutes a vital function of micro-organisms. There exist numerous transmissible affections whose microbe is still unknown, and which present at the same time certain peculiarities by which they are distinguished from the ordinary type of an infectious disease. To this group belong canine rabies and syphilis. He has recently observed and studied an affection of the same kind supervening spontaneously in hares in his laboratory at Montevideo. A statement of his published observations was given in the last issue of the Journal. Sanarelli, from numerous experiments, concludes that the virus of this myxomatous disease is a chemical poison and not an organized ferment. Filtration through porcelain does not diminish its power; this is exalted by successive transmissions through hares; it is more resistant to antiseptics than any known organized virus. On the other hand, this virus is killed by moist heat at 55° C. Rats, guinea-pigs, monkeys and birds are refractory, dogs and men in a slight degree susceptible, to this virus. All tentatives of vaccination and sero-therapy have failed; this is another mark of distinction from the known microbic affections.

The above considerations are not convincing that the myxomatous affection of which Sanarelli speaks is due to a soluble poison and not to a micro-organism. It is certain that the annals of medical nosology do not contain a single infectious malady whose cause is a recognized chemical poison capable of indefinite multiplication in nutrient media, even when diluted *ad infinitum.*

On the other hand, granted that the virus of canine rabies, of snake-bite, of syphilis, of Sanarelli's myxomatous disease, is a microbe, the morphological units of these diseases may be so small as to be below the limit of visibility. This is strongly intimated by Löffler in an address before the Madrid Congress above mentioned. Alluding to the fact that there exist numerous infectious diseases whose pathogenic agent is still unknown, he thinks that this may be due on the one hand to the peculiar conditions in which the causal microbes exist, their non-susceptibility to staining fluids, etc., and on the other to the exceeding smallness of the microbe. From this point of view he has made a special study of aphthous fever, a sufficiently common bovine disease whose virus accumulates in certain vesicles in the mouth and other parts. No germs are observable in the serum from these vesicles, and yet a very minute portion — a fraction of a drop — inoculated under the mucous membrane of a calf reproduces the disease. Filtration through porcelain does not destroy the infectiousness of the serum, though the virulence is attenuated by successive filtrations. Löffler claims that prophylaxis and immunity can be conferred on bovine animals by the use of such attenuated virus; it cannot, however, yet be cultivated in media out of the body. In short, the properties of the virus are, in general, those of known microbic contagion. Löffler ridicules the notion that a virus which can be propagated in infinitesimal quantity, like this, with unchanged powers for six or more successive generations, causing in every instance a general disease with its specific manifestations, can be anything but a *contagium vivum.*

The chemical doctrine so ably maintained by Liebig half a century ago has given place to that of microbes and their toxins, supported constantly by new discoveries; but perhaps to all time infectious diseases will exist whose pathogenesis will baffle chemist and bacteriologist alike.

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MEDICAL NOTES.

Association of American Medical Colleges. — The Annual Meeting of this Association will be held at the Brown Palace Hotel, Denver, Col., Monday,

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[1] Sir James Fayrer: Lectures in Lancet, 1884, First Part, pp. 195, 207, 239, 288.

[2] Smithsonian Contributions to Knowledge, 647, 1886.

[3] Ninth Medical Congress of Hygiene and Demography, held in Madrid, April 10-16, 1898.

June 6, 1898, beginning at ten o'clock in the morning. The Judicial Council will meet at the same place at 9.30 A. M. Each college, member of the Association, is entitled to one representative and to one vote in all proceedings. The dean of the college is the official representative. When any other person acts in that capacity, he or she should bear an official appointment from the proper officers of the college. There are 65 of the 116 regular medical colleges conforming to the rules and holding membership in the Association. Probably six other colleges are eligible to membership but neglect from one cause or another to keep up membership. The imperial authorities of Japan recognize the diplomas of colleges holding membership without other formality and several State examining boards grant similar courtesies. The officers of the Association are: President, J. W. Holland, Philadelphia; Senior Vice-President, H. O. Walker, Detroit; Junior Vice-President, Thomas Opie, Baltimore; Secretary, Bayard Holmes, 104 East Fortieth Street, Chicago; Chairman of Judicial Council, Dudley S. Reynolds, Louisville, Ky.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, May 25, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 15, scarlet fever 13, measles 66, typhoid fever 6.

The Denver Meeting: A New England Itinerary. — The Transportation Committee for New England announces the following Itinerary for the annual meeting in Denver of the American Medical Association: To leave Boston at 3 P. M. June 2d via Fitchburg Railroad, arriving at Niagara Falls the next morning via the West Shore Railroad, where a short stop will be made to view the Falls; thence over the Wabash Railroad to St. Louis via Detroit, where the party will be entertained by Parke, Davis & Co. From St. Louis the Missouri Pacific will be used, leaving there at 9.15 P. M., June 4th, arriving at Kansas City the following morning, where another stop of a few hours will be made to view the sights of Kansas City, leaving there about 10 A. M. and going over the Missouri Pacific and Denver & Rio Grande Railroads to Denver, arriving there about noon June 6th. Members of the party will have the privilege of returning via Omaha, Neb., thus enabling them to see the Trans-Mississippi International Exposition. The fare will be one fare and a third for a round trip. Physicians and their families are welcome. An Itinerary will be issued in a few days giving full details of the trip. These can be procured at the office of the Missouri Pacific Railroad, No. 190 Washington Street, or the Wabash Railroad, No. 5 State Street, Boston; or from the Committee, Dr. H. O. Marcy, Boston, Dr. T. D. Crothers, Hartford, Conn., and Dr. E. R. Campbell, Bellows Falls, Vt.

NEW YORK.

The University of the City of New York. — The fifty-seventh annual commencement of the Medical Department of the University of the City of New York was held at the Metropolitan Opera House on May 18th. There were one hundred and three graduates, and the address to the class was made by Chauncey M. Depew. On this occasion the following important announcement, in the form of a statement from the Council of the University, was read:

"We here record as a subject of equal surprise and regret to this Council that a sister university (Cornell) some weeks ago began negotiations, looking to the establishment of a new medical school in this city, with what was plainly a combination of professors at variance with their own university, and this without any consultation with this university and without the slight delay which would have enabled these professors decently to tender their resignations of their respective professorships. The Council further announces that the trustees of the Bellevue Hospital Medical College have to-day voted to complete the consolidation of that college with the New York University. The strength of these two venerable foundations will henceforth be given to a single medical school, under the title of 'The University and the Bellevue Hospital Medical College.' The alumni of the two schools, numbering nearly ten thousand graduates, will be placed on the roll of the university. The two properties, together occupying 225 feet on East Twenty-sixth Street, near First Avenue, and costing about half a million dollars, will both be owned by the New York University and used by the united school.

"The faculty of the new school will consist of Dr. Edward G. Janeway, Dean, and seven professors of the former University Medical Faculty and twenty-one professors and adjunct professors of the former Bellevue Medical Faculty, together with such additional professors as may hereafter be appointed. Besides these there are thirty or more lecturers, instructors and assistants."

The usual prizes were awarded in the graduating class; there were thirty-three names on the honor list.

St. Vincent's Hospital. — The corner-stone of the new building for St. Vincent's Hospital was laid by Archbishop Corrigan on May 15th, addresses being made by Justice Morgan, J. O. O'Brien and members of the medical staff. The structure will be built upon the oldest part of the present site of the hospital on West 11th Street. On it there now stands an old stone building which has been occupied for over fifty years by St. Vincent's Hospital, and was originally built for the Roman Catholic Orphan Asylum. The new building will be an imposing structure of six stories in the French Renaissance style, composed of brick with limestone trimmings. It will have a frontage 145 feet in length, and in the rear of the easterly wing there is to be a large chapel. The cost is estimated at $300,000, and it is expected to be ready for occupancy by January, 1899.

Obituary.

JOSEPH STEDMAN, M.D.

The professional neighbors and friends of Dr. Joseph Stedman have heard with deep sorrow of his death, having hoped, although aware of his enfeebled health, that his life in this community where he has been so many years beloved and respected might be prolonged in comparative comfort and usefulness for many years.

Known to some of us since his return from army life at the beginning of his medical career, and to most of us through many years of professional and social acquaintance, we feel that the community has lost in him a good man, a patriotic and public-spirited citizen, and an able practitioner of his art; and that we, his professional associates, shall especially miss him as a wise counsellor, a genial companion and a faithful friend.

We tender to his bereaved family our most heartfelt sympathy —

George Faulkner,
Robert T. Edes,
E. Peabody Gerry,
Henry W. Broughton,
Joseph A. Winkler,
Arthur P. Perry,
George H. Ingalls,
J. S. H. Sears,
Harold C. Ernst,
James P. Broidrick.

Dr. Joseph Stedman, of Jamaica Plain, died of myocarditis at Watkins Glen on the 16th inst. after an illness of about two years.

He was born in Medfield, Mass., October 13, 1835. Was educated in the schools of that town, at Groton Academy, and at the Military Academy at Norwich, Vt., from which institution he graduated in 1859.

While a student of medicine at Dartmouth College the Civil War broke out, and he enlisted in the famous Sixth Massachusetts Regiment, and was on duty at the Relay House near Baltimore for three months, the term of enlistment of that regiment. His military training at the Norwich University gave him immediate promotion from the ranks, through the various grades, to lieutenant-colonel before leaving the army. He returned to Medfield, raised a company (Co. B, 42d Mass. Reg.) of which he was made captain, and with which he saw service at New Orleans. At the expiration of his term of service he entered the medical department of the New York University and took his degree in 1864. Soon after that event came a call for four regiments from this State. In ten days Dr. Stedman had formed a three-years' regiment, which he took South, and with which he remained until the expiration of his term of service.

On returning from the army he settled in Jamaica Plain, and soon took a leading position as a physician and as a citizen. His interest in civil and professional matters is shown by the fact that he was a member of the Loyal Legion, Royal Arcanum, Knights of Honor, Home Circle, past President of Eliot and Jamaica Plain Clubs, a trustee of the Norwich University, one of the corporation of the Adams Nervine Asylum, a past master of the Eliot Lodge of Masons (holding the 32d degree), one of the founders and a trustee of the Jamaica Plain Dispensary, past president of the Sixth and Forty-second Regiment Associations, and for eleven years after the war was medical director of the First Brigade, M. V. M.

Dr. Stedman was also past vice-president and anniversary chairman of the Massachusetts Medical Society, past president of the Norfolk District Medical Society, and a member of the leading local medical associations.

Dr. Stedman's friends know of the deep and abiding interest he took in everything pertaining to his profession. Careful and persistent study, a constant attendance at medical meetings, a free intercourse with the leading minds in the profession, kept him abreast of the progress made in the care of the sick. Possessed of sound judgment and a good memory he was fertile in resources, an intelligent and judicious believer in remedies, holding fast to that which is good. He thus laid a safe foundation for his daily practice, became a good diagnostician, faithful and closely attentive to his patients to a marked degree. He was a trusted, respected, beloved family physician.

His family and his friends will reverence his memory, and the time will be far distant when his many excellent qualities of mind and heart will be forgotten by the people in Jamaica Plain and vicinity. G. W. G.

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Correspondence.

[Special Correspondence.]

VENEREAL DISEASES IN PARIS.

Paris, April, 1898.

Mr. Editor: — Paris presents probably the best field in the world for the study of dermatological and venereal disease. To the St. Louis Hospital alone come from 300 to 400 patients daily; and this, although the largest, is only one of several clinics in the city. One gets here a correctness and fineness of diagnosis obtainable nowhere else, because each master of a clinic vies with his neighbor in the minuteness of his work. Each knows that he is travelling in fast company, and cannot afford to loiter by the wayside. Fournier, Du Castel, Hallopeau, Jullien, Wickham, Saboraud, Brocq, Thibierge and Darier form a galaxy of which any city might well be proud, not even considering such men as Guyon, Janet and Delefosse, who devote themselves entirely to genito-urinary work.

The treatment of gonorrhea does not differ in principle very much from that which is used in Germany. It consists, in the first stages, of copious irrigations of the urethra. It differs somewhat, however, in the drug employed. M. Janet, who has written the latest monograph on the subject, extols the permanganate of potash, and, as a matter of fact, this is the drug most frequently used by Professor Guyon at the Necker Hospital. Janet acknowledges that sometimes the silver salts, such as argentomine, argonin, argol, etc., act where the permanganate seems to have lost its virtue, but says that in the great majority of cases the latter is the better remedy because of its greater facility of administration. It is always readily soluble, and does not easily alter in solution. This is not the case with the silver salts. Patients are educated to present themselves at the first indication of urethral trouble. Abortive treatment is then instituted, which consists in washing out the anterior urethra twice a day with a solution of the permanganate of potash, 50 centigrammes to 1,000 grammes. An irrigation of this strength must be made quickly in order to avoid too much pain, and too much congestion of the urethra. The hope of the abortive treatment is, not only to cure quickly, and to avoid the necessity of acute complications, but also to leave, after the discharge has ceased, a thoroughly healthy and unchanged urethra. After three or four days the irrigations are given every eighteen or twenty-four hours, and if there be no inflammation, the strength of the solution may be increased to .75 or even to one gramme to 1,000. By the ninth day, there should be practically no discharge, and irrigations may be spaced out and finally suspended.

M. Janet says that the education of his patients is such, that during the year 1897, he has had none but abortive treatments to make. His patients, have, little by little, spread the idea of the great danger resulting from a neglected gonorrhea, so that he is now consulted about the first suspected drop. If, unfortunately, the posterior urethra becomes affected, irrigations are still made, but the strength of the solution is reduced by one-half, and even then the affected portion of the canal should be first cocainized. In chronic discharges, nitrate of silver instillations (1 to 50 or 1 to 100) are generally used. I have never seen the Ultzmann catheter used here, although I believe that for the ordinarily skilled practitioner it is frequently a better instrument than the Guyon sound. In the first place it is of metal instead of rubber, and may be for this reason more easily and absolutely sterilized. This is a great point in urethral work. Again, it is inflexible, of proper curve, and of desired length to reach the posterior urethra and go no farther. The man of ordinary skill may thus be fairly assured of a clean instrument, and a remedy placed where it belongs.

Professor Jullien employs at the Prison St. Lazare pure ichthyol to destroy the gonococci in the urethræ of women. He winds a bit of cotton around a metal carrier, dips this into pure ichthyol, passes it into the urethra, and rubs it up and down against the wall of the canal with some violence. No pain seems to be caused by the application, and the microbes are certainly destroyed. He then places in the vagina a tampon well soaked in a solution of peroxide of hydrogen.

After an exhaustive investigation, Professor Fournier has concluded that the ratio of extra-genital chancres to those of the genitals proper is about one in every ten cases. He has published a record of 10,000 cases in which the ratio was about six or seven to a hundred. He thinks, however, that the proportion is actually greater, since chancres of special parts, such as the eye or ear, would probably go to specialists of those regions, and thus escape his observations, while genital lesions would necessarily gravitate to him. He believes, also, that most of the chancres of the face of men are due to the razor. In this connection, at the New International Congress of Hygiene and Demography held at Madrid last week, Dr. Ovilo, after studying the methods of propagation of contagious diseases, and particularly the long persistence of germs in certain objects, has among other propositions submitted the following:

"The instruments of *coiffeurs* are often the cause of ordinary skin diseases and of other more serious ones, such as lupus and syphilis. Each individual should use his own implements, and the authorities should endeavor to introduce a rational method of disinfection at the shops of the *coiffeurs.* The proprietors of the shops should in no case allow their employees to serve any customers bearing evident signs of disease."

A nice nut this for those who would refuse hospital treatment to syphilitics because their condition is *prima facie* evidence of immorality. Is it immoral, then, to be shaved, or to have one's hair cut?

Some six weeks ago, a young man walked into the clinic of the St. Louis, and exhibited a single, typical, indurated chancre on the free border of the prepuce. There was, as yet, no glandular involvement, and no roseola. Professor Fournier ordered circumcision, while explaining that he had never as yet seen any good result from abortive treatment by destruction of the primary lesion. However, his colleagues did it, and he felt that it was hardly just to the patient to allow any chance of avoiding syphilis to escape. Unfortunately, the patient disappeared after a week or two, and I have never been able to hear of any result of the treatment.

Under the theory that the first life of the chancre is devoted to local cell changes, and that general infection comes afterward, it is our duty to destroy either by excision or thorough cauterization every such lesion that comes under our observation at a sufficiently early time in its existence. The old-fashioned practice of cauterizing every suspicious ulcer of the penis may have been based on stronger clinical grounds than we now believe. Fournier has never been an advocate of this treatment, and in his later writings is less inclined than ever to uphold it. One of his strong objections, however, is that it transforms a benign, painless, self-healing lesion into a painful, inflamed one, with perhaps a disfiguring resultant scar. While I should be loath to cause a subsequent disfigurement, I think that the excision of the chancre might well be urged on prophylactic grounds, not as concerning the escape of the patient himself from syphilis, but on account of those with whom he might come in contact. The irresponsible owner of an indurated chancre would be absolutely unable to have sexual intercourse, and the production of a painful lesion might have such an effect on his mind that he would better appreciate the gravity of his condition, and give much closer attention to his subsequent treatment. A distinct good to the community would thus result from a procedure which might be absolutely useless to the individual patient.

(*To be continued.*)

RECORD OF MORTALITY

For the Week ending Saturday, May 14, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Scarlet fever.
New York . .	3,438,899	1282	470	9.76	20.08	1.60	3.60	2.08
Chicago . . .	1,619.226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	430	134	5.98	12.88	1.15	4.14	1 38
St. Louis. . .	570,000	189	—	2.65	26.50	.53	2.12	—
Baltimore . .	550,000	196	66	6.63	13.77	.51	.51	.51
Boston . . .	517,732	200	53	5.00	16.50	2.50	—	—
Cincinnati . .	405,000	107	—	4.65	9.30	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	89	32	20.16	11.20	7.65	2.55	—
Washington .	277,000	120	35	12.75	13.60	1.70	1.70	.85
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	50	9	8.00	18.00	4.00	4.00	—
Worcester . .	105,050	45	18	15.54	17.76	—	4 44	2.22
Fall River . .	95,919	34	7	—	11.76	—	—	—
Nashville . .	87,754	32	6	9.39	3.13	6.26	—	—
Lowell . . .	87,193	25	14	12.00	10.00	—	4.00	8.00
Cambridge . .	86,812	23	4	4.35	21.75	4.35	—	—
Lynn	65,220	13	2	7.69	7 69	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	21	6	4.76	4.76	—	—	—
Somerville . .	57,977	16	1	6.25	6.25	—	—	—
Lawrence . .	55,510	15	8	6.66	6.66	—	6 66	—
Springfield . .	54,790	19	4	10.52	5.26	—	5 26	—
Holyoke . . .	42,364	14	7	35.70	—	7.14	—	—
Salem. . . .	36,062	13	4	—	13.58	—	—	—
Brockton . .	35,853	10	3	—	—	—	—	—
Malden . . .	32,894	6	1	16.66	16.66	16.66	—	—
Chelsea . . .	32,716	11	3	9.09	9.09	—	—	—
Haverhill . .	31,406	11	4	27.27	27.27	9 09	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	7	5	28.56	42.84	—	14.28	—
Taunton . . .	27,812	11	2	—	—	—	—	—
Quincy . . .	22,562	9	1	—	33.33	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	7	1	14.28	—	14.28	—	—
Everett . . .	21,575	6	2	33.33	16.66	—	—	—
North Adams .	19,135	—	—	—	—	—	—	—
Northampton .	17,418	—	—	—	—	—	—	—
Chicopee . .	17,368	6	3	—	16.66	—	—	—
Brookline . .	16,164	3	1	—	—	—	—	—
Medford . . .	15,832	3	1	—	33.33	—	—	—

Deaths reported 3,068; under five years of age 912; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 274, acute lung diseases 513, consumption 196, diphtheria and croup 87, diarrheal diseases 47, scarlet fever 37, measles 29, cerebro-spinal meningitis 29, typhoid fever 19, whooping-cough 18, erysipelas 8.

From measles New York 17, Philadelphia 5, Baltimore and Washington 2 each, Boston, Cincinnati and Haverhill 1 each. From cerebro-spinal meningitis Washington 8, Baltimore 6, Worcester and Holyoke 3 each, Everett 2. From typhoid fever Pittsburg 5, New York and Cincinnati 4 each, Baltimore 2, Boston, Nashville, Somerville and Holyoke 1 each. From whooping-cough New York 12, Philadelphia 2, Boston, Cincinnati, Pittsburg and Springfield 1 each. From erysipelas New York 4, Boston, Worcester, Chelsea and Waltham 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending May 7th, the death-rate was 17.4. Deaths reported 3,750; acute diseases of the respiratory organs (London) 226, measles 157, whooping-cough 114, diphtheria 50, diarrhea 34, scarlet fever 29, fever 23, small-pox (Gateshead) 1.

The death-rates ranged from 10.9 in Croydon to 26.2 in Liverpool; Birmingham 18.8, Bradford 16.5, Cardiff 12.9, Gateshead 20.1, Hull 14.1, Leeds 18.3, Leicester 16.0, London 16.9, Manchester 20.4, Newcastle-on-Tyne 20.8, Nottingham 16.3, Portsmouth 12.6, Sheffield 17.8, West Ham 12.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 14, 1898, TO MAY 20, 1898.

The following named officers are detailed to represent the Medical Department of the Army at the annual meeting of the American Medical Association to be held in the City of Denver, Col., June 7 to 10, 1898: Lieut.-Col. Alfred A. Woodhull, deputy surgeon-general; Major Curtis E. Munn, surgeon.

Acting Assistant Surgeon Jose M. Delgado, U. S. A., will proceed from this city to Tampa, Fla., and report for duty with the U. S. troops at that place.

Acting Assistant Surgeon Douglas F. Duval, U. S. A., will proceed from this city to West Point, N. Y., and report for duty at the U. S. Military Academy.

Acting Assistant Surgeon S. Melville Waterhouse, U. S. A., will proceed from this city to Fort Hamilton, N. Y., and report for duty at that station.

Major William B. Davis, surgeon, is assigned to duty in charge of the general hospital at Fort Myer, Va., in addition to his duties as surgeon at that post.

Acting Assistant Surgeon David Baker, U. S. A., will proceed from Waltouville, Ill., to Fort Thomas, Ky., and report for duty in the general hospital at that place.

Acting Assistant Surgeon George H. Richardson, U. S. A., will proceed from this city to San Francisco, Cal., and report in person to the commanding general of the expedition to the Philippine Islands, for duty.

Acting Assistant Surgeon Arthur Jordan, U. S. A., will proceed from Richmond, Va., to Mobile, Ala., and report for duty with troops in the field at that place.

Major William H. Corbusier, surgeon, is relieved from duty at Angel Island, Cal., and assigned to duty as acting medical purveyor of the expedition to the Philippine Islands.

Captain Charles B. Ewing, assistant surgeon, will proceed at once to New Orleans, La., and report to the commanding officer, 5th Cavalry, for duty.

Acting Assistant Surgeon Frederick J. Combe, U. S. A., will proceed from Brownsville, Tex., to Tampa, Fla., and report for duty with troops in the field at that place.

Acting Assistant Surgeon Clarence J. Manly, U. S. A., will proceed from this city to Fort Thomas, Ky., and report for duty in the general hospital at that place.

Acting Assistant Surgeon Ira A Shimer, U. S. A., will proceed from this city to Fort Myer, Va., and report for duty in the general hospital at that place.

A contract having been made with Dr. A. D. McArthur, of Littleton, Col., for duty as acting assistant surgeon at Fort Logan, Col., he will proceed to that post and report to the commanding officer for duty, to relieve Acting Assistant Surgeon Carroll E. Edson, whose contract is about to terminate.

Captain George E. Bushnell, assistant surgeon, is relieved from duty as attending surgeon and examiner of recruits at Boston, Mass., and will report in person to the Surgeon-General of the Army, for duty in his office.

The following named medical officers, in addition to their present duties, are assigned to duty in charge of the general hospitals at the places opposite their respective names: Lieut.-Col. William H. Gardner, deputy surgeon-general, Fort Thomas, Ky.; Major Blair D. Taylor, surgeon, Fort McPherson, Ga.

Acting Assistant Surgeon George H. Penrose, U. S. A., will proceed from Salt Lake City, Utah, to Fort Douglas, Utah, and report to the commanding officer for duty at that post.

Acting Assistant Surgeon Amos W. Barber, U. S. A., will proceed from Cheyenne, Wyo., to Fort D. A. Russell, Wyo., and report to the commanding officer for duty at that post.

Acting Assistant Surgeon H. P. Jackson, U. S. A., will proceed from Charleston, S. C., to Key West, Fla., and report in person to Major William R. Hall, surgeon, in charge of general hospital at that place, for duty.

Acting Assistant Surgeon Charles K. Cutter, U. S. A., now on duty at Boston, Mass., is assigned to duty as assistant to the attending surgeon and examiner of recruits in that city.

Acting Assistant Surgeon Maynard G. Burgess, U. S. A., will proceed from this city to Mobile, Ala., and report in person to the commanding general of the troops at that place for duty.

Major Robert H. White, surgeon, is relieved from duty at the Presidio of San Francisco, Cal., and will report in person to the commanding general of the expedition to the Philippine Islands for duty as chief surgeon.

Major Edward B. Moseley, surgeon, is relieved from duty at Benicia Barracks, Cal., and ordered to Presidio of California, relieving Major Robert H. White, surgeon.

RATES FOR THE DENVER MEETING.

The Committee on Transportation announce that the New England Road and Trunk Lines have decided on a fare and one-third, certificate plan. Tickets on sale three days before meeting, and to be used for return trip not later than three days subsequent to the meeting, Sundays excepted. They grant no stop-over on diverse routes returning. The Central and Western Associations grant a one-fare rate for round trip, *plus* four dollars and two dollars respectively, for diverse routes returning.

Cost of individual trips in Trunk Lines territory, New York to Denver and return, transportation, $64.75, Pullman $22.00, meals (estimated) $15.00, making total round trip $101.75, intermediate points in proportion.

The Pennsylvania Railroad will furnish special train, consisting of combined baggage and smoking car, dining car, sleeping and observation car, to run through from Jersey City to Denver and return, providing transportation, Pullman berth, meals in dining car, both going and returning, the trip to be made without stop-over *en route*, for the following:

Round trip from New York, $95.00, with proportionate rates for other stations; provided at least 50 passengers or more constitute the party from the Trunk Lines or New England territory. The route of the special train, going and returning, is to be *via* Pittsburg, St. Louis and the Missouri Pacific Railroad, to Denver. The special train returning, however, will, if desired, run over the Union Pacific Railroad, from Denver to Omaha, arriving at 7 A. M. and leaving at 9 P. M., thereby giving fourteen hours at Omaha. For this privilege an additional charge of $4.00 will be made. The special must leave New York, June 4th, at 2 P. M., arriving at Denver, June 7th, 6 A. M.

Those desiring to travel by the Pennsylvania Special should communicate at once with their local Pennsylvania agent, or with George W. Boyd, General Passenger Agent, Philadelphia, who will arrange for tickets and Pullman space. The special will not be run unless fifty passengers are secured out of the territories above stated.

H. L. E. Johnson, M.D.,
Chairman, Committee Transportation.

THE AMERICAN MEDICAL ASSOCIATION.

Denver Meeting, June 7–10, 1898.

Ladies' headquarters will be at Unity Church, where they will be received by the wives of physicians of Denver. Arrangements have been effected for their entertainment during their visit, and committees will escort the visiting ladies to the various points of interest in Denver.

On Friday, June 10th, a complimentary excursion to Idaho Springs and around the loop will be given by the Colorado State Medical Society. At Idaho Springs, the Association will be entertained by the citizens.

On Saturday, a complimentary trip will be made to Colorado Springs, where the Association will be entertained by the local physicians and citizens. Visits will be made to all points of interest in the vicinity. Arrangements will be made for trips to Pike's Peak and the celebrated mining camp of Cripple Creek at low rates of fare.

At a date to be determined, special trains for Glenwood Springs will leave Colorado Springs *via* the Denver and Rio Grande Railroad and the Colorado Midland Railroad. Tickets $5.00, good going *via* one railroad and returning the other, and for ten days from date of issue. The trip to Glenwood is one of the most attractive in Colorado, giving excursionists a view of some of the finest scenery in the Rocky Mountains.

Special hotel rates will be given by the Hotel Colorado and other hotels of Glenwood Springs. The springs, baths and swimming pool will be free to the Association.

Special cars will be hauled on the Colorado Springs train and the Glenwood Springs Special, only when handed to the railroads with their full capacity.

Section Dinners. — The following Section Dinners will be given on Tuesday, June 7th, at 7.30 P. M.: Practice of Medicine, Metropole Hotel; Surgery and Anatomy, Obstetrics and Diseases of Women, Ophthalmology, Brown Palace Hotel; Laryngology, L'Imperiale Hotel; Materia Medica, Pharmacy and Therapeutics, Cutaneous Medicine and Surgery, Windsor Hotel; Diseases of Children, The Albany Hotel; Neurology and Medical Jurisprudence, University Club; Stomatology, St. James Hotel. That satisfactory arrangements may be made for dinners, it is essential that all members who expect to be present notify E. C. Rivers (16th and Stout Streets, Denver), the Chairman of the Committee on Section Dinners, as soon as possible and not later than June 4th.

C. E. Edson, M.D., *Assistant Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The X-Ray from a Medico-Legal Standpoint. By R. Harvey Reed, M.D., Columbus, O. Reprint. 1898.

A Clinical Study of Kryofine. By Sidney V. Haas, M.D., and J. Bennett Morrison, M.D., New York. Reprint. 1898.

Original Articles.

HOW RUSSIA CARES FOR HER FOUNDLINGS.[1]

BY J. L. HILDRETH, M.D., CAMBRIDGE, MASS.

One of the most perplexing problems of the present day — perplexing not only to the professional philanthropist but to the private giver — is the problem of alleviating distress without at the same time encouraging vice. I have been interested of late in noticing how this problem — which perhaps some of us had thought a modern one — has attracted attention and provoked discussion in countries and ages far removed from our own. I was led to this line of thought by some studies in connection with the Moscow Foundling Home, which I visited when in Russia last summer, while attending the sessions of the International Medical Congress.

The Imperial Foundling Home of Moscow is the largest institution of its kind in Europe, giving refuge annually to 17,000 infants abandoned by their mothers. The buildings cover an area of 81,000 square metres, and accommodate 7,000 persons. The approach to the entrance of the Home from the public street is between rows of fine trees, which must usually present a beautiful appearance, although at the time of our visit they were suffering from nearly two months of drought. The enclosure is surrounded by a high wall, constructed, as is also the oldest of the buildings, from the materials of the ancient walls of Moscow, demolished in the reign of the Empress Elizabeth. A large arch forms the entrance.

The Administration Building — the oldest building on the grounds — is, with a few of the adjacent wards, all that is shown to visitors except by special permission. On entering, we were received by a porter in uniform of vivid blues and reds — slightly resembling, in his dress and bearing, the austere guardian of the Bank of England — and shown by him into the visitors' room. There we were met by one of the visiting physicians who greeted us most courteously, although he was evidently perplexed as to our nationality, seeming to suppose that all English-speaking persons must come from England. I may say, in passing, that the Russian physicians whom we met at this and other hospitals impressed me, by both their faces and bearing, as men of a high order of ability.

By the visiting physician we were introduced to a resident female superintendent, who spoke English fluently, much to our comfort. She piloted us at once up several flights of iron stairs to one of the wards for infants. The ward was scrupulously neat and clean, and well lighted by rows of long windows, on opposite sides, reaching almost from floor to ceiling. The floors were of hard wood, and partially covered by long strips of matting. Down the centre of the ward ran a double row of cribs, placed end to end. There must have been nearly 200 infants in this ward, most of them less than two weeks old. On both sides were the nurses, numbering one-third or one-half as many, dressed after the fashion of the Russian peasant, having a white chemisette with a red cotton overdress, with white stockings and felt slippers, and nearly all wearing cotton kerchiefs tied about the head. They all looked clean and wholesome, and well-fed. Some were holding babies in their arms and nursing them, and had loose cotton squares thrown over their shoulders and over the babies' heads. The ladies in our party commented upon their kindly treatment of the children, and remarked that they held them as if they loved them. This would not be at all surprising, since it is an open secret that many a nurse is really the mother of the child she cares for; the conditions of admission to the home being so easy that it is not an uncommon thing for a married woman in needy circumstances to leave her child at its door at night, apply there for a position as wet-nurse the next morning, and perhaps before another day closes find and secure her own little one again, to receive board, lodging and wages in return for her care of it while it remains in the home. But of this I shall speak again later.

As we entered the ward, each nurse rose with her baby, and remained standing until we left. In one corner of the room were piled mattresses, which at night are placed on the floor in front of the babies' cribs for the nurses to sleep upon. These mattresses are filled with straw, which is renewed every three months. The bed linen of the nurses is changed once a week; that of the infants once a day.

We were shown these babies somewhat in detail, and when nearly through were presented to the "show baby" — one which did not impress us as very wonderful, except that it was rather prettier than the rest, and black-eyed, while the eyes of nearly all the others were blue. These babies were all dressed in swaddling clothes, with their arms bound to their sides. This method is discarded when the baby is taken away from the wet-nurse. The healthy infants receive a change of these clothes about eight times in the twenty-four hours: the sick ones as often as is necessary, up to fifteen times. The two sexes are distinguished by the boys having blue and the girls pink cards, bearing their names and numbers, fastened about the neck; also the same color upon some part of their clothing. It seemed odd to find, in far-off Russia, the very same assignment of colors as among the petted babies of our own land.

The scene was certainly unique, but not inspiring. The nurses were of the stolid peasant type, and their faces, though kindly, were heavy, and showed little expression either of hope or fear.

Adjoining this we were shown a smaller ward occupied by orphans of "noble parentage," whose fathers had lost their lives in the service of the State. Just what "noble" meant in that connection we could not then learn. They were attractive-looking, most of them from four to six years old, having playthings, and presenting very much the appearance of children in an ordinary nursery.

The second general ward visited was used for sick infants and children, and was capable of accommodating nearly as many as the first ward, but there were not many in it at the time of our visit, because all the sick ones that were not too sick to bear the journey had been sent into the country.

From here we passed through long corridors to one of the rooms devoted to the children's baths. Through the centre of one portion of this room was a huge metallic tank, supplied with both hot and cold water, where the babies were washed. One nurse washed them, another dried, and a third put on the swaddling clothes. This was done as automatically and regularly as though the nurse was a machine and the baby a piece of wood or metal to be put through some process, every one in precisely the same way, the entire process occupying only about three minutes. It was noticeable how little they cried, and how little attention the washers and dressers paid to their squirming, kicking and occasional screaming. All this was very interesting, mainly because it was so different from the way a single baby with us is cared for, when taking its bath. One of our party remarked that he supposed, by the time we got back to Boston, we should find that the inventive genius of that town had produced a washing machine for washing and dressing babies, just as table crockery is washed by machinery in large hotels.

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[1] Read before the Cambridge Medical Improvement Society, April 25, 1898.

From the bathing-room we passed through other long corridors, and down flights of stairs to the lower part of the building where the kitchens are located. These were similar to the kitchens of any large, well-regulated hotel, neat and orderly, all the work being done by men wearing white aprons, and paper caps on their heads. We were invited to taste of the cookery, and those who ventured the experiment found the "black bread" — the staple of peasant diet — more palatable than it promised.

The last place visited was the store-room where clothing for babies, nurses and attendants was kept. It seemed like the quartermaster's department of an army, only, instead of great coats in huge piles, with trousers and shoes to match, there were the swaddling clothes, small felt or knit shoes, tiny stockings, and the diminutive pinning-blankets and head-fixings.

The report of the Home for 1893 — the latest I was able to procure — places the number of nurses' outfits owned by the institution at 5,000. The assortment of infants' clothing includes 1,700 bands and 40,000 coverlids. The entire stock represents a capital of 200,000 roubles, about $104,000 (Report, p. 21). Of metal cradles, each draped by a muslin curtain and provided with a mattress covered with oil-cloth, the hospital owns 15,000. For those prematurely born, there are 45 heatable cradles, each containing a double metallic receptacle, the intervening space being filled with hot water. The hospital is also provided with a Farinier-Overt incubator, ordered from Paris.

Before leaving, we were very politely asked to register our names and residences, and they did not forget to show us where we could deposit our rouble, more or less, as the spirit moved us, to help these poor but fortunate unfortunates.

Naturally, the cursory character of our inspection left much of our curiosity regarding this great institution ungratified. But the report before referred to supplemented our personal observations very acceptably, in spite of its curious English and frequent typographical errors. Although we had noticed no lack of ventilation in such parts of the building as we visited, the report refers to defects of that nature.

"Large as the nurseries for the sucklings undoubtedly are," it says, "they were originally meant to hold only 500 infants, and as a matter of fact there is generally double that number in them. In all the nurseries occupied by the infants there are 873,964 cubic feet of air: each infant and nurse receiving but 977 cubic feet, that is to say, a third less than 1,500 feet, which a rational hygiene demands, and the air from the corridors offers but a feeble compensation for this." Partly to this defective ventilation, and partly to colds caught on their way to the Home, is attributed the pneumonia which causes the death annually of nearly seven per cent. of the nurslings.

The entire annual mortality, I may say here, ranges from 20 to 43 per cent.: "gastro-enteritis" being accountable for five per cent. and pyemia for 13. The mortality in cases of pyemia has diminished considerably since antiseptic bandages have been used on the umbilical sore; but a large number of infants arrive at the Home with symptoms of purulent infection already clearly noticeable.

Of the total number brought to the hospital, 20 per cent. are sick at the time of admission; 30 per cent. of weak constitution, weighing below the average (3,000 grammes, or about 6.6 lbs.); five per cent. very weak (debilitas congenital); four per cent. of premature birth (600 of these every year); and eight per cent. syphilitic, syphilis being very common in Moscow. Of this number of ailing, delicate children, an annual average of 100 die at the hospital only a few hours after their admission.

It should be said that all these statistics of mortality give an unfair impression, if one does not bear in mind that Russia is one of the countries where the average rate of mortality is highest. The climate is unfavorable to health — particularly to the health of children — and the diet of the poorer classes is too meagre to counteract its rigors successfully. The present rate of mortality at the Moscow Foundling Home is a gain over that of former years, when it ranged from 50 to 60 per cent., and compares favorably with that at Vienna, which has been known to rise as high as 75 per cent. The most shocking death-rate in the records of foundling hospitals is that reported from Dublin, where, for a series of years preceding 1835, four out of every five perished. The Dublin Hospital was closed soon after this, its opponents urging that it had not succeeded in saving life. No doubt it had to contend with some of the very same conditions which in Russia are so unfavorable to the health of childhood. The Paris and London Hospitals, on the other hand, represent a less impoverished population, and can boast a much lower death-rate.

Certainly there is little fault to be found with their condition when once the babies arrive within the sheltering walls of the Moscow Home. Great care is exercised with regard to cleanliness. Floors, ceilings and walls are covered with oil paint, which facilitates antiseptic cleaning. In summer the children are taken to barracks provided for this purpose, so that they may get the benefit of the fresh air to the utmost. The occasion is improved to thoroughly clean and disinfect the wards. Slops and the contents of the water-closets are conveyed through metal pipes into tiled cisterns; the liquid, being separated from the solid, is filtered, purified, and in this shape flows into the river; the solid portion is put into carts and carried outside the city. The bathing facilities for the infants have been described already. The baths of the wet-nurses are also carefully regulated, there being a bathroom especially for their use, although in summer they are required to bathe in the river every morning.

The report finds the lighting and heating of the hospital less inadequate than its ventilation. "Light," it says, "is freely distributed. Each nursery has thirteen large windows, of which five have large squares, movable for airing purposes, and three have a metal network on Murray's system. The heating is done by means of Dutch stoves. During the winter, the temperature is maintained at an average of 68° F, and in the section for children prematurely born it is 72.5° F. Near each nursery there is a metallic drying oven, where the swaddling clothes of the children are dried and aired."

But what are the requirements for admission to all this warmth and comfort? The Home was originally intended for illegitimate children, deserted by their parents, and the larger proportion of those whom it shelters are still such. But since 1837, in accordance with the ukase of the Emperor Nicholas, a small part of the establishment has been reserved for the maintenance and education of legitimate orphans — doubtless the same who were shown to us as "children of noble parentage" — whose parents have served the State in a military or civil capacity. The Home is thus divided into two parts, one for these orphans, the other for foundlings. The Home also makes temporary provision, in cases where extreme poverty can be shown, for legitimate children whose parents are living: but the number so received — since we are not now speaking of those smuggled in under pretence of illegitimacy — is very small, averaging only about 200 out of the 17,000 received annually. Such children remain under the protection of the Home for only one year, whereas the real "foundlings," as will be seen later, enjoy the advantages of its supervision until they reach their majority.

The formalities at entrance are exceedingly simple, as I have before intimated. The Home stands open, day and night, to receive any child under one year old, who is brought with a certificate of baptism. If the parents wish to hide the secret of birth, they may present the document sealed, but in such cases a payment of 25 roubles ($12) is demanded. Even the certificate of baptism may be dispensed with, if the babe is newly born, and the fact attested by the presence of the navel-string. Eighty per cent. of those received are brought in this condition. The number of children received daily averages 45, but often runs as high as 70 and over.

Upon admission, each child is registered and given a number engraved on an oval-shaped bone medal which is hung around its neck, and the person who brings the child is given a receipt bearing the same number and also the date of admission. The swaddling clothes and other linen are returned to the person bringing the child, and it is immediately put into a hospital outfit. It is then weighed, and its length, chest and head measured. All these details are inscribed on a card, which is kept with each child during its stay in the Home. As has been said, these cards are blue for the boys and pink for the girls, and on them is written also the name of the child, its number, age, date of birth, date of admission, and — if known — the name of the place it was brought from. Later will be added the name and number of the nurse, the date of vaccination, and the increase, from time to time, in weight.

After these preliminary formalities, the child is bathed, the umbilical sore treated with such antiseptics as it may require, and a compress applied. As a safeguard against purulent ophthalmia new-born babes have their eyes treated with a two-per-cent. solution of nitrate of silver, according to the formula of Credé. In cases where the existence of syphilis is suspected, the child is not given to a wet-nurse, but is fed from the bottle.

Most of the foundlings, however, are intrusted to wet-nurses. These are usually girls from the suburbs of Moscow, or peasants from the adjacent governments. Many of them, undoubtedly, are the mothers of foundlings. The applicants for such positions are subjected to a careful medical examination, registered, and provided with the uniform of the service, their own clothes being stored for them until they leave the Home. Their first duty is to take a thorough bath, and they are not given an infant to care for until they have been in the institution over one night.

There are, on the average, 14,000 nurses yearly passing through the Moscow Home; but even this enormous number is inadequate — as will be seen on recalling the number of children received, 17,000 — and it is often necessary to entrust two children to one nurse. Under such circumstances, the nurse receives extra rations and beer, and extra pay. During the summer months, when other work for women is plenty, as well as at the Christmas and Easter seasons, the scarcity of nurses is particularly felt. Artificial nourishment — boiled cow's milk in equal parts with barley water (Jacobs' mixture) — is then resorted to; but the mortality among the children always increases pitifully at such times, sometimes reaching 60 per cent.

(To be continued.)

THE PATHOLOGY, GENESIS AND DEVELOPMENT OF SOME OF THE MORE IMPORTANT SYMPTOMS IN TRAUMATIC HYSTERIA AND NEURASTHENIA.[1]

BY MORTON PRINCE, M.D.,

Physician for Diseases of the Nervous System, Boston City Hospital; Clinical Instructor in Diseases of the Nervous System, Harvard Medical School.

I. FATIGUE.

The mode of development of individual symptoms of the traumatic neuroses has received very little attention at the hands of writers. While in organic diseases the relation of symptoms to their underlying causes has been for the most part worked out, very little attempt has been made to do this in so-called functional diseases of the nervous system. This will prove to be a fruitful field for future research. At present we are not in a position to refer many of the symptoms of the traumatic neuroses to a pathological basis.

Some symptoms are what we may call essential factors of a neurosis, and depend in some way upon physiologico-anatomical conditions of which we are at present ignorant, and upon the nature of which we can only speculate. Such, for example, are hysterical paralysis, anesthesia, changes in reflexes, etc. Given one of these essential symptoms, we can almost predict the presence of the others. On the other hand, in almost every traumatic case, there are other symptoms which are purely fortuitous, and depend upon the particular individual conditions of the accident, or upon the particular make-up of the individual's organization. These may, or may not be present in any individual case. Many such symptoms may be enumerated — pain, headache, some forms of fatigue, gastric symptoms and a host of others. The individual circumstances upon which the presence of these depends, are blows, sprains, severe fright, etc., which, of course, vary greatly in their nature in individual accidents. It is this last class of symptoms which will be for the most part the subject of this paper.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, May 18, 1898.

Inasmuch as traumatic hysteria and neurasthenia do not differ in their nature from the same neuroses when due to other causes than traumatism, I have made use of non-traumatic cases when it seemed advantageous to do so, for the purpose of illustrating and studying the pathology of individual symptoms.

Fatigue. We know little of the nature or origin of the *feeling of fatigue* which occurs in true neurasthenia and hysteria, or, for that matter, when occurring normally after exertion. We merely know that it is a feeling that is generally induced, but not always, by expenditure of effort.

Undoubtedly a study of physiological fatigue would throw light upon the nature of pathological fatigue; and we can learn something from the experiments of Mosso, Lombard and others; but it can hardly be said that these observations more than indicate the lines on which we must seek an explanation.

Physiological researches have shown that the diminished contractile power of a fatigued muscle is due in part to the consumption of the energy-liberating compounds in the muscle cells, and in part to the accumulation in the muscle of chemical substances that poison the muscle. If these toxic substances be washed out, the muscle regains its power of contraction; but in fatigue, in consequence of this accumulation, the muscle responds with increasingly diminished force to a given stimulus, or requires a stronger stimulus to induce a given contraction. Mosso[2] has further shown that the circulating blood of a fatigued animal is defiled by the accumulation of poisonous substances, and that this blood is capable of inducing fatigue if injected into the veins of another animal.

But we must distinguish between the *sensation* of fatigue and that fatigue of the muscles which is a diminished capacity to respond to nervous impulses of a given strength. The term fatigue is used to mean two distinct sets of phenomena which may or may not coexist. As used by the physiologists, it is applied to the diminished capacity for muscular work following muscular contractions, and then it is a motor phenomenon. But clinically this term is applied not only to this incapacity for mechanical work, but also to the sensory state or feelings of fatigue, or tire, which may be present whether mechanical work has been done by the nervous system and muscles or not. the toxic waste products may be a factor in the causation of the sensation of fatigue which may result as well from mental work, and therefore be a consequence of nervous cell activity alone; but this does not necessarily exclude the toxic action of the products of cell metabolism, as these toxic waste products probably also accumulate in nervous tissue. But as yet there is no evidence that the sensation of fatigue and the diminished capacity for muscular contraction are due to the same factor, or at least always so. In fact, there is every reason to believe that at times the former must be entirely independent of the toxic effect of any substance produced by muscular activity; for it is a clinical experience that sensory fatigue may be present when there has been no muscular activity, as in the morning after a night's sleep, and under other circumstances (after emotion).

Now, it is generally assumed by clinicians that in neurasthenia and hysteria fatigue represents the same exhaustion and mechanical incapacity for work that occurs under physiological conditions and which can be demonstrated in the laboratory. But all clinical observation shows that this is a false inference. Clinical fatigue is observed under conditions that make it difficult to suppose that there has been either a decrease in energy-holding compounds or an accumulation of toxic waste products, and we must assume that the state of fatigue must be due to some other condition. For this reason I have thought it well to consider, although superficially, some of the aspects of the problem here, recognizing that it is impossible to give an answer at present to some of the questions involved.

Fatigue may be a manifestation of or physiological sequence of emotion. It is well known that a violent emotion, like fear or anger, may result in a condition of exhaustion that subjectively simulates physiological fatigue, and there may be motor weakness as well as the feeling of exhaustion. This has been well described by Féré (La Pathologie de Emotions).

Sometimes even mild emotions are followed by a complete feeling of exhaustion which comes on suddenly, out of a clear sky as it were, in the midst of a feeling of well-being, in persons otherwise well and strong, and which renders them for the moment incapable of work. As an example, I may cite the case of a strong and healthy man, excepting that he sometimes suffers from a pure habit emotion which comes upon him when he is placed in certain, to him, embarrassing situations. At such times, with the evolution of the emotion, there comes over him, as he describes it, a feeling of intense fatigue and exhaustion, as if he had gone through a serious illness, or a night without sleep. He claims that he is able only by the use of the strongest will-power and effort, which results in further exhaustion, to continue his work at such times. In neurasthenics very slight emotions will have the same result. The explanation of fatigue of this kind must be psychological. To this I will return.

But even in muscular fatigue the question remains: Is the sensation of fatigue due to the action of the poison on the muscles, by which indirectly the brain is excited to have the feeling? or is it due to the action of the poison on the sensory centres of the brain itself? or is it a result of the effort of the brain to stimulate the weakened muscles? or is the fatigue sensation due to some other mechanism, like a rearrangement of cerebral associations, such as probably occurs in hysteria? This is a problem of physiological fatigue which still remains to be determined. At present I think we can only say that the sensation of fatigue is a feeling that is generally induced — but not always — by expenditure of effort, and that, under physiological and some pathological conditions, it is an index of what, in the want of precise knowledge, we call exhaustion.

Exactly why the sensation of fatigue occurs, or what this is, is not known. The observations of Hodge, though often quoted, really throw little light on the question. Hodge showed that after physical exertion certain changes, recognizable to the eye, could be demonstrated in the nerve cells, but such changes in no way give any explanation of the sensation of fatigue. In neurasthenia, for some reason, the feeling of fatigue is brought on by an amount of exertion which would not be felt by the same individual in health. The conditions thus approximate those of old age in healthy persons, and the physiologico-anatomical basis may be the same. In such cases we must assume that the energy-holding compounds have been early exhausted or the waste products have not been normally carried off, or both. In the normal individual, experiments have shown that the nerve and muscle cells have the capacity to recharge themselves, or restore their expenditure of energy, to use metaphorical terms, and to discharge into the blood current the waste toxic materials during activity; but this power exists only within certain limits, and after a certain amount of expenditure of effort is lost — that is, muscular fatigue occurs. As I have said, the feeling of fatigue in normal persons, and in many pathological cases, is an index of what is clinically known as exhaustion.

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[2] Mosso (La Fatigue, intellectuelle et physique) has also shown that the blood of a dog whose muscles have been tetanized by electrical stimulation, if injected into another dog, causes increased heart action and respiration.

But every clinician of experience must have observed that in many cases it cannot be an index of this condition, but is of purely psychical origin, a false sensation as it were, which stands in the same relation to true fatigue that psychical pains stand to pains that have their origin in physical changes in tissue. It would seem that the sensation of fatigue is capable of being excited centrally, by association with other feelings, and then becomes a quasi-hallucination, like many other subjective symptoms. In other words, in a very large number of cases of hysteria and neurasthenia, the feeling of fatigue is in no sense the expression of exhaustion, and in no way indicates that the muscles or nerve centres, or both, have been over-used or have not repaired themselves. This sensation in such cases is a pure habit symptom, or if not a habit symptom, one that is excited by central or other stimuli. The recognition of this fact is, from a therapeutic point of view, of the greatest importance; for when recognized it will often enable us to effect a cure of the patient that otherwise would be difficult.

Fatigue of this kind may be spoken of as false fatigue, and when present it is important that we refrain from measures which experience teaches tend to cultivate it and encourage its persistence. As evidence of the psychical character and falseness of the sensation of fatigue, I will cite the two following cases, which I select because they are at present under observation, and because they are examples of as extreme forms of hysterical neurasthenia as I have ever seen.

In one of these cases I had recognized the psychical nature of the fatigue complained of, and had always insisted upon its falseness to the patient; in the other I failed to recognize this, but had considered the case hopelessly incurable and had given that opinion to the friends. This second case seemed to be one of those bad nervous constitutions in consequence of which the patient lives a life of wretchedness and constant suffering with inability to do anything without distressing results. In both cases, after exhausting almost every other resource, I tried hypnotic suggestion.

The first, Mrs. X, went into light hypnosis; and the suggestion was given, amongst others, that her fatigue was entirely false and that she could exercise, etc., without feeling it. The result was that the feeling of fatigue immediately began to disappear; and after two or three sittings she was able to walk a couple of miles, ride a bicycle, take gymnastics, etc., without any feeling of tire, although previously walking a block completely exhausted her. Other sensory symptoms were removed in the same way.

The second case, Miss Y, who also suffered from distressing pains of various kinds, after one or two suggestions was able to walk one or two miles — more than I wished her to — although previous to this almost any mental or physical effort caused great fatigue as well as distressing pain. Such cases, of course, tend to relapse; but nevertheless the immediate disappearance of fatigue for quite extended periods of time after a few verbal suggestions can only be explained by their psychical origin. I am convinced that fatigue of this character is far more common than is realized by the profession in every-day cases of hysteria and neurasthenia. Statements of this kind are, of course, difficult to prove, and the only measure we have of them is the result of treatment; and this, in my own experience, has satisfied me of their correctness. On the other hand, the opposite of this is also true, namely, the failure to recognize this fact has, in my own hands as well as those of others, tended to cultivate a habit of fatigue and to prevent recovery.

As to the pathology of false fatigue, we are not yet justified in more than speculating about it. It is possible that this fatigue has a psychical basis similar to that fatigue and general weakness which follow some of the emotions and which are well recognized to be manifestations of these emotions. This has already been spoken of; while in normal individuals it is only very extreme emotions that are followed by this state, in neurasthenics it is not uncommon to see very slight emotional states followed by extreme prostration. A cross word, or disappointment, or a fit of anger, will induce extreme fatigue of this kind. In such cases there may be what Dr. Putnam calls a re-arrangement of the cerebral associations, an inhibition of certain cortical centres, and a reversion to less complex combinations. As a sequence of this process, clinical fatigue may result just as may anesthesia or paralysis, or it may be a manifestation of the emotions, as blushing and palpitation are manifestations and concomitants of certain ideas. Now the false fatigue of neurasthenia and hysteria may have an analogous basis, and in this case its disappearance under psychical influences would be explained by a restoration of the previous cerebral associations.

In other cases which are not uncommon, it seems as if the sensation of fatigue after exertion were made persistent through the general idea, instilled in the mind of the patient by friends and physician, that his or her disability is due to an organic though rather mystical disease process of some badly understood kind, and that the disease will be made worse and the patient's recovery retarded by anything that increases the discomfort of the patient. Very often such persons do not mind their symptoms, do not mind pain or fatigue, if they can feel assured that the induction of such fatigue will not in any way increase their disease and do them permanent injury. The physician does not always take in that in neurasthenia and hysteria the patient feels very much as a person with inflammation of the knee-joint feels regarding the use of his leg. He does not mind the pain so much as he does the fact that walking on the leg may do permanent damage from which he cannot recover.

So not a few cases of neurasthenia have admitted to me they would not mind fatigue and other symptoms if they could feel assured that doing things that bring them on would not do permanent damage. After assuring such patients of the impossibility of doing themselves any harm I have found frequently that the state of fatigue has disappeared. In such cases the sensation of fatigue is probably in some way indirectly the resultant of this false idea of the nature of the neurosis.

Probably allied to the fatigue following the emotions is that which is a very common manifestation of the hysterical state in association with various other stigmata like paralysis and anesthesia. With the development of the hysterical state after a nervous shock, the condition of fatigue at once appears. This is a false fatigue, in the sense that it is not the result of mechanical work as in physiological fatigue. Of course, it is a true fatigue, as is all fatigue, in the sense that the subject is incapacitated for work and feels exhausted; but there is no probable accumulation of waste products, and the fatigue may be readily removed by therapeutic agents. For this reason it is not likely that this fatigue is due to the exhaustion of energy-holding compounds. The mechanism is not plain, but it probably belongs to the same class of phenomena as hysterical paralysis and anesthesia, about the nature of which we are still in the dark. It may be that the physiological associations of the brain are such that the sensory cortical areas for fatigue are so associated with the motor areas that the inhibition of the latter necessarily excites the former, just as the same stimulus that induces palpitation of the heart will cause vaso-motor spasm, or it may have the same pathology as emotion fatigue.

(To be continued.)

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PATHOLOGY AND TREATMENT OF DYSMENORRHEA ASSOCIATED WITH ANTEFLEXION OF THE UTERUS.[1]

BY F. H. DAVENPORT, M.D., BOSTON.

In spite of a good deal of discussion of this subject, I do not believe the last word has been said, and I desire to give what I believe to be the cause of the symptoms which occur in connection with this affection of the uterus, and describe the treatment which I have found most efficacious.

By way of preface I would say that anteflexion of the womb is not a displacement of the organ, but a deformity. It is the persistence of a type which seems to be normal in fetal life. At that time, owing to the disproportionate size of the cervix and the crowding of the organs in the small pelvis, the body becomes bent forward just above the internal os. This is an almost constant condition before birth. As the child develops in the years before puberty, the increased room in the pelvis should, and usually does, admit of a straightening out of the organ, so that it assumes its normal position of moderate anteversion. If, however, there is a lack of proper development of the whole body from poor food, want of exercise, or constitutional delicacy, the womb shares in this faulty condition, and we have a persistence of the fetal type, namely, anteflexion. The association of this deformity with a lack of harmonious development of the whole system explains why in these cases the uterus is usually small, lacking in tone, and menstruation is very apt to come on later than the average age, and is often scanty.

The spirit of refined analysis, which is perhaps carried too far nowadays, has led to a division of anteflexion into three varieties, namely, of the body, of the neck, and of both body and neck. Such a classification is unnecessary, since where there are symptoms, they are alike in all varieties, varying if at all only in degree. The essential feature is a bend at or just above the internal os, so that the organ instead of having a slight curve throughout its whole extent, is bent at a more or less pronounced angle at one point. This bend can be appreciated by the examining finger in the vagina, the angle which the cervix and body make being sometimes so sharp that the finger lies in a groove with the body on one side in contact with the palmar surface of the finger, and the cervix against the finger-nail. The fundus can be felt through the anterior vaginal wall where the bladder lies. Associated with this flexion are other characteristics which deserve mention. I have already referred to the fact that the uterus is usually small and poorly developed. This is true of both body and cervix. Sometimes the organ is smaller in all dimensions; at other times it is of normal length, but the body is thin both antero-posteriorly and laterally. It feels as if it were drawn out, and stretched thin in consequence.

The cervix, besides being small, differs somewhat in shape from the normal. It is more pointed and conical, and the os externum is smaller and rounder.

On the passage of the probe two facts are noted as being quite constantly present: one is that there is a narrowing at the internal os, the other that the passage of the instrument by the internal os causes more pain than it should. The degree of narrowing of the canal at the inner os may be determined by the trial of several probes or sounds of different calibre. Having found the proper curve, which is sometimes a difficult matter, larger sounds are tried until there is a hitch. A little firm pressure will usually suffice to overcome the resistance. If the tissues are of normal consistency, the probe will pass on moderate pressure and without any abrupt giving way; if, on the other hand, as is not infrequently the case, the tissues in the immediate neighborhood of the inner os have become changed in consistency, and grown denser, there will be more resistance, and the probe will pass with a jerk.

The second fact observed in these cases is the increased sensitiveness to the passage of the sound. This is confined to the region of the os internum, and is not due to the stretching, since it is excited by the slightest touch of the finest probe. Just as soon as the instrument has reached the narrowest part, which is the point of flexion, the patient shows signs of considerable pain, and on being questioned will describe it as the same in character as that which she experiences when unwell. It is often accompanied by a feeling of nausea or faintness.

This establishes the diagnosis of anteflexion of the uterus with narrowing and sensitiveness at the internal os.

The history of these cases is singularly characteristic and typical. The dysmenorrhea shows itself at the first menstrual epoch, and persists with each recurring month. It may therefore, in a sense, be called congenital. As a rule, it gradually becomes more pronounced as time goes on, and proportionately harder to bear.

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[1] Read before the Obstetrical Society of Boston, February 15, 1898.

The ordinary history of a menstrual period is as follows: The pain usually begins with the flow. If there are prodromal symptoms, they are more a general feeling of increased nervousness, congestion of the head, and local discomfort rather than pain. With the appearance of the flow there is pain. This is usually felt in the lower abdomen, more rarely in the back. It is mainly a dull ache, with at times sharp exacerbations. Patients describe it variously, as a forcing, boring, twisting sensation. It increases in intensity for from six to twelve hours, maintains its height for a few hours, and then gradually fades away and disappears. The flow at first is scanty, abnormally so, and coincident with its increase comes the relief to the pain, so that by the time the flow is at its height the pain has usually gone. If the amount is greater in the beginning, there may be the formation of small clots. This fact usually modifies the character of the pain. It becomes spasmodic in character, simulating little labor pains, and the expulsion of a small clot is followed by temporary relief.

The pain may be very intense, amounting to agony, the patient writhing on the bed in vain attempts to get relief. Often there is nausea, sometimes vomiting. Frequent micturition is a very common accompaniment, and occasionally diarrhea.

For the first few years the amount of suffering does not vary much; but if there is any change, it is apt to be a slight increase in severity. After some years, the usual history is that with each succeeding year there is greater suffering. This may be partly due to the fact that after years of such intense periodical pain the power of resistance becomes lessened, and the recuperative force weakened. In youth, and in persons of a fair degree of health, the strain of the monthly attack may be well borne, and apparently completely recovered from, in a few days; but as time goes on, it becomes more and more difficult to rally, the strain becomes greater, the pain at the time seems more severe because the weakened nervous system bears it less well, and it takes the greater part or the whole of the intermenstrual period to recuperate. This means a gradual deterioration of the whole system and an impairment of the general health, which is a feature in many of these cases.

The other prominent symptom, which is of secondary importance only to the dysmenorrhea, is sterility. While pregnancy is not impossible in anteflexion, it is not likely to occur and in my experience it is the most frequent cause.

These various symptoms, particularly the dysmenorrhea, can be explained by certain facts in the pathology of this affection, a phase of the subject which we will now consider a little more at length.

The occurrence of pain in connection with an anteflexion of the uterus, and a narrowing of the canal, has led to the view that in consequence of the bending of the canal there is an obstruction to the free flow of blood from the uterus, and the pain is the result of the attempt of the organ to expel it. This form has therefore been called obstructive dysmenorrhea. Sometimes the term spasmodic has been added as expressing the same thing; as a fact, they are by no means the same. I question very much whether there is obstructive dysmenorrhea in the true sense of the term. It may be a temporary condition, as will be shown later; but the narrowing of the canal in itself is probably never sufficient to so obstruct the flow of blood as to cause the violent pain which is characteristic of this disease. Spasmodic dysmenorrhea, on the other hand, has a clearly defined and well recognized type where the blood is exuded in such relatively large quantities or under such conditions that it coagulates. The efforts of the uterus to force a small firm body through the narrowed and sensitive canal are accompanied by violent and spasmodic and intermittent pains, which are characteristic of this type of dysmenorrhea. This form, however, while often present in anteflexion of the uterus, is not confined to that condition, but may occur quite independently of it.

The explanation which in the light of the existing conditions seems to me to most adequately explain the pain is as follows: In the first place there is a distinct and real narrowing of the canal at the internal os. This is amply and clearly demonstrated by the passage of instruments. This narrowing is, however, never sufficient in itself to cause any real obstruction to the passage of the menstrual blood; when we reflect through how narrow and tortuous a canal fluid will find its way, and remember that at the time of greatest pain the flow is scanty, it must be evident that pure mechanical obstruction cannot play any rôle.

There are, however, two conditions present which are responsible for the pain. One is the swelling of the uterine mucosa which accompanies the flow, the other the condition of abnormal sensitiveness at the internal os. The swelling of the membrane while not sufficient to close the canal does undoubtedly narrow its calibre. We have seen that the tissues at the os internum are apt to be more rigid than normal and the nerves in an extremely hyperesthetic state. The increased congestion which accompanies the onset of menstruation and the tension of the tissues generally irritate the nerves and aggravate the pain. This is the case during the first few hours of the flow. Later the tissues become relaxed, and the canal to a certain extent straightened and the pain disappears. This accounts for those observations where the passage of the probe or sound during menstruation has shown a relaxed and more patulous condition of the canal. After a varying time from 12 to 24 hours, this relaxation has occurred, the flow is more profuse, and the pain has largely ceased.

It will be seen that I have not considered endometritis as an important factor in my explanation of the pathology of these cases. This is contrary to a large number of observers who look upon endometritis as the one essential feature, and ignore the importance of the narrowing of the canal. I do not deny that in a small proportion of cases endometritis may be present, and show itself by the usual signs of that disease, particularly increased discharge and tendency to bleeding, a result of the hyperplastic condition of the mucous membrane.

But in the majority of such cases, there are no such symptoms present. During the intermenstrual periods there are no local symptoms whatever. In fact I have been struck with the freedom from trouble which such patients enjoy except at the time of the catamenia. Possibly some observers may look upon the abnormal sensitiveness at the internal os as evidence of endometritis, but such a view seems to me untenable. The explanation which I have already given seems to me the reasonable one.

Our treatment should be directed to the solution of two problems: first, to enlarge and straighten the canal; second, to diminish the sensitiveness at the inner os. It is hopeless to expect that the uterus can ever be made normal and that the flexion can be absolutely cured. The most that can be hoped for is some straightening of the canal. The necessity for this has been clearly seen ever since the malformation has been recognized, and various methods of treatment have been devised. Among the first was discission of the cervix, which consisted in nicking the internal os, and enlarging the cervical canal backwards, accompanied by some dilatation. This was only occasionally successful, as the dysmenorrhea often recurred, and it left the cervix in a more or less deformed condition. It is justly relegated to a more or less complete obscurity.

Attempts to straighten the cervix by vaginal operations, such as Dudley advocated, have in my hands proved disappointing, and the explanation has been that the operation has not been directed to the seat of the trouble, namely, the internal os uteri.

Dilatation has, of course, been almost universally recognized as the appropriate treatment, and temporary dilatation without ether has so often proved of value that in some form of other it has been generally tried. The cause of failure has been the tendency of the tissues to contract, and to cause a return of the old trouble. The desideratum has therefore seemed to be to devise some method which will without danger secure as much permanency as possible.

The method I employ is not new in principles, but is the result of experience in trying to secure the best results. The essential feature is the use of a stem or plug sewn into the uterus, and allowed to remain for several weeks. The steps of the operation are as follows: Under strict antiseptic precautions, the uterus is dilated, first, with Hanks hard-rubber dilators, and then with the steel dilator of Ellinger, until it will easily admit the largest number of Hanks — which has a diameter of one centimetre. Prolonged moderate dilatation is better than more rapid extreme stretching, as by the former method the muscles are more thoroughly paralyzed, and less likely to contract immediately. To obviate the difficulty of introducing the fairly straight dilators through the curved canal, I have had some of the smaller numbers of Hanks series given a greater curve.

After thorough dilatation the uterus is carefully curetted throughout its whole extent, then irrigated through Burrage's speculum. A hard-rubber plug of the following description is then introduced. It is solid, with a flange at the lower end perforated by four equidistant holes corresponding to the anterior, posterior and lateral aspects. It has a slight anterior curve. This is pushed into place in the canal and attached to the cervix by four silver-wire sutures which pass through the cervical tissue, and the holes in the flange provided for the purpose. I found by experience that four sutures were necessary, as with two only the uterus occasionally was able to force the plug out by its contractions, the sutures cutting through.

I prefer a solid plug because a hollow tube practically does not drain, the blood and secretions collecting in it and increasing the danger of sepsis. With full dilatation, the uterus drains by the side of the plug, and if there is a temporary failure of the secretions to pass off, this is usually overcome by the contractions of the uterus in a few hours.

The patient is usually kept in bed a week. She is then allowed to get gradually about and to resume her ordinary life in a few days. She is told that while the plug remains in the uterus, she should avoid unusual exertion or fatigue. After a period of from four to six weeks, during which one menstrual period has been passed, the plug is removed by cutting the sutures.

As a rule, there is little or no general disturbance from this operation. Severe pain is the rule for a few hours after the dilatation, but it is often not so bad as at an ordinary menstruation, and subsides in a few hours. There is sometimes a feeling of discomfort at intervals all the time the plug is worn, but it does not usually interfere with the patient's going about as usual.

The question of drainage is the most important. In not more than five or six cases out of a hundred has there been any failure to drain thoroughly, as would be shown by a rise in the temperature; and in the most of these it has been a matter of only a few hours before the uterus succeeded in expelling the small amount of retained secretions by the side of the tube, and the temperature has returned to normal. Twice, or at the most three times, I have removed the tube within the first week; but in none of these was there any evidence of sepsis. I think with full dilatation, and care as regards the diet and bowels, there need be no fear of any subsequent trouble.

The results of the operation have been satisfactory, more so in my hands than by any other method of operation. Fully seventy-five or eighty per cent. have been wholly relieved, or made so comfortable that they feel satisfied. Of the remaining twenty or twenty-five per cent., the most have shown some improvement, and in only a very few instances has the operation been a failure.

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Clinical Department.

TWO CASES OF CÆSAREAN SECTION.[1]

BY G. H. WASHBURN, M.D., BOSTON.

Most of the cases that have been reported thus far have been done under favorable circumstances. These have been considered worthy of notice because they were done under adverse circumstances. There was no hospital with its completeness of conveniences and its excellent nursing. There were not even the conveniences of a luxurious home. The operations were both done in country tenements.

In one case, to be sure, the house was new and the patient's family the first tenant; but in the other the house was old, the tenement a very small one of two rooms. The room where the woman was sick was about seven by fourteen feet, and contained a large double bed, bureau, washstand, table, chairs and trunk. The time of the operation was night, and the illumination consisted of the light of a kerosene lamp and a candle with a reflector.

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[1] Read before the Obstetrical Society of Boston, February 15, 1898.

The first case occurred in Manchester-by-the-Sea during the time of my summer's practice. I was called in consultation by Dr. Blaisdell, the older of the physicians of the village, to see a woman who had been in labor for about twenty-four hours. She was about thirty-eight years old, had recently married for the first time, and this was her first pregnancy.

The labor was at term, and the pains had been strong but did not seem to accomplish much. The os was so slow in dilating that the doctor had tried to dilate artificially, but found much resistance, and found also that the child's head did not seem to engage at the brim, or come down low enough to be an efficient dilator of the cervix.

It was decided that the pelvis was too small to allow the large head present to pass. The obstetrical conjugate was a little over three inches. Fetal heart was strong and good. Preparations were at once begun for operation. A few of the things in the room were removed and an operating-table improvised by laying an ironing-board across a trunk and two boxes. Over this was thrown a boiled sheet. Sheets and towels were sterilized by boiling in the wash-boiler. Dr. James M. Jackson very ably assisted me, and Dr. Glendenning, of Manchester, gave the ether. Dr. Blaisdell was ready to take the baby and resuscitate it. The patient's abdomen was scrubbed and rendered aseptic with permanganate and oxalic solutions followed with alcohol, ether and finally a lysol solution.

The abdomen was opened by a long incision in the median line, through which the uterus was lifted, or rather squeezed, out of the peritoneal cavity and packed around with hot, wet towels. A rubber tube was slipped about the cervix to be used in emergency, but dependence was placed on manual compression of the arteries in the broad ligaments, by an assistant. With one hand compressing each broad ligament, the bleeding can be absolutely controlled. The uterus was now cut in the median line, the cut passing through the placenta.

The child was seized by the head and neck and lifted out, the cord cut, and the child handed to the doctor to be started breathing. The placenta and membranes were torn off rapidly; the uterus washed out with hot lysol solution, the washing being down through the cervix and vagina; a strip of iodoform gauze was packed into the uterus and down through into the vagina. The uterus was sewed up by a double row of sutures. The muscular portion was sewed with No. 3 Leavens catgut, the stitches being about an inch apart. The sero-serous layer was sewed by a continuous suture of smaller size catgut. This prevented absolutely any bleeding from the uterus, which was well retracted. The uterus was returned now to the abdominal cavity, and the wall united by silkworm-gut sutures, and a simple aseptic dressing applied.

The patient was returned to bed in excellent condition. The baby was resuscitated quite readily, and was found to weigh eleven pounds.

The convalescence was not absolutely good at first, owing to the fact, that in the effort to be rapid in stripping off the membranes from the uterus some portions tore off and were left inside. These pieces came away in a couple of days after an intra-uterine douche; and after that the progress was good. She was up and about in five weeks, and three months later considered herself perfectly well. She felt so well that she got out of bed several times when the nurse was out of the room, during the first ten days.

The second case was in the town of Hamilton, a patient of Dr. Thayer's. The woman, a healthy Irish woman, apparently of good build, had been in labor for a day and a half without much progress, when he called Dr. James M. Jackson in consultation. After some delay he put on high forceps, but could not bring down the head at all. I was sent for, and found the woman somewhat tired from the long-continued labor, but otherwise in good condition. The fetal heart was of good strength and regularity. Conjugate diameter three inches, os fully dilated, pains of fair strength, but accomplishing nothing.

A Cæsarean operation was decided upon and preparations made at once. A fourth assistant, Dr. Swan, of Beverly, was sent for and arrived just in time to help resuscitate the baby. Sheets and towels were boiled and the same antiseptic preparations made as in the last case. Bleeding was controlled by an assistant holding the arteries in the broad ligament.

A little more time was taken in this case to peel off the membranes from the uterine wall. A lysol solution was used to wash out the uterus down through the vagina, and a strip of iodoform gauze passed through. The uterus retracted well. To prevent the collection of clots in the uterus, a good-sized strip of iodoform gauze was packed into the uterus while the stitches were being passed, and while the uterine muscle was retracting. This was taken out before the deep layer of stitches was tied. Leavens catgut, No. 3, was used for the deep sutures; No. 1 for the sero-serous continuous suture. As soon as the deep sutures were tied the compression of the broad ligaments was relaxed. The second layer of suturing made everything perfectly tight and dry.

The details of the operation were practically the same as in the first. The baby was resuscitated with more difficulty. The convalescence was excellent and uneventful. There was a slight rise of temperature on the second day, which promptly disappeared after free emptying of the bowels. At last accounts mother and baby were both very well.

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TWO CASES ILLUSTRATING THE VALUE OF EXPLORATORY LAPAROTOMY.[1]

Appendicitis. — Vomiting of Pregnancy.

BY EDWARD REYNOLDS, M.D.

Case I. Mrs. C., seen with Dr. A. L. Flanders, of Jamaica Plain, on December 2, 1897. Forty-eight years old; catamenia ceased one year before. Has had six children. Has been separated from her husband for ten years, during which time she has considered herself in absolutely good health except for chronic constipation. Was thoroughly well on the morning of November 21st, but towards afternoon became chilly and feverish, and felt her clothes tight around the abdomen. The next day remained in bed, with sharp pain in the iliac region. On November 23d was seen by Dr. Flanders, with general abdominal tenderness and a temperature of 101.5°, which rose to 105° in the afternoon. Constipated. Both tenderness and temperature gradually decreased during the succeeding four days, and the bowels were then freely opened by a cathartic. A few days later, during apparent convalescence, moderate vesical tenesmus appeared, but decreased under medicinal treatment. December 2d there was a sudden recurrence of temperature to 102°, and with it renewed frequency of urination.

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[1] Read before the Obstetrical Society of Boston, February 15, 1888.

December 2d, when I first saw her, I found the whole pelvis filled with a resistant mass, of rounded outline, from the midst of which the cervix uteri seemed to project. The mass was largest on the right, and was generally sensitive and tense. On abdominal palpation there was moderate tenderness in the right iliac region, but no mass could be felt. I thought that the diagnosis lay between a local peritonitis around a probably necrotic tumor (fibroid or ovarian) and a pelvic abscess of cause unknown, appendiceal abscess being of course included. I recommended her immediate removal to a private hospital for operation.

On December 3d, the next morning, the urine contained a large amount of pus and the tumor seemed somewhat less tense, temperature 102°. The tongue was excessively furred and dry, the patient's general condition far from good and somewhat worse than on the preceding day. Under ether the uterus could be distinctly outlined. There was some bogginess on the left side of the pelvis, and a rounded, oblong mass, the size of a very large orange, could be plainly made out on the right side and very high up, the feeling and situation suggesting an ovarian cyst rather than any other lesion. The abdomen was opened by a small median incision, when the cecum was seen to be adherent to the uterus, roofing in the right side of the pelvis. The whole pelvis, both right and left, was walled off by very old, tense and white adhesions, that looked much tougher than the intestinal wall. It seemed to me that any attempt to disturb them would result in the sort of prolonged operation which could hardly fail to be fatal in the poor condition of the patient. I therefore closed the abdominal wound with a sponge held in place by a single provisional catgut suture, and turning to the vagina made a broad incision through the vaginal mucous membrane to the right of the cervix and carried this upward by blunt dissection between the layers of the broad ligament nearly to the level of the fundus uteri, working mainly with the finger. At this level and at a little distance out from the uterus toward the side of the pelvis the finger came into close contact with the oblong mass previously felt. A pair of scissors was easily thrust into it under the guidance of the touch and from four to six ounces of foul-smelling pus and fecal matter escaped. The opening was enlarged by the fingers, the cavity and vaginal wound were packed with iodoform gauze, and the abdominal wound was reopened by Dr. Flanders, whose hands had been kept free from the pus. The adhesions were carefully looked over and it being found that no damage had been done to them, he closed the abdominal wound.

On the following day a large drainage-tube was inserted in the vaginal wound, and it was washed out daily for about three weeks, at the end of which time the patient went home with a small sinus discharging but a few drops of pus. The temperature fell immediately after the operation, and the patient's general condition rapidly improved. At irregular intervals during the convalescence considerable quantities of pus appeared in the urine, but a careful visual inspection of the bladder by the Kelly method immediately before the patient's discharge failed to show any abnormality and the source of this discharge was never known. (As the urine was not drawn by catheter the pus may possibly have been an admixture from the vagina.) The sinus closed a few days after the patient returned home, and she has been well ever since.

Case II. Seen December 11, 1897, with Dr. McKenna, of Jamaica Plain. Mrs. J., twenty-nine years old, the mother of five children. Has suffered with severe vomiting during each of her previous pregnancies, but it has always terminated abruptly at about three months. Is now two and a half months pregnant, and has been vomiting almost incessantly for six weeks. She had had no efficient treatment until seen by Dr. McKenna on December 9th.

When seen by me on December 11th she was much emaciated and very feeble, with a weak and irregular pulse of 135, and vomiting a greenish fluid almost incessantly. My notes say: "Has been in bed six days and has been much constipated. No motion of the bowels for the last three days. History otherwise very unreliable. Might easily have forgotten or failed to observe very prominent symptoms." On vaginal examination the size of the uterus corresponded to the alleged period of pregnancy. An oblong, dense mass, perhaps half an inch in diameter and two inches long, extended from the left cornu down the left posterior and lateral edge of the uterus. This mass was not especially sensitive, and she had suffered little or no pain. The diagnosis was thought to lie between a fibroid and a chronic enlargement of the left tube. The patient was excessively weak. I felt grave doubts as to her surviving any operative interference or even removal to the city; but I felt certain that no efficient treatment could be carried out in her home. She was brought into the Deaconesses Hospital by ambulance that afternoon, arriving with a pulse a little over 140. She was at once put onto enemata of one egg, two ounces of peptonized milk and an ounce of whiskey, made up to eight ounces with salt solution and given every two hours; nothing by the mouth.

December 12th, at 10 A. M., her pulse was 125, very compressible and weak; vomiting incessantly. Her general condition was a little better, and I thought it wise to seize the occasion of this improvement and empty the uterus while there was a possible chance of her withstanding the shock. She was placed upon the table, without ether, and a very rigid cervix was with difficulty dilated to a degree to permit the passage of a small curette. The curette entered three and a half inches, turning slightly to the patient's right and not seeming to be free in a cavity. No fetus felt. The patient's condition was so bad that I did not dare to risk a slow dilation of the os to a degree sufficient to admit the finger. Upon the other hand, with the possibility that the complicating mass might be a distended tube, and even if it were a fibroid, with an entire uncertainty as to its extent and relation to the peritoneum and uterine wall I felt unwilling to take the risk of a forcible dilatation.

Feeling that the patient's life depended upon an immediate emptying of the uterus, and that the possibility of that depended upon an exact diagnosis, I had her etherized and made a rapid incision into the abdomen, lifted the walls as the patient was raised into Trendelenburg's posture, saw that the mass was a fibroid, that the uterus was probably pregnant at about three months, and immediately closed the abdomen, the time of the abdominal operation from the first cut to the tying of the last suture being exactly four minutes. The cervix was then seized with double hooks, and rapidly and forcibly dilated against great resistance with Wylie's steel dilators until one finger could be forced through the os and to the fundus of the uterus. The uterine cavity was found to be somewhat altered in shape and encroached upon by the fibroid, which was interstitial. A small ovum was found at the fundus of the uterus above the fibroid and was easily dislodged and extracted. The placenta was nearly formed, the fetus was probably crushed during the manipulation, at all events was not seen. The patient was put to bed with a pulse of but little over 100, and of much better quality than before the operation. On her recovery from ether the pulse had fallen to 90, and her expression was much less drawn and anxious.

It is worthy of note that the pulse was not varied a beat by the abdominal incision. Her next temperature was normal, the pulse at the same time 86. She never vomited again, took solid nourishment within three days, and went home a fortnight later, having gained greatly in flesh and appearance during her stay in the hospital. I saw her on January 12th in thoroughly good health. The involution of the uterus made the fibroid much larger than it had appeared at the time of the operation, and much more thoroughly subperitoneal. It was now about the size of a large hen's egg, and almost its entire substance projected beyond the uterine wall.

These two cases, though so dissimilar in their nature, to my mind illustrate particularly well at once the harmlessness of a mere abdominal incision and the great assistance which the knowledge gained in this way may prove to the surgeon in attacking the disease by the vaginal route. In the first case the diagnosis was uncertain and the vaginal method of attack seemed unwise, if not impossible, until I was in possession of the information gathered from the abdominal incision. In the second case the patient's condition was so bad that any prolonged and deliberate operating would in my judgment have been almost certainly fatal, and the conditions were such that without the information gained by a glimpse into the abdomen I should have regarded any forced and rapid work as most unwarrantably reckless.

TWO CASES OF TETANUS, BOTH TREATED WITH ANTI-TETANIC SERUM, BOTH FATAL.

REPORTED BY JOHN HOMANS, M.D.,
Visiting Surgeon to the Massachusetts General Hospital, Boston.

W. McD. and J. B. S., railroad employees, were brought to the hospital on the 21st and 23d of March, 1898, respectively. One had been run over on the Albany Railroad twenty minutes before entrance, and the other on the New York, New Haven & Hartford Railroad two hours before. Both were in a state of extreme shock forbidding any operative procedures beyond tying vessels and removing tourniquets.

They were unintentionally put in adjoining rooms. The first-named had both legs crushed and the second one leg. On the 23d McD. had improved enough to submit to amputation of the legs, and on the 25th J. B. S.'s thigh was amputated. The flaps sloughed more or less. Both suffered considerable pain.

On March 30th McD. complained of stiffness of jaw; on the 31st there was less stiffness, but there was some pain on swallowing, and he complained that his face was sore.

April 1st there was pain in the right stump, which twitched frequently; tetanic symptoms increased; he got, at 1 P. M., 40 c. c. tetanic antitoxin, and at 8 P. M., 40 c. c. (Roux).

April 2d, sharp spasmodic pains in the right stump; little sleep; one mild general convulsion. In morning less marked rigidity; asked for beer, which he swallowed. At 2.45 P. M., 60 c. c. antitoxin (procured from the Massachusetts Board of Health). Spasms less marked in P. M., but occurring every few minutes. At 8 P. M., 120 c. c. antitoxin (State Board of Health).

April 3d, fair night; several hours sleep, but cried at times from pain in stump. Temperature rose. Spasms more frequent. In A. M. muscles of neck more relaxed. Swallowing easier; takes considerable liquid nourishment. At 3 P. M., 60 c. c. antitoxin. Spasms became more frequent; tendency to opisthotonos, but not marked. Slight spasmodic contraction of arms. Passes urine with difficulty. Temperature in A. M., 105°; later it fell to 101°. Pulse good.

April 4th, patient slept about four hours during night from the effects of morphia and chloral. Temperature in A. M., 102°. Spasms frequent; neck muscles less rigid; mouth opened one inch, and chin could be brought nearly to sternum by flexing head on trunk. Spasms increasing in intensity. At 11.30, chloroform inhalation to relieve pain and spasms. Quiet for half an hour, when spasms returned. At 2.30, 60 c. c. antitoxin; and at 8 P. M., 60 c. c. antitoxin. Chloroform at 1 A. M. Temperature at 5 A. M., 104.2°. At 5.30 urine passed involuntarily. At 9 A. M. temperature 105.4°; only partially conscious. Pulse more rapid and feeble. At 3.55 died quietly, not in spasm. At time of death the wounds were clean and healthy.

J. B. S's thigh was amputated on March 25th one and a half inches above the joint. On the 27th his condition had markedly improved, but there was some sloughing of the flaps.

On April 1st, at 4 A. M., nine days after the accident and seven after the operation, he complained of difficulty in opening the mouth and of stiffness of the neck. At 8.30 the mouth could be opened only half an inch, and swallowing was difficult; this increased during the day, as did the rigidity of the sternomastoids. At 1 P. M. 25 c. c. of tetanus antitoxin were given, and at 8 P. M. 55 c. c. The wound was bathed in foul pus.

At 2.30 A. M. on April 2d general convulsions began, and during the night rigidity of the thorax. The patient became cyanotic, the pulse weak and irregular. At 9.30 A. M. an attempt to swallow water brought on spasm of the glottis and extreme cyanosis. Death occurred at 12 M.

The bacteriological reports are appended:

Cultures on blood serum made from stump of leg of W. McD. on April 1, 1898. In twenty-four hours a luxuriant growth liquefying the medium. After ninety-six hours in the incubator, microscopic examination of cover-glass shows the typical pinhead rods of the tetanus bacillus. Many other bacilli and many coccus forms are seen. The growth in the culture of a spore-bearing rod has so far prevented the isolation of the tetanus bacillus in pure culture.

Cultures on blood serum made from stump of thigh of J. B. S., on April 1, 1898. In twenty-four hours a luxuriant growth, made up for the greater part of round, yellow colonies, and showing a slight amount of liquefaction of the medium. After one hundred and twenty hours in the incubator, microscopic examination of cover-glass shows a few of the typical pinhead rods of the tetanus bacillus. Many other bacilli and many coccus forms present. A spore-bearing rod present in the growth has so far prevented the isolation in pure culture of the tetanus bacillus.

These cases present many points of interest, as bearing upon the efficacy of the antitoxin treatment, and also of the advisability of amputation in the treatment of tetanus. In regard to the last point, amputation is advocated by no less an authority than Rose as the most effective method of treatment of tetanus, since it most thoroughly gets rid of the focus of infection. The question might be asked, Of what use can amputation be after the symptoms have appeared, if in these cases, in both of which it was performed, seven days before the symptoms appeared, it apparently had no effect? The answer is, that in both cases the condition of shock contraindicated operation until two days after the accident, and the tetanus bacilli had probably been allowed to gain a firm foothold in the tissues. The amputations were performed without thought of prophylaxis against tetanus; and the flaps, which by their sloughing and suppuration gave evidence of infection with pyogenic bacilli, were undoubtedly infected with tetanus bacilli above the point where amputation was performed. Therefore, these cases cannot be said to militate against amputation in the treatment of tetanus in suitable cases.

With regard to the antitoxin treatment, the first case received on the second day after the symptoms appeared 80 c. c. of Roux's antitoxin, on the fourth day 180 c. c. Of antitoxin prepared by the State Board of Health he was given on the fifth day 60 c. c., and sixth day 180 c. c. The second case received 80 c. c. (State Board of Health) on the day the symptoms appeared. Both these cases were apparently unaffected by the antitoxin. The cases belonged rather to the acute than the chronic form of the disease, the type of cases in which the antitoxin treatment has given the least favorable results.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Continued from No. 20, p. 471.)

THE SURGICAL TREATMENT OF PERFORATING TYPHOID ULCER.

Finney[20] from a study of 52 cases of perforating typhoid ulcer treated by operation (six of these are now reported for the first time) finds that:

(1) Of all the so-called diagnostic signs most reliance is to be placed upon the development of a severe attack of abdominal pain coupled with nausea and vomiting, and a marked increase in the number of white blood-corpuscles.

(2) The surgical is the only rational treatment of perforating typhoid ulcer.

(3) There is no contraindication to the operation, surgically speaking, save a moribund condition of the patient.

In performing this operation three things are to be done: first, to find and close the perforation; second, to empty and cleanse the peritoneal cavity; third, to effect and maintain a thorough drainage. The most satisfactory operation is performed as follows: an oblique incision six inches long is made in the right iliac region. The cecum, which is always to be recognized by its longitudinal bands, is the guide to the ileum. From it as the starting-point the coils of ileum are systematically drawn out through the abdominal wound, while one assistant wipes the intestine as it is withdrawn with gauze wrung out of a hot salt solution, and another assistant keeps it warm by means of hot towels. All of the infected intestine, even to the duodenum if necessary, should be thus treated. The whole of the peritoneal cavity should then be wiped systematically with gauze wrung out of hot salt solution, attention being directed especially to the pelvic region. Usually irrigation is unnecessary, but the intestines before they are replaced should be thoroughly irrigated and wiped dry. The first coils should be last replaced and the sutured portion left next to the abdominal wound. Bismuth gauze should be packed around this coil and introduced into the pelvis if necessary. By this means good drainage is insured and escape of feces is provided for in case of extravasation. The abdominal wound should be tightly closed except where the drains escape, and if distention follows operation the bowels should be moved early and thoroughly by calomel in broken doses, followed by salts, and, if necessary, a high turpentine and soap-suds enema. If stimulation is necessary, more reliance is to be placed on hypodermics of strychnia, enemata of several ounces of hot, black coffee, and the transfusion into the cellular tissues under the breast of a quart or more of the normal salt solution, than on any other remedies.

A METHOD OF UNITING THE DIVIDED INTESTINE.

G. Lenthal Cheatle[21] states that this operation has been planned upon experiments performed on the dead, and upon one in a living, animal. He, therefore, ventures to hope that the present publication will be regarded only as a preliminary note, and not as the result of matured investigations. For, although the single operation upon a living animal was perfectly satisfactory, there are many points of importance that require full elucidation; and until further investigations into the matter are completed he does not care to say that the method here suggested is likely to emerge from a post-mortem and experimental success into a definite surgical procedure. This want of completeness, he states, will be manifest in the following description.

After the removal of the affected segment of the intestine by a section exactly transverse to the longitudinal direction of the bowel and its V-shaped piece of attached mesentery, the open ends of the gut lie requiring suture. Through all the coats forming the wall of each free end, a longitudinal incision is made, and in each case it should be situated exactly opposite that part of the bowel to which the mesentery is attached. The length of each incision must vary as convenience and necessity demand, but speaking generally it should at least be equal to the diameter of the tube at the seat of resection. These incisions allow the open ends of the intestine to be spread out in the shape of a fan, and while in this state the separated serous surfaces can be exactly apposed, as it were, back to back. An assistant should now gently keep the intestinal extremities in this accurately adjusted position during their final fixation. The first suture should fix in apposition the mesenteric attachments; the two next should likewise accurately join the respective extremities of the edge of the fan-shaped expansion. The rest of the stitches may now be inserted with greater exactitude. Each must be well tightened at the first knot, all coats of both ends must be transfixed by the silk-bearing needles, and the needles and silk employed must be the finest that are compatible with safety. The ends are thus firmly joined, and all that remains to be done is to suture the longitudinal incision by any of the well-known methods which the operator may prefer. Care must be taken that its edge be well sequestrated by the approximation of its serous surfaces, thereby placing the site of meeting of the four corners out of the realms of surgical importance, the site of the four corners obviously being at the centre of the longitudinal incision.

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[20] Annals of Surgery, March, 1897; Medical News, April 17, 1897, p. 497.

[21] Lancet, May 22, 1897, p. 1403.

This method, besides allowing the possibility of joining intestinal tubes of the same diameter can also permit the union of the small to the large gut. Therefore, should it ever be necessary to remove the ileocecal portion in cases of malignant disease, intussusception, strangulation, and so forth, this additional attribute may prove to be of some value. The only addition necessary to accomplish the junction occurs after the small intestine has been sutured to the colon by the method described above. Then there will be on each side of the joined intestines two equal-sized superfluous flaps of the large intestine. A portion of each of these flaps can be cut away in a V-shape, so that the apex of the V is exactly in a line with the preliminary incision into the free end of the small intestine — in other words, it should be opposite the meso-colic attachment. The remaining superfluous part of these two edges can be inverted by the Lembert's suture that is employed while sewing up the resulting longitudinal incision. The result will be that the colon tapers to its union with the ileum.

THE TREATMENT OF ACUTE PERFORATING APPENDICITIS WITH DIFFUSE PERITONITIS.

Floderus[22] reports in detail a case of perforating appendicitis, with general peritonitis, in a patient twenty-five years old, which was successfully operated upon by Lennander one hundred hours after the inception of the disease, and about fifty hours after perforation had occurred.

The method of operating which is employed by Lennander in cases of suppurative appendicitis is an incision parallel to and a little above Poupart's ligament. Through this incision perfect drainage can be obtained in all cases, while in some it is possible to open retroperitoneally a peri-appendicular abscess. This incision also possesses the advantage of far less predisposition to hernia, as the motor nerves are not divided and the incision passes through the tendinous rather than the muscular portion of the abdomen.

In evacuating a peri-appendicular focus of suppuration great care should be taken not to infect the general peritoneal cavity. To this end the author covers the exposed intestines and the wall of the abscess with sterile compresses saturated in a physiological salt solution. The pus should then be absorbed by small sterile compresses as soon as it shows itself in the bottom of the wound. If the pus flows in too large a quantity to be absorbed in this manner, the patient should be turned upon the right side, the median portion of the abdomen being compressed by the assistant. The pus is then prevented from infecting the general peritoneal cavity. As soon as the pus is all out the finger is passed into the abscess cavity and the cavity carefully cleansed with compresses.

The appendix is now sought out, and removed as near to the cecal origin as possible. In these cases of suppurative appendicitis the attempt to ligate the appendix and close the stump by sutures is unnecessary. It is better, as in the case reported, to place upon it a large hemostat, which includes its mesentery, the distal portion of the appendix being removed. The hemostat is removed three or four days later. There may arise later an intestinal fistula; but this is of little consequence, as it will close of itself, and may be of value in allowing the escape of gases and the consequent renewed peristalsis, as in the case reported. As soon as the appendix has been removed and all foci of suppuration, the skin is cleansed with 1 to 1,000 sublimate solution, the tampons are removed, and the cavity carefully packed with iodoform gauze. If the cavity is not too large to be easily drained, the corners of the wound may be united by a few catgut or silkworm-gut sutures.

The washing out of the general peritoneal cavity is only employed when there has been, in spite of all precautions, an escape of a large quantity of pus into the cavity or a general peritonitis is already present. If it is necessary, he employs a normal salt solution at a temperature of about 100° F., using it until the returning water is perfectly clear. During the washing the pulse should be carefully watched, as collapse may occur due to a splanchnic reflex.

The after-treatment is of great importance, and consists in stimulation and feeding to keep up the patient's vitality during the acute stage and hasten the elimination of the poison. The method employed is digitalis for three days, followed for one week by camphor injections and the use of enemata of grape-sugar and brandy, which are the least irritating and best borne by the rectum, while they act reflexly upon the upper intestine, provoking peristaltic movements. Salt-solution transfusions are also to be employed, increasing the volume of the blood and its pressure and hindering the drying up of the tissues, which always occurs and which cannot be counteracted by the administration of fluids by the mouth.

The second indication, the removal of the poison, cannot be accomplished without the entire removal of the gangrenous appendix and the complete evacuation of the abscess cavity. A further indication is the provoking of diuresis, which the heart stimulants and transfusions tend to produce.

The peristalsis of the intestine must be restored as quickly as possible in order that it may empty itself of its septic contents. To this end he employs during the operation puncture of the intestines to allow the escape of the contained gases, and later the minute and frequently repeated doses of calomel, followed by a saline laxative. The same end is achieved by enemata frequently repeated and by the passage of a rubber tube up into the rectum, allowing the escape of flatus.

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[22] Arch. für klin. Chir., 1897, Band liv, Heft 1; American Journal of Medical Sciences, June, 1897, p. 736.

So long as the peristalsis is not complete no food is allowed by the mouth, the patient being sustained by the enemata noted above. Since the pain following operation is due to a large extent to the meteorismus, it should be counteracted by enemata and the use of the tube to draw off the gases. The author strenuously advises against the use of morphine, never employing it unless the pain is unsufferable, and then only one dose of one-sixth of a grain. The morphine, by its action upon the bowel, prevents peristalsis and the discharge of the contained poisons and flatus.

The administration of morphine in the early stages of the disease only masks its symptoms and delays the diagnosis of perforation, and as each hour's delay before operation, after perforation, vitiates and lessens the patient's chance of recovery, morphine should never be employed, but the patient should be operated upon as soon as the diagnosis of perforation has been made.

Of sixty-eight cases operated upon in the clinic of Upsula there were six with diffuse and nine with fibrino-purulent peritonitis. Of the six, two only recovered, while of the nine all but one recovered, and this patient was operated upon in a moribund condition. This difference in mortality marks sharply the difference in prognosis between these two classes of critical cases.

MESENTERIC CYSTS.

Berkeley G. A. Moynihan, in an article on this subject,[23] states that cysts of the mesentery are among the surgical rarities. He gives the history of the mesenteric disease, the anatomy of the mesentery, the different kinds of cysts of the mesentery, and a number of histories of cases.

In speaking of the clinical symptoms, he states that it has already been mentioned more than once that there are cysts of the mesentery, generally of lymphatic origin, discovered either during an operation for some more serious abdominal disease, or during the performance of a post-mortem examination, so small in size and so quiescent as to be of no clinical significance.

The remaining cases, so far as symptoms go, may be most usefully classified under two headings:

(1) Those in which the course is chronic, where complaint is made chiefly of an abdominal tumor.

(2) Those in which the onset of acute intestinal obstruction first draws the attention of the patient and practitioner to the abdomen.

Chronic Cases. — The cyst, whose characteristics have been enumerated, causes by its presence in the abdomen certain symptoms; the chief of these are, —

(*a*) Pain. Pain is more or less acute, according to the rapidity of growth of the tumor. The more rapid the growth the greater the severity of the pain and *vice versa.* The pain is local, in and around the tumor, and radiating to the flanks, groin and thighs. As a result of the pressure exerted on the intestine and the consequent partial closure of the canal, there are colicky pains, due to vermicular contraction of the hypertrophied muscular fibres as they attempt to overcome the obstruction. There may be, but most commonly is not any, tenderness of the abdomen.

(*b*) Intestinal Disturbances. Constipation is the rule, but the severity and duration of it will of course largely depend on the position, duration and size of the tumors. There is sometimes vomiting, and very rarely there may be persistent and intractable diarrhea. Braquehaye suggests that the compression of the vessels and nerves in the mesentery will cause a diminution in the secretion of the intestine and a consequent palsy of the muscular fibres of the gut, resulting in meteorism.

Acute Cases. — As will be readily grasped from the account given of the author's cases, described in the article, the onset of this group is strictly that of acute intestinal obstruction. There are the usual signs — vomiting, complete constipation, distention of the intestine, and the usual affections of the circulatory and respiratory systems.

There is, however, just one symptom that is worthy of mention as occurring both when acute and chronic symptoms are manifested. It is that of general wasting, which is described as occasionally being extreme. This is due presumably to interference with the lacteals of the mesentery.

Treatment. — Operative interference is necessary in both acute and chronic cases. As soon as the abdomen is opened two methods of procedure are open to the surgeon. He may —

(1) Stitch the cyst wall to the parietal peritoneum and open and drain the cavity.

(2) He may remove the cyst after aspiration, either by cutting through the opening layers of peritoneum in the pedicle, inverting the edges and applying a series of Lembert sutures, draining the peritoneum or not, according as may seem fit; or if no pedicle is found, the peritoneum may be incised over the centre of the tumor and the cyst enucleated.

SURGICAL TREATMENT OF GALL-STONES OR CHOLELITHIASIS.

A. W. Mayo Robson, in a lecture delivered at the Royal College of Surgeons of England in March, 1897,[24] states that after medical treatment has been fairly and fully tried in cholelithiasis, and has failed, that surgical measures should be resorted to. While cholecystotomy is generally recognized as the operation to be aimed at in the treatment of affections of the gall-bladder or bile-ducts, especially in cholelithiasis, it is often impossible to say what operation will have to be done until the abdomen is opened.

The indications for operating would seem to be as follows: (1) in frequently recurring biliary colic without jaundice, with or without enlargement of the gall-bladder; (2) in enlargement of the gall-bladder without jaundice, even if unaccompanied with great pain; (3) in persistent jaundice ushered in by pain, and where recurring pains, with or without ague-like paroxysms, render it probable that the cause is gall-stones in the common duct; (4) in empyema of the gall-bladder; (5) in peritonitis, starting in the right hypochondrium; (6) in abscess around the gall-bladder or bile-ducts, whether in the liver, or under or over it; (7) in some cases where, although gall-stones may have passed, adhesions remain and prove a source of pain and illness; (8) in fistula, mucus, muco-purulent or biliary; (9) in certain cases of chronic jaundice, with distended gall-bladder dependent on some obstruction in the common duct, although the suspicion of malignancy be entertained (in such cases the increased risk must be borne in mind, as malignant disease may be the cause of the obstruction, and operation in such cases is attended with greater danger than ordinary); (10) in phlegmonous cholecystitis and in gangrene, if the case be seen and recognized at a sufficiently early stage of the disease; (11) in gunshot injury or in stab wounds over the region of the gall-bladder; (12) in suspected rupture of the gall-bladder without external wound; (13) in some cases of chronic catarrh of gall-bladder or bile-ducts; (14) in suppurative cholangitis.

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[23] Annals of Surgery, July, 1897, p. 1.

[24] Lancet, June 19, 1897, p. 1666.

Of the operative measures undertaken for diagnosis, sounding and aspiration of the gall-bladder must be referred to. The so-called "sounding for gall-stones," either by means of a probe passed through a canula or by the fine needle of an aspirator, is both uncertain and dangerous, and may more safely be replaced by a small exploratory incision, which can be extended for treatment if required. Aspiration of a distended gall-bladder through the unopened abdomen, though apparently a simple procedure, is not unattended with danger, death having followed in more than one instance. Murphy says it is fatal in 25 per cent. It is only in very exceptional cases that it can do any good. Here, again, it is infinitely better to make a small exploratory incision than to empty the gall-bladder by the aspirator, and afterwards to explore the bile passages with the fingers. If, however, aspiration without exploration be decided upon, a small needle should be used and the cyst emptied as far as possible, in order that intra-cystic tension may not lead to extravasation through the needle puncture. Since in the majority of cases an operation for gall-stones is, in the first place, simply exploratory, the actual operation on the gall-bladder or bile-ducts being only determined by the conditions found when the abdomen is opened, it may be well for us first to consider a simple abdominal section in the gall-bladder region.

THE UNION OF RE-IMPLANTED BONE BUTTONS AFTER TREPHINING.

By a carefully conducted series of experiments, David [25] has proved that the buttons of bone which have been entirely removed from the skull unite when re-implanted under aseptic conditions in a manner analogous to the reparative action seen in other tissues, and that there is neither an entire new formation of bone nor any necrosis of the implanted fragment. These results were obtained by operating upon a series of dogs which were killed at regular intervals of one week, from four days to fourteen weeks after the operations had been performed. He thus secured a series of histological specimens which clearly demonstrated the fact related and that the process of repair was a normal aseptic union between the fragments of bone and the remainder of the skull, and that there was no absorption or necrosis of the fragment, but that it remained intact and became united to the other bone.

(*To be continued.*)

The *John Englis* of the Maine Steamship Company has been purchased for a hospital ship for the army.

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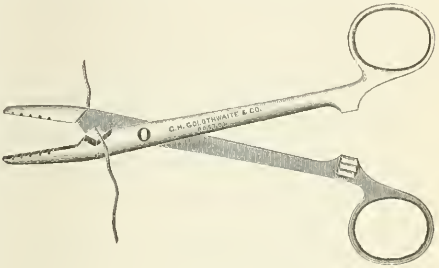
[25] Archiv. für klin. Chir., 1896, Band liii, Heft 4; American Journal of Medical Sciences, November, 1897, p. 609.

New Instruments.

A COMBINED NEEDLE FORCEPS AND SCISSORS.

BY JAMES BROWN THORNTON, M.D., BOSTON.

To those of us who do a good deal of minor surgical work, such as police, street and night surgery, the instrument pictured below would seem to be of great value.



With the ordinary needle-holder, in placing sutures the operator either has to depend upon the aid of an assistant in snipping the silk, or disengage his fingers, bloody and slippery, from the instrument to pick up his scissors. This causes loss of time and often much inconvenience.

In using the instrument which is the subject of this article it will be readily seen to obviate this extra work, as the operator, if he wishes, need not drop the holder until all the sutures necessary in the case are in position.

I have instructed the instrument-makers, Messrs. C. H. Goldthwaite & Co., to have this holder in stock.

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A NEW INSTRUMENT FOR REMOVING COINS AND SIMILAR SHAPED FOREIGN BODIES WHEN LODGED IN THE ESOPHAGUS.

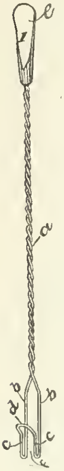
BY MARSHALL L. BROWN, M.D., BOSTON.

This instrument was exhibited and its effectiveness shown before the Middlesex South District Medical Society, in March, 1898.

The radical defects of the coin-catchers heretofore extant were illustrated and shown up by Dr. A. T. Cabot, recently, in the case of a child about a year old, brought into the Massachusetts General Hospital with a silver quarter of a dollar lodged in its throat. With all the instruments at command it could not be removed without performing external esophagotomy, which was skilfully and successfully done by Dr. Cabot.

The necessary requisites to render an instrument successful and effectual for the purpose for which this was invented then became apparent to me, and I constructed the instrument herein described.

It consists of a twisted stem or rod joined to a flattened handle, together about fifteen inches long, — one end of the rod is bifurcated three inches, forming a closed loop. This loop is bent upon itself into two parallel loops an inch long and about half an inch apart, the part joining the parallel loops forming the beak of the instrument, which is placed at an angle of 45° to the plane of the posterior parts of the loops and one quarter of an inch from that plane.



The coin, or similar-shaped foreign body, is caught by the beak, deflected into the parallel loops, and upon withdrawing the instrument the coin is drawn up with it in the same position it went down, which was in the plane of least resistance, the edges of the coin being in relation with the lateral walls of the esophagus, its flat surfaces looking anteriorly and posteriorly.

In other coin-removers there are edges, angles, and corners; a coin rests in them, essentially upon *one* point against the rod of the instrument, and it easily slips by the edge of the coin between it and the lateral walls of the esophagus, scratching, tearing and rupturing the throat, causing abscesses. In this, the coin is caught by the loops, rests against them, and is held by two points at the ends of a segment of a circle (the edge of the coin), half an inch apart, and hence cannot slip off to injure the esophagus.

The instrument is formed of smooth rounded loops in every part in contact with the throat. For its successful use it must be introduced into the throat with the beak of the open loops pointing to the anterior wall of the esophagus, the posterior parts of the loops resting against the posterior wall. In this position it readily passes by the coin.

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Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Regular Meeting, February 15, 1898, the President, Dr. F. H. Davenport, in the chair.

Dr. F. H. Davenport read a paper on

THE PATHOLOGY AND TREATMENT OF DYSMENORRHEA ASSOCIATED WITH ANTEFLEXION OF THE UTERUS.[1]

Dr. Blake said he had never seen any bad results follow the use of plugs. He had allowed patients to wear them for months. He had used a stem with a bulbous extremity, relying on the bulb to keep the pessary in place. He was accustomed to place the stem when the gauze packing was removed after the operation. Thorough dilatation is an important preliminary to the insertion of the stem. He thought we should not be led away from the use of methods which have proved successful in our hands because of popular clamor against them.

Dr. Sinclair spoke of the advantages of the copper-stem pessaries formerly employed by Sir James Y. Simpson. Dr. Sinclair favored slow dilatation and the use of the stem, but used the latter only occasionally. He finds anteflexion a troublesome affection to treat successfully.

Dr. Engelman had used in earlier times the bilateral incision with the stem. The chief advantage of the stem to his mind was the stimulation that it gave to the tissues of the uterus. He had had good results in private practice from the use of electricity. By its use indurated tissues are absorbed, the patency of the uterine canal is maintained, and the uterine tissues are stimulated. He uses both faradism and galvanism in cases appropriate for each.

Dr. Swift said that he gave up the use of the stem two years ago because he got good results where it was not used, and he had one case of septicemia following the use of the stem. He thinks that there is always a certain amount of endometritis in these cases, and that drainage benefits them; drainage being the chief factor in the cure.

Dr. E. Reynolds said that the pain of anteflexion is separated in character from the pain due to ovarian and tubal disease. He thinks that the point of flexion is important, because in certain forms the position of the os is a bar to pregnancy; therefore in such cases he would do discission. In most cases he now does nothing but dilating and curetting, having discarded stems and gauze packing. The essential point of treatment, especially in the married, is to restore the uterine mucous membrane to as healthy a condition as possible and to get rid of the hindrance to drainage at the internal os. Thorough dilatation is important. It may take twenty minutes to accomplish this successfully.

Dr. Davenport, in closing, said that it is necessary to tire out the uterine muscle. The plugs are of value in accomplishing this. When the pain ceases it is an indication that the uterus is tired out. The plug affects especially the tissues at the region of the internal os.

Dr. E. Reynolds reported

TWO CASES ILLUSTRATING THE VALUE OF EXPLORATORY LAPAROTOMY.[2]

One was a case of appendicitis, and the other a case of vomiting of pregnancy.

Dr. Mixter said he preferred the abdominal to the vaginal route for operating on doubtful cases, on the principle that by the former the operator can see the contents of the pelvis. Interference with micturition he had often noted in cases of appendicitis. It was often very difficult to say in the course of an operation whether a pus-tube or an appendix was the primary cause of an abscess; sometimes it was one and at others the other. He believed most strongly in exploratory incision in cases of doubt.

Dr. M. H. Richardson would agree with Dr. Mixter in his last statement, but considered exploratory operations not without danger even in experienced hands. A marked fecal odor to pus, especially in young subjects, placed the origin of the pus in the appendix. He considered it very difficult to wall off an appendix through a median incision. Vaginal drainage was a good principle in pelvic abscess.

Dr. E. Reynolds said that the question of diagnosis was of the greatest interest in these cases. He prefers the abdominal route, as a rule, especially if the pus sac is high up in the pelvis. In Case I, there were many dense adhesions about the cecum that made it impossible to get at the disease from above.

Dr. G. H. Washburn reported

TWO CASES OF CÆSAREAN SECTION.[3]

Dr. E. Reynolds said that Dr. Washburn's cases showed that patients can be made clean in any surroundings. It is important to go slowly in extracting the child and placenta, and the place to hurry is in the suturing. He had himself had five cases, and had seen nine altogether. The incision in the uterus should be made large enough, and it was important not to tear the uterine muscle. The broad ligaments should be held by the hands of the assistant and the india-rubber tubing is superfluous. He considers that there is no advantage in leaving a piece of gauze projecting from the uterine cavity into the vagina for drainage. If the broad ligaments are properly held by the assistant, it makes no difference whether the placenta is situated under the incision in the uterus or not.

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[1] See page 514 of the Journal.

[2] See page 517 of the Journal.

[3] See page 516 of the Journal.

Dr. Washburn, in closing, said that the time spent in cleaning out the uterus was well spent, and spoke of the advantages of employing absorbable sutures in the uterine walls.

◆

Recent Literature.

Constipation in Adults and Children. With special Reference to Habitual Constipation and its Most Successful Treatment by the Mechanical Methods. By H. Illoway, M.D., New York: The Macmillan Co. 1897.

This octavo volume of 500 pages is divided into two parts: Part I treats especially of Adults; Part II treats especially of Infants and Children. Part I is again sub-divided into Section 1, the chapters of which deal with the anatomy, physiology, pathology, etiology and symptomatology of the bowel and its disorders; and Section 2, whose chapters are devoted entirely to the question of treatment. With Part II a somewhat similar order is followed. In Section 2 of the first part no less than 135 pages are devoted to the treatment of constipation due to atony of the intestine: hygienic rules, dietetic regulations, exercise, massage, movement methods, hydrotheraphy, electricity, drugs, are all carefully discussed.

The scheme of the book is thoroughly and painstakingly carried out, and it will be found a useful addition to the physician's library.

The book and its title are, however, rather curious comments upon the tendency to specialization. Constipation in itself is really a symptom rather than a disease. But one is inclined to suggest the question, Are we to have constipation specialists, separate hospital clinics for constipation, and an American constipation society or association?

The Health Resorts of Europe. A Medical Guide to the Mineral Springs, Climatic, Mountain and Seaside Health Resorts, Milk, Whey, Grape, Earth, Mud, Sand and Air Cures of Europe. By Thomas Linn, M.D. Fifth edition. London: Henry Kimpton.

This handy medical guide to the health resorts of Europe is compact enough to be carried in the pocket and yet contains much useful information in a condensed form. Advice, where given, as in the introductory pages, is sensible, and the statements seem to be trustworthy. It is a useful little book both for the medical adviser and for the traveller. The number of editions it has reached emphasizes the fact that it is appreciated.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JUNE 2, 1898.

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THE RECENT MOVEMENT AGAINST ABUSE OF MEDICAL CHARITY IN NEW YORK.

At the National Conference of Charities, recently in session in New York, Dr. Frederick Holme Wiggin, of that city, presented to the Conference "An Historical Sketch of the Recent Movement to Restrict the Abuse of Medical Charity in New York," an outline of which will doubtless interest many of our readers.

The movement had been inaugurated about eighteen months ago by the efforts of Dr. Stephen Smith, recently president of the Department of Charities, and Dr. Landon Carter Gray, then president of the Medical Society of the County of New York, who showed that the ratio of those applying for medical aid had risen from 16 per cent. in 1860, to about 49 per cent. in 1895. A committee of the County Medical Society, consisting of gentlemen representative not only of the general medical profession, but of the larger teaching faculties in the city, were charged with the duty of investigating the question of the abuse, and, if possible, suggesting the remedy. They found no difficulty in proving the existence of a serious abuse, and consequently their efforts were chiefly directed towards seeking out the remedy. It did not take long to reach the conclusion that the evil was largely the result of a lack of proper methods of investigating the financial condition of those applying for medical relief, and that the Charity Organization Society considered it perfectly feasible to systematically investigate all applicants. The cost of such investigation, it was estimated, would be about twenty-five thousand dollars the first year and about five thousand dollars each subsequent year.

In the opinion of the committee another important factor in the production of the dispensary abuse was the system of charging small fees for the medicines and apparatus, thus leading many persons to feel that they were paying their way. As a result of this preliminary study of the question, the committee felt convinced that the evil could be restricted by attention to these points, and also by making it a misdemeanor, punishable by a moderate fine, for a person to obtain, by reason of false representation as to financial condition, free medical or surgical relief at a dispensary. An effort was then made, by means of a circular letter, to secure the co-operation of the managers of the dispensaries; but although more or less definite replies were received from 76 dispensaries, it soon became apparent that it would be impossible to get the managers of all the dispensaries in this city to voluntarily agree to any general plan. The attitude of these managers was clearly presented in the report made to the Legislature last January by the State Board of Charities, which says of them: They "apparently are not, and have never been in a temper to come to some mutual understanding whereby better conditions shall prevail. In a large degree and for various reasons, they have become competitors in business to such an extent that it is probable that nearly half of the inhabitants of New York are now receiving practically free medical treatment."

The original committee was soon reinforced by representatives from a similar committee appointed by the New York County Medical Association. As a new organization, known as the New York Society for the Advancement of the Practice of Medicine, had already introduced into the legislature a bill intending to rectify some of these abuses of medical charity, and as this bill contained a number of objectionable features, its proposers were consulted, and persuaded to give their consent to the substitution of another bill that had been prepared. The main features of the latter, or the first "dispensary bill" were: (1) forbidding the establishment of a dispensary in a drug-store or tenement-house; (2) requiring all dispensaries to be duly incorporated and to be licensed by the State Board of Charities; (3) providing that persons shall not obtain relief from dispensaries by false representations and that a violation of this act shall be a misdemeanor, and (4) empowering the State Board of Charities to make rules and regulations and to annul or suspend incorporations and to revoke licenses. The bill having received the endorsement of the State Board of Charities, it was passed unanimously by both houses of the Legislature, but did not become a law owing to the failure of the executive to approve it.

Between this time and the opening of the legislative session of 1896, the subject was freely discussed, not only in the medical societies, but by both the medical and lay press, and the following medical societies endorsed the plan of appealing to the Legislature to limit the abuse of medical charity: the New York State Medical Association, the Medical Society of the County of New York, the New York County Medical Association, the New York Medical League, the New York Society for the Advancement of the Practice of Medicine, the Medical Society of the County of Kings, the Kings County Medical Association, the Brooklyn Medical Society, the Brooklyn Medical Association and the Long Island Medical Society. Representatives of these societies formed a joint committee which, after much careful investigation, prepared the outline of another bill, which was milder in character, and which seemed to eliminate the features which had been considered objectionable in the previous bill. Before its representation to the Legislature, this outline was submitted to the revision committee appointed by the Governor for the purpose of revising or preparing bills, so that they shall be constitutional and shall not conflict with existing laws.

The essential points of difference between the second bill and this one were: (1) in the new bill the definition of a dispensary was limited to such institutions as derived their income, wholly or in part, from trust funds, public moneys or sources other than the individuals constituting the dispensary and the persons actually engaged in the distribution of its charities; (2) in the new bill the State Board of Charities was given control over dispensaries by empowering it to grant licenses to such institutions as in their judgment would be for the public benefit; (3) in the new bill, the board was given the power to revoke licenses for cause, after a public hearing, instead of, as in the previous bill, the power to annul the act of incorporation.

It seemed to the framers of the measure that if the existing abuse of medical charity was to be controlled the first requisite was an impartial body. which should control and make rules and regulations for the government of all institutions seeking to relieve the sick poor. Such a body is provided for by the Legislature, under the New York Constitution, in the State Board of Charities, and its powers are such that they would require to be but very slightly extended to allow this board to assume control and supervision of the dispensaries of the State by issuing and revoking licenses.

This revised dispensary bill was very generally and favorably commented upon by the daily press at the time of its introduction into the Legislature in the early part of the session. At first, the bill met with scarcely any opposition in the Legislature, but when it was favorably reported by the Committee on Public Health of the Senate, to whom it had been referred, such vigorous protests were received by the chairman of that committee, that provision was made for a joint hearing of the friends and opponents of the measure, before the Senate and Assembly Committee on Public Health. After full arguments on both sides, the Senate Committee reported the bill favorably to the Senate, which passed it with only two negative votes; but the Public Health Committee of the Assembly failed to report the measure to the Assembly, although vigorous efforts were made by its friends to secure a favorable report. The measure was, therefore, smothered in committee, and failed to become a law.

THE SIGNIFICANCE OF INFLAMMATION.

The writers on pathology early in this century regarded inflammation as a phenomenon of disturbed action of the small blood-vessels of a part. Some, as John Hunter and Thomson, saw over-action, hence distention and engorgement; others, as Vacca and Wilson Phillip, maintained diminution of action and debility of the vessels; the capillaries lose their power and distention, stasis and exudation follow.[1] The agency of the nervous system is prominent, and to this is referable the action of the arteries of the part, or of distant parts.

Without stopping to consider the considerable element of truth which there is in this theory (for even with their imperfect microscopes those old pathologists were good observers), and only noting that John Hunter, whose views long prevailed, regarded inflammation as "a salutary operation," destined to restore the parts *ad integrum*, we note that the first real advance on the older views was made by Virchow, whose interpretation of inflammation is now known as the *hypernutrition theory*. In inflammation, under a morbid stimulus we have simply exaggeration of phenomena which occur in ordinary nutrition, namely, vascular exudative and tissue changes brought about by a combination of the three forms of irritation — functional, nutritive and formative. Inflammation begins the moment that increased absorption of matters into the tissue takes place, and the further transformation of these matters commences. As for the exudation, Virchow did not place so much importance on this as an essential element of inflammation as did the French and Vienna schools. He regarded the so-called inflammatory exudate as a product, chiefly, of the heightened activity of the elements of the tissues under inflammation.[2] Thus, pus corpuscles were looked upon as a development from the tissue cells; epithelial, mucous, muscle-cells, connective-tissue corpuscles, etc., though he confesses that they look marvellously like and are indistinguishable from leucocytes. The exudate may be absorbed and healthy resolution result, or be organized (inflammatory bands, adhesions, various connective-tissue growths), or degenerate, causing the fatty, caseous, or other transformations witnessed in severe inflammations.

The above view of inflammation is natural, as coming from one disposed to look upon this morbid process in its relation to local groups of cells whose activity is augmented, perverted or diminished by a noxa or irritant. At the time these views were first propounded, bacteriology was in its infancy, and the microscopical anatomy of an inflamed part had not been sufficiently studied in the living animal.

Cohnheim first distinctly stated the rôle of the leucocytes in inflammation. He attributed to these the principal part in the new formations which attend inflammations. This view has been much modified since Ziegler and others have shown the real participation of the fixed cells in hyperplasias and productive inflammations, and since the true function of the leucocytes as "indifferent cells" devouring and removing refuse matters, and their phagocytic properties have been demonstrated — thanks to the progress of bacteriology, improved microscopic technique, and more careful observation. Cohnheim's essential contribution was the necessary participation of the smaller blood-vessels — the capillaries and veins in the inflammatory act; the starting-point and the essential factor of every inflammation is a damage done to the vessel walls of the part whereby they become more porous and undergo changes of a molecular character permitting transudation of corpuscles and plasma into the tissues. This view still dominates pathological teaching. It is a wide remove from Virchow's doctrine that inflammation begins in an alteration of the nutrition of the cells of the part.

The interpretation of Burdon Sanderson[3] recognizes the importance of the exudation as an essential part of every phlegmasia, while emphasizing the local damage of tissue as well as of the blood-vessels. There is a proliferation of the fixed cells (as Virchow taught), but this is not so early nor so prominent an event as the migration of leucocytes (the latter being, Hallopeau thinks, an essential feature of every true inflammation).[4] The exudation is due to a leakage from the blood-vessels by an alteration of their walls (this is, as above, said also to be Cohnheim's statement). There is active determination of blood and there is stasis. It is stasis that kills; stasis is the beginning of necrosis. What most impresses Sanderson is not hypernutrition but injury and damage. Inflammation (as inflammation) is in no sense conservative, but its only direct effect is necrosis due to arrest of the circulation. Sanderson made numerous interesting experiments in inducing inflammation by heat and cold, etc., by simply tying the nutrient artery of a rabbit's ear and keeping the part deprived of blood for twenty-four hours and then removing the ligature, when violent inflammation with necrosis resulted. In his estimation microbes are not so much "mischief producers" as "mischief spreaders." Since the publication of these lectures, much more importance has been assigned to microbes as true causes of inflammation, and some have denied that there are any other phlogistic agents. The present belief is that microbes are not the exclusive causes, but that there are "simple" inflammations (due to traumatisms and chemical poisons) as well as microbic or infective inflammations.

The contribution which Landerer has made to the subject is of great moment. In answer to the questions, Why the increased flow of blood to the damaged part? Why the stasis which is the "first step toward death"? Why the exudation? he replies that it is not altogether because the blood-vessels are damaged, though they participate in the damage, nor because the part attracts more blood under a morbid stimulus, but because the vital properties of the tissue are injured so that they no longer, by their elasticity and tonicity, effectually oppose the dilatation of the blood-vessels and the consequent engorgement. He points out the intimate connection between the capillaries and the tissues; the former are to be regarded as "vascular spaces in the tissues lined with endothelium, and not as separate tubes sufficiently strong to support all the pressure that may be brought to bear upon them from within." The irritant exerts an influence upon the tissues by virtue of which they become relaxed; the diminished elasticity of the tissues acts on the momentum transmitted to the blood much in the same way as an atheromatous artery. The pressure cannot be returned to the blood column, but is expended in stretching the tissues. Thus the amount of blood increases, but the power to move it diminishes; there is leakage, owing to diminution of external pressure. This view undoubtedly enlarges and explains that of Sanderson; there is damage to a part, then diminished elasticity and tonicity of the tissue-elements, then lessened resistance and augmented flow, followed by distention, stasis and exudation. Thus it will be seen that inflammation constitutes the entire series of complex reactions in a part following grave damage.

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[1] Sir Astley Cooper's Surgical Dictionary, Art. *Inflammation*.

[2] Cellular Pathology, American edition, p. 429.

[3] Lumleian Lectures, Lancet, 1882.

[4] Hallopeau, Pathologie Générale, Paris, 1891, p. 329.

Is there anything conservative in these reactions? The damage may destroy, but the reactions, not the damage, constitute the inflammation. From this point of view, a conservative end may be discerned. It is well stated by Dr. J. C. Warren in his excellent "Surgical Pathology":

> A certain flooding of the tissues is produced by the inflammatory process, and all injurious substances are thereby swept away, whether chemical poisons, fragments of dead or injured tissue or bacteria, and at the same time new materials are conveyed to facilitate the process of repair. The process peculiar to the leucocytes or phagocytes when performing this duty which enable them to act as scavengers . . . and the antiseptic properties of blood serum favor this view. . . . When after an excessive inflammatory reaction great swelling is followed by suppuration, it is seen that the old idea of a "peccant humor" rests on a scientific basis, and in the discharged contents of the abscess are found the remnants of the injurious substances which gave rise to the inflammation.[5]

It might be added that we see this same conservative end in those chronic inflammations where a hydatid cyst, tubercle, gummatous tumors, etc., are walled off and rendered innocuous by a firm capsular investment of connective tissue.

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MEDICAL NOTES.

Dr. William Osler. — Dr. William Osler, of Baltimore, has been selected for the distinction of the Fellowship of the Royal Society of England. He is already a Fellow of the Royal College of Physicians of London.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, June 1, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 16, scarlet fever 11, measles 68, typhoid fever 5.

President of the New Hampshire Medical Society. — At the recent meeting of the New Hampshire Medical Society at Concord, N. H., George L. Saltmarsh, M.D., of Lakeport, was elected President of the Society.

An Infirmary for Harvard. — The committee having in charge the project of an infirmary for Harvard University has secured as a site a lot of land between the Cambridge Hospital and the Old Ladies' Home, having a frontage of one hundred feet on Mt. Auburn St. and extending back to the Charles River Parkway. The members of the committee now have money enough on hand to pay for the site, with a small surplus. The plans proposed, which were drawn by Edmund W. Kingsbury, provide for a building of brick, with stone trimmings, two and a half stories in height, with a frontage of 46 feet and a length of about 130 feet. In addition to the single rooms for students, there will be a library and reading-room for convalescents, rooms for the parents whose sons are patients in the infirmary, the necessary bathrooms and laboratories, and a diet kitchen in addition to the kitchen of the infirmary proper. The location of the building is such as to give an outlook over the new parks on both sides of Charles River and Soldiers Field, and there will be an exposure to the sun on three sides for the greater part of the day. The project is largely a philanthropic one, for, while those students who are able to pay will be charged, the infirmary will be free to the poorer students. The students coming to the infirmary will be entitled to all the privileges of a regular hospital, such as being attended by any physician the patient desires, etc., except in the cases where the expense is borne by the college.

NEW YORK.

No Indictment Found Against Dr. Cleaveland. — It is gratifying to announce that Dr. Turnbull W. Cleaveland, a highly esteemed member of the profession and a Fellow of the New York Academy of Medicine, who has for some months been held in bail on a criminal charge, has been honorably discharged by the courts. The indictment found March 16th, charging Dr. Cleaveland with criminal negligence, resulting in the death of the infant daughter of James L. Carhart, a theatrical manager, was on May 23d dismissed by Judge Cowing in Part 2 of General Sessions. In doing so the judge stated that no cause of death was shown to the Grand Jury, and that, furthermore, the uncontradicted statement of the defendant's attorneys that two members of the Grand Jury found the indictment without hearing the evidence was sufficient of itself to kill the indictment. Before bringing the criminal charge against Dr. Cleaveland, the parents had been unsuccessful in a suit for civil damages.

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[5] Warren's Surgical Pathology, p. 114.

Opening of the Recreation Piers. — The recreation piers at the foot of East Third Street and East Twenty-fourth Street were opened to the public for the season on the afternoon of May 28th, and in the evening band concerts were provided at both piers.

The National Conference of Charities. — The twenty-fifth anniversary of the National Conference of Charities and Correction, now a large and powerful body, with delegates from every State in the Union as well as Canada and Mexico, was celebrated at Carnegie Music Hall on May 18th. Mr. Joseph H. Choate presided, and among the speakers were Archbishop Corrigan, Bishop Potter and President Seth Low, of Columbia University.

The business sessions of the Conference, which lasted a week, were held at Association Hall, and on Sunday evening, May 22d, the conference sermon was preached at Grace Church by the Rev. Dr. Huntington.

At the meeting of May 19th Mayor Quincy, of Boston, spoke of the thirteen boards of public charities in Boston, comprising eighty-seven men and women who gave their services to the city without pay. Boards of charities, he said, had the advantage over single-headed commissions of permitting the utilization of women's services. This was a distinct gain, which could not be had with a paid commission. They also roused civic pride, because their numbers kept the public charity department in touch with the citizens.

Among those who took part in the discussion on the abuse of medical charities were Drs. Stephen Smith, Austin Flint, D. B. St. John Roosa, Wickes Washburn, and Frederick Holme Wiggin. Dr. Wiggin's paper was entitled "An Historical Sketch of the Recent Movement to Restrict the Abuse of Medical Charity in New York," and is dealt with elsewhere.

Mr. James G. Cannon, the President of the Good Samaritan Dispensary, expressed the opinion that the proper organization and co-operation of all the dispensaries would do more to decrease the abuse of medical charity than any legislation.

The following officers were elected for the ensuing year: President, Charles R. Henderson, of the University of Chicago; First Vice-President, Seth Low, New York; Second Vice-President, Laban Pratt, Boston; Third Vice-President, W. J. Breed, Cincinnati; General Secretary, Hastings H. Hart, Chicago; Treasurer, Levi L. Barbour, Detroit.

It was also voted to appoint a committee of seven to whom will be intrusted the duty of endeavoring, with the aid of the American Bar Association, to bring about an equalization of laws with reference to keeping and caring for dependents in the different States of the Union.

Tammany and Bellevue. — It is announced that John W. Keller, the Tammany Commissioner of Charities, is about to make a complete reorganization of the attending and consulting physicians and surgeons of Bellevue Hospital, and as a result of this it is to be inferred that the visiting staffs of all the other hospitals belonging to the city will also be reorganized. For a considerable number of years past, three-fourths of the appointments at Bellevue have been made from the faculties of Bellevue College, the University Medical School and the College of Physicians and Surgeons, now the medical department of Columbia; the other fourth of the staff being taken from the members of the profession not connected with these colleges. During the administration of Mayor Strong, it will be remembered, the attending physicians and surgeons of all the city hospitals except Bellevue were summarily dismissed by the Commissioners of Charities then in office, and the nomination of their successors was placed in the hands of the Medical Board of Bellevue Hospital; each of its four divisions being assigned an equal number of appointments. In the reorganization of the hospital staffs now contemplated, the idea seems to be to give the profession outside the colleges mentioned a larger share of the appointments, though the precise manner in which the incumbents are to be selected has not as yet been made public; but if the tenure of these hospital positions is not made more fixed than it has been of late, it will soon be difficult to get the best men in the profession to accept them.

Death of Dr. Andrew Manning. — Dr. Andrew Manning, who had been for a number of years city physician of Plainfield, N. J., died suddenly on May 19th. He was born in Plainfield, January 6, 1861, and was graduated from the College of Physicians and Surgeons, New York. Afterwards he was house-surgeon at Charity Hospital, Blackwell's Island.

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Miscellany.

RÖNTGEN X-RAYS AND SIGNS OF DEATH.

News comes from Paris of a fresh medical use of the discovery of Röntgen, namely, to test the reality or otherwise of apparent death. The event that gave rise to the experiment was the occurrence of an alleged case of premature burial at the Montmartre Cemetery in Paris. A man who had been found inanimate on the floor of his room, after an official inquiry was taken away and buried in the ordinary manner. Two hours later, however, his body was exhumed, because of a rumor that he had simply fallen into a cataleptic condition. Various skilled witnesses agreed that the body did not present all the signs of death, and decomposition appears to have been delayed. Seven days after the apparent death, M. De Bourgade took a Röntgen-ray photograph of the chest, and as the result of that examination, came to the conclusion that the man was undoubtedly dead. The principles on which he founded his reasoning were plain. An opaque object with oscillating edges, if interposed between an x-ray tube and a photographic plate, will leave on the latter a shadow-print with light-toned margins. Hence, in a radiograph of a living heart the contour is light and indistinct, and merges gradually into the dark main mass of shadow. In a dead body, on the other hand, the edge of solid thoracic organs, as the heart and diaphragm, is sharp, and lacks the dim borderland that marks pulsating movement. The pseudo-cataleptic individual of Montmartre, when radiographed by M. Bourgade, showed a heart and diaphragm deeply and uniformly depicted, hence he had no difficulty in determining that they belonged to a corpse.

So far as one can determine from mere description, a substantial contribution appears to have been made to medical science in a highly practical direction, for the subject of premature burial has too long been a bogey in the hands of unscientific and alarmist writers. — *Medical Press and Circular.*

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NON-MEDICINAL METHODS OF TREATMENT.

In his opening address before the last Congress for Internal Medicine, Professor von Leyden gave expression to the following sensible views:

"To-day we are conscious at the bedside that we have not simply to treat the disease, but chief of all the patient himself, and that he is indifferent to nothing, not even the slightest thing; nothing is adjusted at the bedside in the right way of itself; the physician has to see to everything, and not infrequently the so-called simple remedies are the ones which possess the power to hold together the delicate thread of life and again to fortify it. Medicine of to-day no longer rests upon a fixed system and no longer draws from a single source. Its remedies and methods have been multiplied and extended to an astonishing degree. What formerly appeared of secondary importance has now risen to a position of prominence. Numerous therapeutic measures arise to demand recognition. Our therapy is no longer exclusively based upon medicaments and prescriptions. We know that the task of the physician is not finished when he has written his prescription *lege artis.* He must make a more critical and thorough investigation of his patient's condition. We are convinced that many patients recover without medicine, and that many diseases are healed by other means." — *Medical Record.*

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Correspondence.

[Special Correspondence.]

VENEREAL DISEASES IN PARIS.

(Concluded from No. 21, p. 507.)

For extensive vegetations about the vulva and anus, I have seen used, first, a swabbing with cotton dipped in chromic acid, then a removal of the excess of acid with water, and finally the use of the stick of nitrate of silver. An immediate red deposit of the chromate of silver is produced, and there is a liberation of free nitric acid. Cauterization produced in this way is rapid and effective. Besnier introduced some years ago a method of applying to scrofulous ulcers, first the nitrate of silver and then a rod of zinc, such as one would use in an electric battery. After the first black deposit of silver, and the first destruction caused by the free, active nitrogen, the zinc allies itself with much of the oxygen of the NO_3 combination, thus setting free more nitrogen and continuing and intensifying the work. Both these methods are useful, but the latter is more superficial and less thoroughly destructive, and thus not so serviceable in the luxurious vegetations of neglected venereal disease.

A clever method of distinguishing an indefinite and faintly marked syphilitic roseola was shown me by Professor Jullien. It consists simply in viewing the skin of the patient through blue glass. Jullien simply puts on an ordinary pair of blue goggles and inspects from a short distance. It is wonderful how clearly and distinctly a previously indiscernible eruption stands forth. Professor Thibierge showed me, in the wards of *La Pitié*, an elaboration of the same thing. He had a rectangular sheet of blue glass, framed as a boy's slate would be, and from one side of the frame was a handle like that of a hand mirror. This could be held at any desirable distance from the observer's eye or from the patient. This method of observation is extremely valuable, both as a matter of early diagnosis and early institution of treatment, and of the careful noting of the evolution and involution of the macules in patients constantly under supervision. I have, also, no doubt that under its general use many roseolæ would be brought to light which would otherwise have escaped entirely unnoticed.

In the St. Louis, the ordinary, routine treatment for syphilis is by the proto-iodide of mercury, and a solution of chlorate of potash for the mouth. Mixed treatment is used, of course, when necessary. When, however, the type of disease is a severe one, the patient is sent to the hospital wards for calomel injection. In the St. Lazare, injection is practically used to the exclusion of all other methods of administration. It is worthy of note that in Morrow's latest "System of Dermatology and Syphiligraphy," published only a year or two ago, and extremely up to date, Fournier is quoted as opposed to intra-muscular injection, and as saying that one of the reasons why patients flocked to the St. Louis from the other hospitals was because of the extreme dread of such a painful method of treatment. To-day, however, the injection of calomel is given constantly in his wards, and only last Tuesday I heard him say, when presenting a case of malignant syphilis, that such a patient would be injured by waiting for tardy treatment by the digestive canal; that we should strike a severe and decisive blow, and that this could only be done by calomel injection. Most of the specialists whom I know here use injections constantly in their private practice, and for all cases, whether malignant or not. It is extremely simple to give a patient one treatment a week, and leave him free during the rest of the time to occupy himself with his private affairs. It is also more efficacious. I have seen nothing used here but the insoluble salts, calomel preferably. In a few cases I have noticed the gray oil exhibited, but never a soluble preparation.

In treating syphilis by the injection of the insoluble mercurial preparations, the following precautions should be observed:

(1) Examine the patient's urine. Never take the chance of aggravating an already existing nephritis. Thus, when albumin is found, this treatment is contraindicated.

(2) Sterilize instruments by boiling. The skin of the patient should be cleansed by soap and water followed by a solution of corrosive sublimate.

(3) Shake the preparation well, so that the drug may be thoroughly in suspension.

(4) Select the region which is to be injected. The favorite part is the buttock, and the point of election is at the intersection of two lines, one running horizontally from the great trochanter, and the other vertically at the junction of the middle and inner third of either buttock. At this point there are no nerves or vessels. Practically, however, this rule need not be absolutely observed, the great desideratum being to insert the needle at a point higher than the tuberosity of the ischium, so that after-pressure may be avoided. The custom is to inject the buttocks alternately.

(5) Be sure that none of your preparation is on the outer surface of the needle, because if you fail in this particular you are liable to get great local irritation from the deposit of particles along the track of the instrument. The proper method of procedure is to plunge your steril-

ized needle into the tissues, then to fill your syringe, attach it, make your injection and withdraw quickly.

(6) Plunge deeply. The less superficially you deposit your medicament the less liable are you to pain and abscess.

After long-continued observation in the hospital clinics, and after visiting most of the public places of amusement, I have been forced to the opinion that the regulation and inscription of prostitutes in Paris is not a success from a health standpoint. Only a few weeks ago, one of the gentlemen in charge of the St. Louis clinic regretted that he could not show a greater variety of dermatoses, because the large number of syphilitic cases had crowded out the others. Dr. O. Commenge, *chef* of the dispensary of *salubrité,* has just published a more or less interesting work on clandestine prostitution at Paris. He tells us that from 1878 to 1887 there were 27,007 unregistered prostitutes sent to the dispensary for examination. Of these, 8,476 had venereal disease of some kind, 4,428 suffering from syphilis. This gives no real idea of the number of clandestine prostitutes in the city, because the agents of public morals only interfere with a girl after absolute and repeated proof of her guilt. Those who are found by the medical examiner to be diseased are sent to the St. Lazare. The others are held, awaiting word from their parents, or are sent to some charitable institution, or disposed of in whatever way may seem best suited to the individual case, some of them being inscribed and allowed to pursue their avocation under police regulation. The regulation, however, is somewhat irksome. When a girl applies for inscription, she is given a card notifying her to apply for examination every fifteen days, and giving her advice as to her dress, as to the hours during which she may accost men, and the manner of accosting. She is advised to make herself as little conspicuous as possible. She is absolutely interdicted certain of the principal streets, and she is forbidden to speak to a man accompanied by a woman or a child. All these restrictions are of little use when one considers the vast horde of irregulars infesting the streets, the hotels, the theatres, the restaurants and the cafés.

I cannot believe in this law of regulation, because, in the first place, it recognizes, legalizes and induces an undue familiarity with prostitution in a manner which cannot but be degrading to a community. We have prostitutes in Boston, but we do not make them the subject of illustration in our comic papers. Neither do we exploit them on our local stage, nor chronicle their appearance at the race-course. All this condonement and publicity tends to swell the ranks of the *demoiselles du pavé.*

Secondly, it is unjust. It legalizes the act of illicit sexual intercourse, but condemns and imprisons for disease, the natural consequence of that act. Furthermore, with two people equally attainted, and equally a menace to the public health, it seizes and punishes only one. Mauriac says in this connection: "We hear always of the *prostituée;* and the *prostituants,* you do not seem even to suspect their existence! I think it is monstrous that any one should say that every woman who makes commerce of her body should be submitted to certain exactions, to certain methods permitting the quality of the merchandise to be controlled, and protecting the consumer. But, this consumer is able to protect himself in a most efficacious manner, that is to say, by not consuming. And then, why not submit the consumer to certain exactions, to certain measures tending to guarantee the merchandise? Will you do it? Never."

Thirdly, the law is inefficacious. It does not prevent disease. It begets a false security which tends to greater danger. Without considering the great number of the uninscribed, the regulars themselves cannot be guaranteed. The government, every fortnight, certifies to the purity of a vendible article which may be a source of danger to the purchaser of the very next day. A law of examination will never be absolutely effective unless the man is subject to the same exactions as the woman. Recognizing this fact, one ingenious Frenchman has gravely suggested that there be an experienced matron (presumably a trained nurse) in each house of prostitution, and that she shall make a careful examination of all men desiring to purchase the favors of the damsels under her charge. This is regulation with a vengeance.

While I believe that the recognition and licensing of prostitution does not tend to the common good, I am well satisfied that due regard for the public health demands hospital treatment for syphilitics during certain active stages of the disease, because hospital treatment necessarily means isolation. I have no doubt that there is more than one young prostitute walking the streets of Boston to-day, who is a danger to the community, and who would gladly seek voluntary retirement in hospital, were she given the chance. It may be said that she does not deserve care, and that the young man who invests his earnings in buying the embraces of such a woman merits any fate which may come to him. Perhaps this is all true, but does the innocent girl whom he subsequently marries deserve whatever fate may come to her, and do the children born of such a marriage deserve all the sufferings and miseries of hereditary syphilis? Does this young man's fellow-workman who drinks from the same cup, or perhaps smokes the same pipe, deserve to contract a loathsome disease, and in turn to infect his own family? A few beds in one of our large hospitals, devoted to the reception of syphilitic patients of either sex, would, I am sure, be of the greatest public service, without in any way tending to degrade or demoralize the community.

Yours truly, Wm. G. Macdonald, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, May 21, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Whooping-cough.	Diphtheria and croup.	Scarlet fever.
New York . .	3,438,899	1170	431	10.80	18.27	1.76	3.33	2.07
Chicago . . .	1,619.226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	383	121	10.14	13.78	52	5.46	.78
St. Louis. . .	570,000	189	—	2.75	27.50	—	2.20	—
Baltimore . .	550,000	165	56	4.80	12.00	—	1.20	.60
Boston . . .	517,732	217	47	5.06	14.26	.46	.92	—
Cincinnati . .	405,000	115	—	7.74	8.69	2.61	1.72	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	90	21	12.22	23.10	1.11	—	1.11
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	54	14	9.25	12.95	—	1.85	—
Worcester . .	105,050	35	12	11.44	14.30	—	—	—
Fall River . .	95,919	28	8	14.28	14.28	-	-	—
Nashville . .	87,754	33	7	—	15.15	—	—	—
Lowell . . .	87,193	32	13	3.13	18.78	—	3.13	—
Cambridge , .	86,812	33	6	15.15	18.18	—	3.03	—
Lynn	65,220	16	5	18 75	31 25	12 50	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	22	6	—	8.30	—	—	—
Somerville . .	57,977	15	1	20.00	13.33	—	6.66	—
Lawrence . .	55,510	15	7	6.66	50.00	—	—	—
Springfield . .	54,790	12	3	16.66	—	—	—	—
Holyoke . . .	42,364	4	1	—	—	—	—	—
Salem	36,062	14	2	14.28	35.70	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	4	2	25.00	50.00	—	—	—
Chelsea . . .	32,716	12	4	8.33	16.66	—	16.66	—
Haverhill . .	31,406	14	4	14.28	—	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	9	2	—	22.22	—	—	—
Fitchburg . .	28,392	6	2	33.33	—	16.66	—	—
Taunton . . .	27,812	11	5	—	18.18	—	—	—
Quincy . . .	22,562	5	3	—	20.00	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	1	—	—	—	—	—
Everett . . .	21,575	4	3	—	—	—	—	—
North Adams .	19,135	11	3	9 09	27.27	—	—	—
Northampton .	17,418	—	—	—	—	—	—	—
Chicopee . .	17,368	10	2	—	10.00	—	—	—
Brookline . .	16,164	—	—	—	—	—	—	—
Medford . . .	15,832	3	2	—	—	—	—	—

Deaths reported 2,758; under five years of age 798; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough,

erysipelas and fevers) 240, acute lung diseases 436, consumption 316, diphtheria and croup 78, whooping-cough 30, diarrheal diseases 29, scarlet fever 28, cerebro-spinal meningitis 26, typhoid fever 24, measles 21, erysipelas 4.

From scarlet fever New York 23, Philadelphia 3, Baltimore and Washington 1 each. From cerebro-spinal meningitis New York 8, Washington 4, Baltimore, Boston, Worcester, Cambridge and Somerville 1 each. From typhoid fever Philadelphia 7, New York, Boston, Cincinnati and Washington 3 each, Baltimore 2, Cambridge and Salem 1 each. From measles New York 11, Philadelphia 2, Baltimore, Cincinnati and Washington 1 each. From erysipelas New York 2, Philadelphia and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending May 14th, the death-rate was 16.6. Deaths reported 3,577; acute diseases of the respiratory organs (London) 232, measles 133, whooping-cough 115, diphtheria 50, diarrhea 32, fever 27, scarlet fever 26.

The death-rates ranged from 10.0 in West Ham to 22.6 in Liverpool; Birmingham 17.6, Bolton 22.1, Cardiff 11.7, Croydon 14.7, Gateshead 17.1, Hull 17.0, Leed 18.6, Leicester 15.5, London 15.7, Manchester 21.8, Newcastle-on-Tyne 15.9, Nottingham 15.5, Portsmouth 16.8, Sheffield 18.9, Sunderland 18.9, Swansea 18.4, Wolverhampton 17.2.

METEOROLOGICAL RECORD

For the week ending May 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...15	30.12	54	60	49	63	100	82	N.	E.	4	10	O.	R.	.14
M..16	29.99	50	52	47	98	93	96	N.E.	N.	14	6	R.	R.	.29
T...17	29.87	58	68	48	75	50	62	W.	N.W.	9	20	C.	C.	.07
W..18	30.04	56	66	47	63	58	60	N.W.	S.	9	12	C.	O.	
T...19	29.90	68	80	56	54	62	58	S.W.	S.W.	15	15	O.	O.	
F...20	29.90	72	84	59	67	50	68	W.	N.	15	6	F.	O.	.06
S...21	30.32	58	62	54	52	60	56	E.	S.	7	12	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 21, 1898, TO MAY 27, 1898.

The following assignments of officers of the Medical Department are made:

To 1st Army Corps: Lieut.-Col. Rush Huidekoper, U. S. V.
To 2d Army Corps: Lieut.-Col. Alfred C. Girard, U. S. V.
To 3d Army Corps: Lieut.-Col. John Van R. Hoff, U. S. V.
To 4th Army Corps: Lieut.-Col. Robert M. O'Reilly, U. S. V.
To 5th Army Corps: Lieut.-Col. Benjamin F. Pope, U. S. V.
To 6th Army Corps: Lieut.-Col. Nicholas Senn, U. S. V.
To 7th Army Corps: Lieut.-Col. Louis M. Maus, U. S. V.

First-Lieut. William E. Richards, assistant surgeon, having reported to the surgeon-general, in compliance with orders, will proceed to Mobile, Ala., and report in person to the commanding general, 4th Army Corps, for duty in the field with the 5th Cavalry.

Captain Joseph T. Clarke, assistant surgeon, will proceed to Tampa, Fla., and report in person to Major General William R. Shaffer, U. S. V., for assignment to duty.

Acting Assistant Surgeon Francis W. Harrell, U. S. A., will proceed from this city to San Francisco, Cal., and report to the commanding general of the expedition to the Philippine Islands for duty.

The following named officers of the Medical Department will proceed to San Francisco, Cal., and report for duty with the expedition to the Philippine Islands: Lieut.-Col. Henry Lippincott, deputy surgeon-general, Captain William O. Owen, assistant surgeon, Captain Edward R. Morris, assistant surgeon, First-Lieut. Henry Page, assistant surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING MAY 26, 1898.

Vansant, John, surgeon. Granted leave of absence for two months from June 1, 1898. May 24, 1898.

Gassaway, J. M., surgeon. To represent Service at meeting of American Medical Association at Denver, Col., June 7-10, 1898. May 18, 1898.

Glennan, A. H., passed assistant surgeon. Relieved from duty in hygienic laboratory and directed to proceed to Tampa, Fla., for duty. May 13, 1898.

White, J. H., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine as inspector; then to report at Bureau for special duty. May 20, 1898.

Kinyoun, J. J., passed assistant surgeon. To install exhibit of Service at Trans-Mississippi and International Exposition at Omaha, Neb. May 12, 1898. To represent Service at meeting of American Medical Association at Denver, Col., June 7-10, 1898. May 18, 1898.

Brown, B. W., passed assistant surgeon. Granted leave of absence for two days from May 29, 1898. May 26, 1898.

Rosenau, M. J., passed assistant surgeon. Granted leave of absence for ten days from May 18, 1898. May 16, 1898.

Decker, C. E., assistant surgeon. Granted leave of absence for one month from May 24, 1898, on account of sickness. May 23, 1898.

Hastings, Hill, assistant surgeon. To represent Service at Trans-Mississippi and International Exposition at Omaha, Neb. May 12, 1898.

SOCIETY NOTICE.

Massachusetts Medico-Legal Society. — The annual meeting will be held at the Medical Library, 19 Boylston Place, on Tuesday, June 7th, 12 m.

The following papers will be read. Dr. Horace K. Foster: "The Williams Murder Trial."

Dr. E. G. Hoitt: "The Barnes Murder Trial."

Dr. G. de N. Hough: "Case of Cephalic Tetanus."

Members of the medical profession are cordially invited.

Julian A. Mead, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED

Prevention of Yellow Fever and the Quarantining of Houses to Stamp it Out. By Stanford E. Chaillé, M.D., New Orleans, La. Reprint. 1898.

Salivary Calculi. The Climatic Influence of our Southwestern States on Diseases of the Respiratory Tract. By W. Freudenthal, M.D., New York. Reprints. 1898.

A Preliminary Report on a Method of Overcoming High Resistance in Crookes' Tubes; A Possible Step toward Maximum Radiance. By Wm. W. Graves, M.D., St Louis, Mo. Reprint. 1898.

Abdominal Surgery. By J. Grieg Smith, M.A., F.R.S.E., Surgeon to the Bristol Royal Infirmary; Professor of Surgery, University College, Bristol. Sixth edition. Edited by James Swain, M.S., M.D., Lond., Fellow of the Royal College of Surgeons of England; Professor of Surgery, University College, Bristol; Assistant Surgeon to the Bristol Royal Infirmary. Volumes I and II.

Cataphoresis, or Electric Medicamental Diffusion as Applied in Medicine, Surgery and Dentistry. By William James Morton, M.D., Professor of Diseases of the Mind and Nervous System and Electro-Therapeutics in the New York Post-Graduate Medical School and Hospital; Member of the Medical Society of the County of New York; Member of the Röntgen Society of London. New York, etc.: American Technical Book Co. 1898.

Procedures Recommended for the Study of Bacteria; with Especial Reference to Greater Uniformity in the Description and Differentiation of Species. Being the Report of a Committee of American Bacteriologists to the Committee on the Pollution of Water Supplies of the American Public Health Association. Submitted at the meeting of the Association in Philadelphia, Pa., September, 1897. Concord, N. H.: The Rumford Press. 1898.

A Manual of Instruction in the Principles of First Aid to the Injured, including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A., designed for Military and Civil Use. By Alvah H. Doty, M.D., Health Officer of the Port of New York; late Major and Surgeon, Ninth Regiment, N. G. S. N. Y.; late Attending Surgeon to Bellevue Hospital Dispensary, New York. Second edition, revised and enlarged. New York: D. Appleton & Co. 1898.

Original Articles.

HOW RUSSIA CARES FOR HER FOUNDLINGS.[1]

BY J. L. HILDRETH, M.D., CAMBRIDGE, MASS.

(Continued from No. 22, p. 511.)

The sick and well children are kept carefully apart — a certain group of wards being assigned for each; and for contagious diseases there is an infirmary, situated in another building. In case of an epidemic there is available, in addition, a pavilion especially erected for the purpose. Small-pox and scarlet fever are of occasional, although infrequent, occurrence; but the cases of erysipelas average 120 yearly, and those of diphtheria 200. But congenital syphilis claims the largest proportion, reaching every year an average of 1,000. It occurs most frequently among infants prematurely born. All fatal cases of importance are followed by an autopsy. (Report, p. 18.)

The total number of invalid children cared for in the different wards averages about 11,000 annually. Should this seem a very large proportion of the number received, it must be remembered that the children remain at the Home for only a short period — varying from two to six weeks — and that the most critical. No doubt the health reports of an older period would make a better showing. The plan is to keep the children in the Home only until they can be safely vaccinated, and the result of the vaccination found satisfactory, and then to send them into the country. An average of 40 infants daily are vaccinated, the sole vaccine used being that of the heifer. In the spring of the year, when communication with the outlying districts is interrupted by the overflow of the rivers, the arrangements for sending away the foundlings are necessarily delayed, and a distressing over-crowding of the Home results, with often an increase in sickness and mortality. Under such circumstances, the Home sometimes shelters 1,400 nurslings at once, nearly three times the number for which it was designed.

When the hospital staff is complete, it numbers 950 wet-nurses, 150 nurses, 16 superintendents, and 54 visiting physicians. Of the physicians, 18 serve at a time, changing every four months. Each section is visited daily by one of them, and a careful inspection made of the nurses as well as the infants. The nurse of each sick child is given a paper on which is carefully noted the doctor's statement of the nature and progress of the malady, the necessary treatment, variation in weight, effects of vaccination, change of nurse, etc. Whether this paper is of any use to the nurse herself, may be doubted. Reading is by no means a universal accomplishment, as yet, among the peasant classes of Russia.

It was the original intention to keep the foundlings within the shelter of the Moscow Home until they should be of an age to learn trades and provide for themselves. But hospital life, under the best possible conditions, is an unhealthy one for children, and epidemics and a steady increase of mortality soon made it apparent that some other plan must be adopted. Less than forty years after the founding of the Home — that is, about the end of the last century — the present system of rural distribution and inspection was set in operation. It now embraces within its scope not only the government of Moscow, but five adjacent governments, comprising an area of 50,000 verst (about 21,500 square miles) in which are more than 5,000 villages. It would be interesting to know how the health of these rural communities is affected by this distribution among them of so many feeble and sickly children, many of them suffering from tendencies to disease which the six weeks' stay in the Home cannot have materially changed. Such a wholesale scattering of the sickness and vice of congested city life among a rural population is quite without parallel in our own country, although something like it is found, as will be seen later, in other countries of Europe. More than half of these miserable children were born in Moscow; and it would seem that Moscow — not remote rural districts — ought to bear the burden of their diseased lives. On the other hand, there is always the hope that, with wholesome and favoring conditions, cures may be effected, and so the little foundling grows to be no burden, but a help to his community.

The territory within the distributing system is districted — there being 41 districts — with a medical inspector for each. The number of foundlings — or wards, as they are usually called after they leave the Home — under the care of each inspector ranges from 500 to 1,000. The peasant woman who desires to increase her scanty store by adding yet one more charge to those already within her narrow home, must apply to this inspector, be examined by him, and bring from him a certificate as to her age, parentage and condition. Upon presenting this certificate in Moscow, after a journey whose toilsomeness we can scarcely picture to ourselves, and agreeing to the conditions imposed, she is sent back with her nursling at the government expense. The understanding is that the child thus taken will remain in her home, cared for and treated as one of her own, until it is old enough to marry, if a girl, or, if a boy, to learn a trade and maintain itself. Should special reasons arise, the arrangement may be terminated by the return of the child to the Home, but, ordinarily, it is of indefinite continuance. Apparently the wards learn to look upon their foster-parents as their own, and the relations begun in so business-like a way grow to be really filial and parental. At least, so the official report would have us think. But, human nature being what it is, we may be pardoned for suspecting that in Russia, as in countries less remote, inspection is sometimes inadequate and abuses creep in which make the fate of a little foundling, now and then, far different from that which a loving mother would have wished for him. Nevertheless, there can be no question that the children are happier, on the whole, and better fitted for the experiences of after life, than if they had grown up within the walls of the Home at Moscow.

The compensation received by foster-parents was admitted by the report of 1893 to be inadequate, although it was eagerly sought for. It may have been increased since that time. It was then about $18.72 a year for the first two years (the value of the Russian rouble is so fluctuating that these figures are only approximate), for the third year, $14.97; for the fourth, fifth and sixth, $11.86; for the seventh, eight, ninth and tenth, $9.98; and for the eleventh, twelfth, thirteenth and fourteenth, $6.24. This rate of payment is somewhat increased if the child's physical condition is such as to require especial care — as in cases of paralysis, epilepsy or imbecility — or if it prove incapable of physical labor and so can be made of no service to its foster-parent. In cases of acute sickness the wards receive gratuitous treatment in four hospitals established for the purpose at as many different points among the villages. Still, these must be extremely difficult of access to many, however well-distributed they may be. Sufferers from serious chronic diseases, as well as those requiring surgical operations, are transferred to a special infirmary in Moscow.

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[1] Read before the Cambridge Medical Improvement Society, April 25, 1898.

The foster-parents agree not only to shelter, nourish and clothe the child in all respects as if it were their own, but also to teach it to read and write. The inspector, who visits each of his wards six times a year, gives his particular attention to all these points. Since the system of public instruction in Russia is still very inadequate, the hospital has established schools of its own for the primary training of its wards. These schools number 44; they are open to children of both sexes. For the encouragement of the foster-parents a gift of 10 roubles (a little more than five dollars is made to them when their charge receives a diploma.

Boys who pass through these village schools successfully, and show such talents as make further education desirable for them, are placed by the Home in the Teachers' Seminary, the agricultural or horticultural schools, the surgical schools, or the railway schools. Boys of less intellectual promise are apprenticed by their adopted parents to the various trades which their village offers, or are sent to Moscow itself for their apprenticeship. There are said to be nearly 1,000 of these wards in Moscow, learning some fifty different trades. For them, too, inspectors are provided, whose duty it is to watch over the welfare of these children, see that their masters give them proper instruction and do not ill-treat them, and settle differences arising between masters and apprentices. After the ward has passed through his apprenticeship, the inspector still keeps him under supervision, requiring him to deposit a certain part of his earnings regularly in the savings-bank, for future needs. On his reaching his majority, these savings are made over to him. The accumulation in the government savings-bank of such small deposits, belonging to these wards, frequently amounts to 30,000 roubles, nearly $16,500.

In the case of the girls, the simplicity and naturalness of the life which is secured for them in these foster-homes shows more distinctly, perhaps, than with the boys. After leaving school, they usually remain with their foster-mothers, helping about the household tasks, until they marry. With most of them marriage occurs at about sixteen, an age not so precocious in Russia as it seems here. It is the business of the inspector to see that the circumstances of the intended husband are such as to ensure a reasonable degree of comfort — the principal requirements being that his parents should have a fixed place of abode and a piece of land — but the choice is said to rest with the girl herself. This gives as much chance for sentiment and romance as could be expected in a country of which it has been said that "in the peasant class, marriage and the creation of a new household have at all times been regulated chiefly by utilitarian considerations," and that "in no other country, perhaps, has personal inclination played so small a part in rural marriages." [2] Certainly no such opportunity for the acquaintance before marriage which we Americans think so desirable could have been given to the girl within hospital walls.

A contribution of 50 roubles ($26) is made by the Home to the ward's trousseau. In the rare instances where girls do not marry, they are often taken into the service of the Home at Moscow, as waiting-maids, laundresses, etc. All the unskilled labor of the Home is performed by these wards, there being usually about 200 of them there for that purpose. A school is provided within the Home for the benefit of those who have failed to receive adequate instruction in the country, and their leisure hours are devoted to study. They receive wages, and in time a life-pension.

Glancing back for a moment over this rapid review of the provisions which Russia makes for her foundlings, we notice that, in spite of passing its childhood in an average peasant's home, the foundling fares better, in respect to everything which money can buy, than the average peasant's child. It has better medical care and nursing in the first weeks of infancy, better hospital privileges at command all through life, better school opportunities in early years and better chances for a prolonged education if its talents warrant it, a better start in life and better provision for old age. And in Russia, it is said, these advantages are not offset by any such loss of reputation as would affect foundlings in our own country, since there no special stigma attaches to illegitimacy. As a matter of fact, however, only 25 per cent. of the foundlings live to reach their majority ("Encyclopædia Britannica"). This is about the proportion observed at the Paris Home for Foundlings.

It would be interesting to know something of the future of these wards of the State, but very little light is obtainable on that point. From them come many recruits for the public service, it is said. But it is to be feared that the experience of Russia, if the statistics were collected, would prove like that of other European countries where it has seemed that all the efforts at physical and moral training have not been able to overcome inherited tendencies to vice and crime. In France, it is said, that of the male convicts and prisoners, 13 per cent. are foundlings, while of the inmates of houses of ill-fame, 20 per cent. have the same origin. Facts like these have weight with those philanthropists who oppose such lavish provision for the maintenance of foundlings as is made in Russia, France and some other countries. But of these considerations we shall speak later.

Our sketch of the Russian system would be incomplete if no reference were made to the Foundling Homes at St. Petersburg and Warsaw, smaller than those at Moscow and receiving fewer infants, but managed on the same general plan and under the same government supervision. There are also smaller Foundling Homes in other parts of Russia.

The history of the Imperial Foundling Home of Moscow is of considerable interest. As its name indicates, it owes its origin to one of Russia's sovereigns — no less a character than the notorious Catherine II. What motives prompted this deed of benevolence — statesmanship, desire for popularity, a last lingering trace of superstition, a conscious affinity for such courses of life as fill hospitals like this with the abandoned, or a more worthy sympathy for distress and suffering — it is impossible to say. At least the dates show that scarcely more than a year after the murder of her husband — a crime in which Catherine has always been suspected of complicity — the initial steps were taken. The plans of empresses do not wait upon tedious subscription lists and committee meetings, and the hospital begun in September of 1763 was opened in April of 1764. Nineteen children were at once received, and baptised — for the empress, though at heart in sympathy with the French infidelity of her day — still conformed ostentatiously to the usages of the Russian church. The first two were named Catherine and Paul, in honor of the empress and the heir apparent. During the entire period of her reign, until her death, in 1796, Catherine granted to the hospital an annual subsidy of 100,000 roubles — a sum equal now to about $52,000, but doubtless of much greater purchasing power at that time. The Grand-Duke Paul, for the same period, gave annually half that amount. Almost immediately voluntary subscriptions began to pour in — money, real estate and legacies. The most magnificent gift of all (1,200,000 roubles) was received from one of the Demidoff family, a family of which it has been said that "occupying a position in Russia similar to that held by the Rothschilds elsewhere, they are not more celebrated for their wealth than for their beneficence."

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[2] Leroy-Beaulieu: Empire of the Tsars, vol. i, p. 490.

It will be easily believed that an institution founded under such auspices has not lacked for resources. Before the end of Catherine's reign the reserve capital had reached the sum of 2,000,000 roubles. To-day, the general expenses of the Home amount to 1,800,000 roubles annually, about $936,000. (Report, p. 30.)

It is the boast of the Home that its doors have never been closed — no matter in what public calamity, not during the plague of 1771 nor the cholera epidemic of 1830, nor even during the disastrous French occupation of 1812. During the latter period, indeed, an unexpected use was found for its resources, and it gave shelter, by order of Marshal Ney, temporary governor of Moscow under Napoleon, to large numbers of children whom the necessities of war had forced their parents to abandon. When the one hundredth anniversary was celebrated, in 1864, the total number of foundlings succored was reported as 468,560. By 1890, the number had risen to 812,989. If the second centenary finds the Home still in existence — as there seems no reason to doubt that it will — the total will be far beyond a million.

It seems almost ungracious to ask whether the administration of so ancient and splendid a charity has its dark side. And yet the thoughtful visitor cannot escape misgivings. Does such lavish and indiscriminate help really benefit? Is there no danger that it may increase the very evils it seeks to alleviate?

Certain facts are not without significance. Whether profligacy is increased by the facilities which a great foundling hospital like that at Moscow offers for disposing of the fruits of shame is a mooted question. But that unnatural indifference and selfishness on the part of legitimate parents thrive under such a system there is abundant evidence. The hospital report itself — assuredly not a source from which one would expect any but the most optimistic reflections — admits that a large number of legitimate children, not orphans, are probably sheltered there, and estimates the number of such as one-fifth the total number of admissions (page 14). When one considers the advantages which the wards of the hospital enjoy over other children of humble parentage, one can understand how a father and mother might persuade themselves that they were really doing their child a kindness in casting it off. And yet one cannot approve the philanthropy which tempts to such a view of parental responsibility. Charities which have for their avowed object the assistance of the poor in the care and training of their children may commend themselves to both our sympathy and our judgment; but a charity which offers to parents the temptation to rid themselves wholly of their natural cares, under false pretences and by stealth, rests upon an entirely different basis. Such practices, continuing for generations, must degrade parental feeling, family life and public sentiment, to an extent beyond words or imagination.

The conditions of admission to foundling hospitals, even the utility of such hospitals themselves, had been matters of debate among statesmen and philanthropists for centuries before the Moscow Home was founded. Letters-patent of Charles VII of France, in 1445, affirm it as his royal opinion that "many persons will make less difficulty in abandoning themselves to sin when they see that they are not to have the charge of the up-bringing of their infants."[3] In Charles's day a large cradle was kept within the Cathedral of Notre Dame, accessible day and night, in which infants might be left, the clergy assuming their protection. But the funds for their maintenance were inadequate, the miserable little waifs were left in charge of poorly paid and unscrupulous servants, and shocking abuses arose. Street-beggars wanting a new-born infant with which to work upon the sympathies of the public procured one of these; if a nurse needed a babe to replace one that through her negligence had died, she resorted to the Foundling Home; even a witch, requiring a child for her loathsome sacrifices, could be accommodated there. The price asked was just twenty sous.[4] In 1638, by the labors of St. Vincent de Paul, a better state of things was brought about: a new hospital was erected, and Sisters of Charity placed in charge; and the Parliament of Paris issued a decree securing to the institution annually the sum of 15,000 francs. Before many years this charity became fashionable. Louis XIV, in 1670, issued an edict commending it to all; and his queen, Maria Theresa, laid the corner-stone of a new and spacious Home.[5] "By this time," says an English reviewer, "two principles were acknowledged: the one, that it is a sin and crime to expose infants; the other, that it is a religious and social duty to bring up such foundlings. Neither of these principles had been controverted for centuries; but in some respects they had remained in a kind of abstract state. It was only now that they entered into the sphere of real life, where their action and reaction soon produced a series of unexpected problems, and gave rise to the question whether one evil had not been patched up by another seven times worse. For the abandonment of children, which up to that time had been an exceptional crime, became an habitual incident, demoralizing to society in proportion to its frequency. The mark had been overshot: it was necessary to aim a little lower."[6]

The mark had been overshot, indeed; and the number of abandoned children increased, with the new provision made for them, out of all proportion to the increase of population. In 1638, when St. Vincent de Paul first took up their cause, the foundlings numbered 312, by the end of a century they were 1,738.[7] At this period the so-called "turning-box system," first used in Marseilles in the thirteenth century, was in general use. "The turning-box," says the writer just quoted, "is a wooden cylinder, convex on one side, and concave on the other, turning easily on a central pivot. Its convex side is turned to the street, its concave side to the inside of a room. A bell is hung outside, close to the box. When a woman wishes to abandon her new-born baby she calls the attention of the guard by ringing the bell; the box is turned half round, so as to present its concave side to the street; the baby is put into it, and carried by another half-turn into the inside of the hospital. Turning-boxes were not abandoned in Belgium until 1860;[8] they are still in use in some hospitals in Italy;[9] and in China one may see what is practically their equivalent, in a drawer beside the outer door, nicely wadded with cotton, and communicating with a bell, which, as soon as the drawer with its freight is pushed back, summons a porter waiting within. A more easy method for a mother to abandon her child could scarcely be devised. It offers every opportunity for secrecy, and at the same time allows the mother, if she still has some lingering tenderness for her little one, to be sure that it has been received into warmth and safety.

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[3] Chambers's Encyclopædia.

[4] Harper's Magazine, vol. viii, p. 337.

[5] Harper's, loc. cit.

[6] Home and Foreign Review, London, vol. iii, p. 497.

This turning-box, or "*tour*," has been regarded as the visible symbol of the whole system of secret, and hence indiscriminate, admission, and over its use have been waged the most heated discussions. Both the merits and faults of the system have been so clearly displayed in France that it may not be unprofitable for us to continue our rapid survey of its progress there. In 1779, the state of things had become so scandalous as to call forth a decree of the royal council. "His Majesty," the decree runs, "has observed with grief that the number of infants exposed increases day by day, and that, at the present day, they are mostly the offspring of legitimate unions. So that these asylums, originally intended to prevent the crime into which fear and shame might drive an erring mother, have by degrees come to be nurseries for the criminal indifference of parents; and their abuse is growing so expensive to the State that in the great towns, the maintenance of such a multitude of children, has grown out of all proportion both with the revenues of the hospitals and with the care and attention which the officers of the civil service can give."[10]

But this was a royal decree, and the Revolution was at hand. The Revolutionists — with their lax ideas of morality, in our use of the term, and their exaggerated sense of the claims of liberty and fraternity — not only maintained the existing system, but conferred on the foundlings the affectionate and honorable appellation of "children of the State" (*enfants de la patrie*). Illegitimacy was declared to be no disgrace, and a premium of 120 francs was voted to every unmarried woman who should come forward and avow herself about to become a mother.[11] This insane enactment, however, was abolished in 1811, under the Empire, but the foundling hospitals continued to be administered as before, with the same indiscriminate admission. Twenty-five years later, it appeared by the report of the Minister of the Interior, that even parents in easy circumstances were in the habit of saving themselves the expense of rearing their legitimate children by sending them to the foundling hospitals, which by this time were to be found in most of the large towns; and that it had come to be considered, especially in country places, perfectly simple and natural to have one's family brought up at the expense of the State.[12] In such a public sentiment as this, one can clearly trace the influence of the socialism of the period.

Practices more scandalous still were common. A later report asserts that it was considered a part of the professional duty of midwives to dispose of unwelcome children for their patrons, by carrying them to the nearest hospital, and the open advertisement of such a person is quoted, to the effect that she "desires to remind her numerous clients that she undertakes to effect the abandonment of natural children without any knowledge of the circumstances."[13]

Later legislation, however, has produced at least a partial reform in these respects. A Department of Outdoor Relief has been organized, by which assistance is given to poor mothers at their homes, thus diminishing the temptation to the desertion of legitimate children. Cradles and clothing are loaned, wet-nurses are provided, and money itself is sometimes given. Half the children annually on the registers of the Paris Hospital are in this outside department; but the experiment cannot be viewed with as much satisfaction as it otherwise might, for the mortality reports show five times as many deaths among infants thus cared for as among those received into the hospital.[14] This is not surprising, considering the miserable condition of many of their homes.

(To be continued.)

THE PATHOLOGY, GENESIS AND DEVELOPMENT OF SOME OF THE MORE IMPORTANT SYMPTOMS IN TRAUMATIC HYSTERIA AND NEURASTHENIA.[1]

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(Continued from No. 22, p. 514.)

II. — PAIN.

THERE is another symptom which is so common and often plays so dominant a part in the clinical picture of traumatic neuroses that an understanding of its pathology is desirable if we would understand the neurosis itself. This symptom is *pain*. An extended discussion of it may therefore be permitted.

The painful sensations complained of are of various kinds; but conspicuous among them are general pains without very special location, such as through the limbs, or indefinitely through the head. Of the origin of some of these pains we know next to nothing.

But more often, as shown by a study of the author's cases, pain is localized; as for example in the small of the back, and then is known as "traumatic lumbago," or over a particular rib, or in the neck, or a particular part of the head, or along the course of certain nerves.

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[7] Harper's Magazine, vol. viii, p. 337.

[8] Encyclopædia Britannica.

[9] Chambers's Encyclopædia, Edition of 1896.

[10] Home and Foreign Review, London, vol. iii, p. 497.

[11] Chambers's Encyclopædia.

[12] Home and Foreign Review, loc. cit.

[13] Report of Commission of 1861, quoted in Home and Foreign Review, loc. cit.

[14] Chambers's Encyclopædia, edition of 1896.

[1] Read before the Clinical Section of the Suffolk District Medical Society, May 18, 1898.

In such cases careful inquiry generally elicits the fact that these painful localities were originally the seat of bruises or injuries, such as strains or blows.

At the time of examination, some months or possibly even two or three years after the accident, the most careful scrutiny fails to detect any evidence of local injury. Nevertheless, these pains may be such a source of suffering as to be the most prominent cause of disability and to occupy the patient's mind to the exclusion of all other symptoms. What is their pathology? Are they due to the persistence of local injuries? or are they symptomatic elements of the neurasthenic or hysterical state, and independent of the local injury? I think that either view is erroneous. The customary statement to be found in writings on the subject is that these pains are due to strains of ligaments or muscles. This explanation is insufficient. While plausible, when applied to the so-called traumatic lumbago, it will not explain similar pains in regions where there are no ligaments to sprain, or where the nature of the injury was such as not to sprain but simply to bruise; for example, pains of the scalp or cranium, following blows or contusions; pains over the shins or ribs or arms, following similar kinds of trauma. Nor will it explain the persistence of pain following injuries, which, under ordinary circumstances, would be well in a few days.

The true explanation, in the writer's opinion, is that these pains are of a psychical nature; originally excited by violence; they afterwards persist after the subsidence of the original injury, *as pure psychical phenomena.* While I do not wish to deny that sprains in individual cases *may* persist, nevertheless in the great majority of instances this is not the case. They are the manifestation of the concentration of the mind on the injured part. The evidence of this is to be found in the analogy of such pain with similar sensory phenomena in non-traumatic cases, and the absence of all objective injury in the painful parts. It is easy to demonstrate the psychical origin in individual cases, as I have done over and over again, by the complete cessation of the pain after suppression of the mental factor by suggestion and other allied means. The only matter open to question is general applicability of the principle. Reynolds,[3] as far back as 1869, called attention to this pathology in non-traumatic cases, ascribing the pain to the influence of idea. The point is that any sensory phenomenon, particularly pain, which has been excited by any disease process, whether contusion, inflammation or functional disturbance, tends to persist, after the subsidence of exciting cause, so long as the mind dwells upon it, and imagines the persistence of the disease process.

It would be easy to cite illustrations of this drawn from non-traumatic cases. Every one of experience must have observed the tendency in neurasthenics and hysterics for pain and other disagreeable feelings to persist long after the local cause has ceased to exist.

It may also be laid down as a law, that in such subjects the tendency of pain is not to subside with the subsidence of the exciting cause, as in healthy persons, but to continue even without any fresh excitation from mental attention. If the mind is concentrated upon the local condition, the pain persists indefinitely; but, it would seem as if, even when no such psychical factor can be detected, that there was a tendency for the pain vibrations once started to continue for a long period of time as a result of a single excitation — much as one hears the continuous vibrations of a musical instrument, or sees the oscillations of a galvanometer after the cessation of the single mechanical or electrical shock. It would seem as if the defect was an absence of an inhibiting or damping apparatus.

An analogous phenomenon in healthy people is the persistence of the sensation of the motion of the sea after landing from a ship or sail-boat. This is a distinct persistence of a sensation as a quasi-hallucination, after the cause has ceased to act.

When the mind is concentrated on the affected portion of the body, the intensity and persistence of pain is even more marked. Such pains become therefore in time pure psychical phenomena, sort of "fixed" feelings or quasi-hallucinations without objective source. Perhaps it may be that in some of these cases where there is no apprehensiveness or self-concentration of the mind that this absence is only apparent, and that there is, to use the common phraseology of the day, a subconscious attention from out the lower depths of consciousness, of which the patient has no waking knowledge. This can sometimes be demonstrated by hypnosis as in a case now under treatment. Be this as it may, the clinical phenomenon is indisputable.

In one subject, but non-traumatic, now under observation during a long period of time, I have observed this phenomenon over and over again. Exquisite pain and tenderness at the site of former perineal stitch, long-continued pain following the pressure of fifteen to twenty minutes' duration from a bicycle saddle, continuing local tenderness following a slight bruise of the arm or leg, — these are a few examples of what I have repeatedly observed in the same subject. In each instance the pain persisted long after the slightest trace of local injury has existed. More lately this same patient struck the globe of her eye with the corner of a sheet of note paper. Not a trace of inflammatory action that could be detected followed, but troublesome pain sufficient to demand treatment persisted for some weeks. In this and other patients I have been able to prognosticate the future development of this phenomenon at the time of slight illness or accidents.

Most of the localized pains experienced in parts that have been the seat of blows or other injuries by subjects of traumatic neurasthenia and hysteria are explicable in this way and there is little probability that they have other genesis. Thus a man, for instance, with hysterical stigmata suffered also from long-continued, severe pain in both hips and groins. At the end of a year absolutely nothing objective was to be made out. The foci of pain corresponded to the track over his body of the wheels of a fire-engine which ran over him in the deep snow without doing any serious injury to the bones or soft parts. Another exhibits a similar diagonal line across his body, corresponding to the passage of the wheel of a light wagon. Another receives a blow on the head from a descending gate, and suffers afterwards from continued localized pain in the head in the same place without objective signs of injury. Another, the subject of extreme hystero-neurasthenia, still suffers several years after a railroad accident from tenderness over the shins where originally were bruises. Nothing else objective is to be made out. The psychical genesis of such pain is self-evident. Very instructive in this connection are an interesting class of cases in which pain is not persistent but comes on in attacks which are excited by various agencies, particularly mental agitation. Thus one patient suffered attacks of pain in a part of the body originally bruised, with other symptoms, when startled by loud noise, as from snow falling off the roof; such a noise, in his mind, perhaps, simulated the crash of the railroad accident. Another similarly suffered, even at times when free from pain, if, in conversation the accident was referred to. The law of association here excited pain of a purely psychical origin.

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[3] British Medical Journal, November, 1869.

Algogenesia (algos, pain; genesis, generation). — The persistence of pain and its revivification under the influence of attention is a clinical fact. It is not an isolated one but has its analogies in other sensory phenomena belonging to each of the senses. In other words, it is the consequence of a general physiological law. In truth the phenomena of a true functional disease are merely the expression of the same physiological law which under ordinary conditions determines the habitual and agreeable processes of the body and, under extraordinary conditions, determines disagreeable and so-called pathological ones.

The same phenomenon may be observed in connection with the visual, auditory, gustatory and olfactory senses, though perhaps not with each in the same degree. Thus, Galton, as is well known, has shown that some people have the power of seeing distinctly as an hallucination certain objects of their thoughts. Taking Galton's test question, for example, many persons by concentrating the mind can see the morning's breakfast table before them with each object upon it as distinctly as if it were a vivid dream. The same is true of anything else upon which such people intently think. Some, when thinking of numbers, actually see these before themselves and in definite position. This is the case with some of the mathematical prodigies. The degree to which this faculty of visualization is developed in some people is extraordinary. Bastian, in the development of his views of the mechanism of aphasia, calls those persons *visuals* who speak by means of visual memory-pictures of words.

In visualization, then, there is a revival, as a quasi-hallucination, or a memory-picture of a past experience. These memorial images are revived by thought alone, by concentration of the attention either directly upon the visual sensation itself or indirectly on an associated sensation. Similarly we have *auditives*. It is well known that a trained musician can hear the sound of the orchestra and each instrument of the orchestra from simply reading the score. Some people use auditory sensations for the use of language. I suppose, to use a familiar illustration, most people distinctly hear the sound of the speaker's voice when reading the address of a person with whom they have a personal acquaintance and whose voice is familiar to them. This is certainly so with myself.

As to the senses of smell and taste, the revivification of past sensations of each of these is less vivid than with visual and auditory images, but nevertheless the faculty exists with some people in a greater or less degree.

Now the same law must hold true for general sensibility as for special sensibility — for tactile, thermal and pain sensations; the law is general not special. Pain sensations are, in some people, particularly easily revived as memory images, or quasi-hallucinations. Some perfectly healthy people have only to think of a pain in a certain part to have the feeling. This is especially easy if previously that part has been the subject of painful disease. From my own clinical experience I could recite numerous illustrations of this. Sometimes these disagreeable or painful sensations are excited, not by the thought of the sensation itself, but by associated images — as, in one patient, where nausea occurred at the sight of a rubber mat which recalled a similar mat on board ship; or when the thought of an imaginary cancer of the ovary, in another patient, excited pain in that region. These are all true memorial images of past sensations. Persons who exhibit the faculty may be called *algogenetics*, and the phenomenon, when it constitutes a factor in disease, *algogenesia*. We have then, ***visuals***, ***auditives***, ***algogenetics***, etc.

After psychical pains of this kind have persisted for any length of time, they become by the law of association so united with other sensations and movements that they tend to become excited by mere association alone, with or without mental concentration, that is, they become *habit pains*.

Traumatic Lumbago. — A very common location of pain and tenderness is the lumbar region. These then simulate lumbago.

The commonly accepted explanation of traumatic lumbago is, that it is a persisting sprain of the muscles and ligaments. While it is impossible to disprove that this may at times be the pathological condition present, it is extremely unlikely that in the majority of instances the pain felt in this location differs from that just described and manifested in other regions of the body. In many instances the purely psychical character of such a lumbago is obvious. The exquisite hyperesthesia of the muscles, extending even to the skin, is such as is never met with in true sprains. Not only the slightest movement but the lightest touch over the skin causes intense agony, and throws the patient into great mental agitation. All analogy would seem to indicate that with certain exceptions which, however, it must be difficult to make practically, the more moderate cases have a similar pathology. The origin of such a "lumbago" is undoubtedly to be sought in some trauma, but the persistence of the painful sensations can only be ascribed to psychical influences. If traumatic lumbago is really a persisting sprain, it seems inexplicable that it should not be frequently met with amongst foot-ball players, who should be particularly subject to such sprains.

Very often the original trauma can only be inferred from the nature of the accident, inasmuch as the victims of severe accidents are frequently too excited to remember much about the details, or loss of consciousness may have prevented this. But often enough the patient remembers quite clearly the circumstances of the accident; or the presence of bruises or wounds, which at the time were never felt, tells the story.

Ocular Pain, Pain from Diffusion of Nervous Energy. — We are perhaps on less sure ground when we seek to explain painful sensations other than those associated with or originally excited by trauma; but some of them, such as pain and headache on mental and physical exertion, are, in certain instances at least, intelligible. Pain or discomfort from using the eyes is frequently complained of as in non-traumatic cases. This pain is usually in the eyes themselves; or it may be in the head, and then may be felt as localized pain or simply as a headache. Why should use of apparently uninjured organs like the eyes cause pain? If the eyes were inflamed or had been the direct object of trauma, such sensations might be intelligible, on general principles; but in the absence of such conditions, it seems, at first sight, paradoxical that the use of a healthy organ should cause pain in itself or in adjoining parts. Yet this is one of the commonest of symptoms in neurasthenia. An intelligible, even if not easily demonstrable, explanation of this is to be found in the law of *diffusion of energy under excessive mental or physical effort.* When the mind is in a perfectly healthy state, we are not conscious of any effort in concentrating the attention and fixing the eyes (including accommodation), while reading. But in doing this when the mind is tired, we are conscious of a distinct effort which increases proportionately with the increase of fatigue. Now all analogy with similar processes elsewhere in the body shows that we cannot increase the expenditure of nervous energy to one centre without diffusing a greater or less amount of energy to associated centres. Consequently when the mind is in a condition of fatigue, the increased mental effort demanded to work the visual apparatus, to contract the muscles of the eyes, to bring about the necessary amount of accommodation, to fix the attention and to unite together the various mental processes involved, diffuses itself as nervous discharge to associated cerebral centres of the sensory region. These sensory centres may be those for the eyeball, or closely associated centres for the scalp, the cranium, the back of the head, the neck, etc. Painful sensations in each region would respectively result, and we should have eye-pain, headache, occipital neuralgia, etc. A similar explanation would account for not only the eye-pain, but the headaches, the pain in the neck, and even in the back, which are so often met with in eye-strain from errors of refraction, etc. An element in the causation of the more distant pains in this affection may be the fact that to fix the eyes it is necessary to fix the head; the latter act involves the innervation of the muscles of the neck and even of the back. Hence, the increased effort required to overcome the effect of defective refraction would probably diffuse nervous discharge to all the sensory centres associated with the muscles involved.

Evidence in corroboration of this explanation may be drawn from analogous processes of which we have definite knowledge. For example: in an epileptic fit the discharge starting in one centre spreads successively to adjoining centres. In contracting a single group of muscles, as in flexing a finger, with increasing effort more widely distributed groups of muscles are successively thrown into contraction, so that, finally, when the whole force of the individual is exerted, all the muscles of the forearm, upper arm, shoulder, and even face and trunk, are violently contracted in the effort intended to contract simply a single group of muscles. The diminished contractility of the ocular muscles from accumulation of toxic substances probably also makes increased effort necessary.

Thus we have two factors contributing to the demand for increased effort in neurasthenia, diminished contractility of (fatigued) muscles after use and diminished cerebral power. On the sensory side we have the researches of Head, who has shown the very common diffusion in disease of the viscera of the afferent impressions from these organs to the associated sensory centres for the corresponding cutaneous regions, producing hyperesthesia, pain, etc., in definite cutaneous areas.

The phenomena described by Möbius as "Akinesia Algera" has probably the same pathology, and exemplifies the excitation of painful feelings by nervous energy intended for muscular contraction alone. This is a group of symptoms which consists of pain excited by the voluntary contraction of certain groups of muscles. This may become so excessive that every movement may create pain, which thus may invade nearly every region of the body, and an incapacity for movement result that may simulate paralysis. The basis of the phenomenon is neurasthenia, hysteria or hypochondriasis. Pains of this nature are evidently analogous to the ocular pains just described, as has been recognized by Oppenheim, who also points out that the pains observed by Erb associated with hearing, as well as the pain excited in some patients by the ingestion of food, are of identical character.

The synchronous excitation of painful feelings by the effort intended for the contraction of the muscles alone, I have observed well exemplified in myself since my attention was drawn to this subject. I have noticed that while doing gymnastic exercises which included the usual flexions, extensions of the arms, etc., that, as the muscles became fatigued and greater effort was required, I was conscious of decidedly sharp tingling and stinging feelings over quite wide areas of the chest and body. These feelings were sharp enough to cause me, unconsciously as it were, to stop in the exercises and rub the parts. This called my attention to the phenomenon which I have studied with some care. This demonstration of the excitation of sensory centres by the diffusion of energy intended for muscular contraction seemed to me to be complete, for I could repeat the observation nearly as often as I chose. How common this is I do not know.

It is evident that after a while such pains, like those of *algogenetics*, by the law of association become habit pains, or what I have ventured to call an association neurosis. They then are excited by association rather than by diffusion of excessive effort.

The phenomenon of producing pain in one region of the body by slight irritation (as by scratching) of the skin in a distant area is not unfamiliar; likewise the intense pain in the back sometimes excited in neurasthenics by simply tapping the patellar tendon. The writer is familiar with one case, a man, in whom, during mental fatigue, the forced effort of silent reading causes an intense painful tickling in the larynx. This may be explained, possibly, by the close association of the larynx with the faculty of speech. In normal individuals the excitation of pain areas by muscular effort is of necessity, on principles of evolution, uncommon; but pathologically, especially in neurasthenia and hysteria, examples of this are of common experience.

In two subjects, both examples of neurasthenia with hysterical manifestations, pains of this kind have been so marked that I have found it impossible to have them carry out muscular exercises of the mildest kind. In one of them, after reducing the exercises to simple movements of one hand or one finger, pains of such severity have come on as to compel me to desist.

In the other patient I have found it not only impossible to have this patient learn to ride the bicycle, but even to use what is called the "Home Trainer" in the house. The simple revolution of the pedals of the bicycle, without propulsion and almost no resistance, for five or ten minutes always induces such severe pains that the experiment has been given up, though persistently pursued for some time. And yet both these subjects will use the same muscles with equal energy for other purposes without ill results. For example, I have known the first subject to haul furniture about a room, and make quite violent muscular action which she strongly desired without the slightest pain following, although the gymnastic movements above referred to always resulted in pain. The second patient is able to walk quite long distances, go up and down stairs, etc., also without pain.

In both these cases it has been manifest that the development of pain with muscular exertion depends very largely upon the attitude of mind of the patient. When the muscular action is a customary one, or one that is enjoyed and desired by the patient, the pains do not usually follow unless the patient is fatigued; but when the muscular exertion is a novel one, involving new co-ordinations of movements, or is disagreeable and not to the taste of the patient, the pains always follow. The explanation of this difference is, that in the latter class of cases much more effort of will and nervous energy is required than in the former class.

The most probable explanation of the phenomenon itself, it seems to the writer, is this diffusion of nervous energy intended for the muscles to sensory centres. This may be the cause of the pain in torticollis and some of the occupation neuroses in which muscular spasm plays a prominent part. Why in certain cases special sensory areas should be excited in preference to others must depend upon various intricate conditions which we are not yet in a position to define, but among them will be found the natural anatomical and physiological associations of the brain on one hand, and such antecedent pathological conditions on the other as may have originally excited directly these sensory areas and brought them into close association with the other centres in question.

Habit Symptoms. — It is very common for secondary symptoms of this kind, as well as original primary symptoms, to persist long after the pathological condition which gave rise to them has ceased to exist. They then continue as habit symptoms, and may complicate the original neurosis, or persisting alone may give rise to a pseudo-neurasthenia or hysteria. It is not inconsistent with probabilities that the way in which this comes about is as follows: the frequent excitation of nervous processes of whatever nature (motor, sensory, vaso-motor, mental, etc.) in association with each other, or with any physiological act, tends to group them together and so unite them that the excitation of one of them or the performance of the physiological act, excites all the others. At first the nervous processes (symptoms) are pathological; but with every repetition of the excitation the union of the different members of the group becomes firmer until finally any thing that excites one member excites the rest. For example, let us take the pain in the eyes (above discussed) brought on by effort in neurasthenia. At first this depends on fatigue and the increased effort needed to overcome this condition. By frequent repetition this pain becomes associated with contraction of the muscles of accommodation and of the eyeball, etc. The final result is that after fatigue has passed away, any use of these muscles brings on the same pain which then becomes a habit pain. Habit symptoms, or association symptoms, of this kind are in their nature truly functional, and if this interpretation be correct, depend upon the same physiological law upon which all education depends. It is owing to the same law that we are able to acquire the faculty of language, the mechanical arts, the art of music, painting, — in fact, all acquirements and knowledge. The musician who sees a bar of musical notation before him, hears at once the sounds of various orchestral instruments necessary for the score, and his fingers automatically strike the keys of the instruments that will reproduce the sounds. The auditory images, the visual images and the motor impulses are all associated in one group. These are all physiological habits. The essential difference between physiological habits and pathological habits is that one is the result of voluntary education and is agreeable, and the other is the result of involuntary education and is disagreeable. The law which governs the two classes is the same. The nervous system has not two laws, one for pleasant feelings and desired acquirement, and one for unpleasant feelings and undesired acquirements; but the laws governing the nervous system are general not special.

But the sensations that accompany physiological habits may have an unpleasant character, their purpose evidently being to aid in the preservation of the species. Among such habits may be mentioned the feeling of hunger and the local gastric feelings that are felt at a particular hour of the day, that is, in association with various daily actions. If the dinner hour is changed, say from 1 to 2 o'clock, these feelings after a time are correspondingly delayed and a new habit formed. Likewise the feelings in connection with a desire to urinate, which may become associated with various social habits, and from this cause may become so frequently excited as to become a neurosis, as I have seen in several cases.

(To be continued.)

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CHANGES IN THE TURBINATED BONES IN CONNECTION WITH DEFORMITIES OF THE SEPTUM.[1]

BY A. COOLIDGE, JR., M.D.

The path travelled by the air in respiration between the external nostril and the naso-pharynx is bounded throughout by the septum as its inner wall. From the outer wall, for the greater part of the distance, project the turbinated bodies, which much diminish the lumen of what would otherwise be a wide passage. At each end the lumen contracts, forming an entrance and exit to the central nasal cavity, and at these points the outer wall is simply an arch of bone; the nasal process of the superior maxillary in front and the internal pterygoid plate behind (Fig. 1). These arches are in most skulls fairly symmetrical.[2] The posterior border of the vomer, which forms the free edge of the septum as seen in the posterior nasal mirror, is almost always perpendicular, so that the passages from the two nasal cavities to the cavity of the pharynx are in most skulls the same in size. But in the rest of the septum and the turbinates irregularities are so common that asymmetry is the rule.

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[1] Read before the Boston Society for Medical Improvement, March 7, 1898.

[2] See Harrison Allen, Transactions American Laryngological Association, vol. x.

The entrances to the naval cavities, between the cartilaginous septum and the nasal processes of the maxillary bone, or soft parts in front of them, are often of unequal size. The septum is here often bowed or bent, and this must necessarily contract the lumen of one of the passages. This point is anterior to the erectile structures of the turbinated bones, and consequently the area of cross-section of the air-channel is not constantly varying, as it is within the nasal cavity proper. A small degree of narrowing of one or both sides at this point is of no consequence; a greater degree must necessarily cause a perceptible obstruction to breathing.

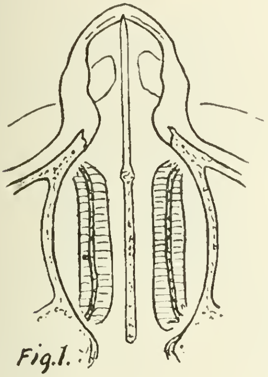
Fig. 1.

Horizontal section through nasal cavity a short distance above floor.

My object here is to discuss those changes in the size and shape of the turbinated bodies which we find almost constantly opposite deformities of the septum, and I therefore leave out of consideration all cases in which there is irregularity of the anterior portion of the cartilage of the septum in front of the turbinates.

Within the normal nasal cavity by the varying turgescence of the erectile tissue of the turbinated bones the area of cross-section of the air-channel is constantly changing, increasing with an increased demand for air, either on account of increased bodily activity or on account of temporary obstruction of the other side, and decreasing again when less air is demanded by the lungs. These respiratory channels through the nasal cavities tend to take the shape of slits rather than of cylindrical tubes, a manifestly better device for warming and moistening the inspired air (Fig. 3). In such an organ it is evident that the slightest departure of the septum from a perpendicular plane would seriously obstruct one nostril and widen the other, unless there were a corresponding change in the size and shape of the turbinated bones or of the tissue covering them. This change is found pretty constantly in cross-sections of skulls; but it is much better studied clinically; that is, the change in shape of the turbinated bodies is due to a change in size and shape partly of the bones, partly of the soft parts covering them. The ethmoid cells also often take part in such changes as affect the middle turbinated bone.

The nasal septum, both bone and cartilage, is in most skulls bent more or less out of a perpendicular plane. This bowing may be simple or sigmoid or irregular, and may extend for a longer or shorter distance in a horizontal (Fig. 2) or perpendicular (Fig. 4) direction, or in both. There are also commonly found certain spurs or ridges of cartilage and bone, following the lines of suture between the triangular cartilage and the septal bones, and occurring more frequently on the convex side of a bowing septum. These outgrowths obstruct one of the nasal cavities in the same way that a deviating septum does, but without any corresponding concavity on the opposite side. These spurs, or the convexity of the septum itself, may come in contact with one of the turbinated bodies, but in the great majority of cases they do not; the turbinates recede, and the air channel is maintained. Conversely, in the opposite or concave side the turbinated bodies advance, equalizing the air-carrying capacity of the two passages (Figs. 2 and 4). The accuracy of this adjustment is often very pretty. A localized depression in the septum is accompanied by a bulging of that part of the turbinated bone which is just opposite to it; or a ridge running the greater length of the upper border of the vomer has opposite to it an oblique furrow in the lower turbinate. It is only when the ridge projects so far that the turbinated bone is crowded to the wall, as it were, that a permanent contact takes place.

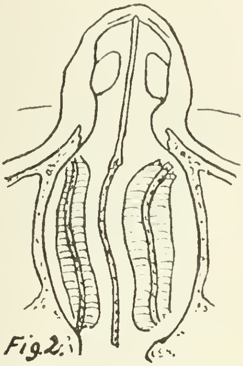
Fig. 2.

Deviation of the septum and adjustment of the turbinated bodies.

Taking up the subject from a clinical standpoint I will begin with the following propositions, and then speak of each separately:

(1) Within the nasal cavities nature attempts to maintain slit-shaped channels for the passage of air, to avoid contacts and to keep the air-carrying capacity of the two sides approximately equal. This is done by change in shape of the turbinated bodies to correspond with deformities of the septum. From this it follows

(2) That the question of pathological hypertrophy or atrophy of a turbinated body must be judged not from its actual size but from the width of the air-passage. A turbinate should be large if it is opposite

a concavity in the septum; in fact, a normal-sized turbinate in this position is pathological.

(3) Consequently, in treatment, the removal of such a turbinate is not indicated, except possibly in connection with operations on the septum.

(4) We do not know to what this vicarious change in the size of the turbinated bodies is due.

I am aware that these propositions differ to a greater or less extent from the orthodox teaching of many of our text-books. The anatomical facts have long been observed, notably by Zukerkandl,[8] but the explanation has generally, it seems to me, involved too much pathology. A twisted septum may justly be considered pathological, but an adjustment of the turbinated body to that twisting should not be called hypertrophic or atrophic rhinitis.

In order to judge of the clinical importance of this central bowing of the septum, compensated by these changes in the turbinated bodies, I have asked a large number of patients to tell me which of the two nostrils was generally the more open. Among those in whom the deformity is not unusually excessive, and where the anterior inch of the septum is not obstructing, the common answer is that they have not noticed any difference. Where one side is thought to be more often obstructed than the other, even with those patients who had given attention to the subject, the concave side with the large turbinated body is as frequently chosen as the other. The relative proportion of air passing through the two nasal chambers is in many persons constantly changing, first one side and then the other taking less than its proper half. This is more true in cases of catarrhal disturbance, but it occurs also without other symptoms.

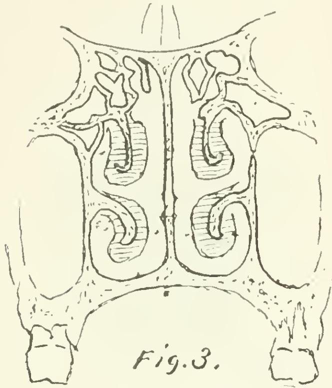

Fig. 3.

Perpendicular cross-section through the nasal cavities.

I do not wish to be understood as saying that a bowing of the septum in the nasal cavity does not affect the respiratory capacity of the nose. In a normal nose there is a great difference between the actual and the possible amount of air-space. The actual space is just enough to let sufficient air through and to warm and moisten it. The possible space is that which is made by shrinkage of the erectile tissues. This reserve space is useful when more air is needed by the body, or when one side is doing all the work. A bowing of the septum necessarily diminishes the possible space of one side while the shrinkage of the turbinated bodies keeps the actual space sufficient for ordinary breathing. On the opposite side the enlargement of the turbinated bodies is often more than enough to make up for the increase in space due to the concavity of the septum, and consequently the possible space is diminished in this side also. The result is a decreased power of the nose to respond to a demand for more air, and an increased liability to stoppage on account of catarrhal swelling.

In the examination of a nose with the nasal speculum a large turbinated bone is easier to see than a localized bowing of the septum. This should be known by every one before he begins to judge of the appearances which he sees in the nose. A large turbinated bone should lead to a careful examination of the septum; and, as I said in my second proposition, the integrity of the turbinated body should be judged by the width of the air-space remaining between it and the septum (Fig. 4).

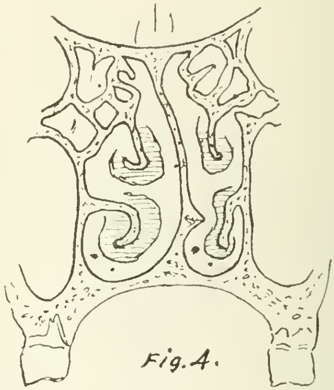

Fig. 4.

Deviation of the septum and adjustment of the turbinated bodies.

There are a large number of cases in which this adjustment has not, or has only partially, taken place. These cases are generally the ones which show distinct pathological symptoms, and so accentuate the fact that this adjustment is essential for preserving the functions of the nose. In cases in which this enlargement to fill a concavity has for some reason not taken place, or when the turbinated bone has been destroyed, most of the air goes through this side, the mucous membrane becomes dry, crusts may form, and we have the appearances of a unilateral atrophic rhinitis. Where a turbinated bone has not properly receded from a spur or a convexity, or cannot recede farther, we find contacts and obvious obstruction to breathing.

The more common operations for straightening the septum, the breaking up of the resiliency of the cartilage and the insertion of splints or tubes, such as that of Asch, affect principally the anterior portion and derive their brilliant results from opening a clear passage into the nasal cavity proper.

An operator may be tempted to attack the most obvious abnormality in a nose, one very large turbinated body; but operation directed to this enlarged turbinated body, simply because it is large, seems to me a mistake. If we succeed in permanently diminishing its size, we have increased the air-carrying capacity of one side at the expense of the proper ventilation of the other side; we run the risk of destroying the normal functions of the nose and defeat a device of nature for minimizing the disadvantages of a bent septum. If we want more space we should open the narrow nasal cavity by removing ridges and bring the septum towards a perpendicular plane. This may bring the redressed septum into actual contact with the large turbinated bone on one side and leave a wide space between the septum and the small turbinated bone of the other (Fig. 4). But this is a condition which nature will be able to relieve by a readjustment in the shape of the turbinated bodies. This readjustment I have found in a few cases. My experience is that it is accomplished mostly by erectile tissue, but that sometimes, especially in young persons, the bone itself gradually changes its shape. It is sometimes advisable to remove part of the large turbinated bone after this redression.

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[8] Anatomie der Nasenhöhlen.

In seeking for the cause which produces this change in the shape of the turbinated bodies to fit the irregularities of the nasal chambers, it seems to me that no local mechanical process is sufficient to explain it, and that we must look upon it broadly as a special power of adjustment given to the turbinates to enable them to fulfil their physiological duties, which but for this would be seriously hampered by even a slight bend in the septum. Other instances in which a deformity of some part of the body is followed by readjustment of neighboring parts are not uncommon. The shape of the face, and especially of the eyes in long standing cases of wry neck; and different changes in connection with deformity of the spine may be mentioned.

It has been suggested that the bending of the septum may be the effect and not the cause of the irregular turbinated bones; but in that case it is hard to see why the turbinated bones of the two sides should so act in harmony; neither is it likely that a part of a lower turbinated bone receding from a spur should be the cause and not the effect of the spur. Also the septum is especially liable to deformity anterior to the turbinated bones, where the external nasal walls are symmetrical and unyielding.

Other theories to account for this change are based upon the supposed action of the air current which, going with more freedom through the larger opening produces trophic changes in certain parts of the turbinated bodies, either by change in tension or by the impact of the air, causing local inflammatory processes or hyperemia or anemia. But as I have said before, there is not necessarily more air going through the concave side. Also the one or the other nasal channel may be obstructed anteriorly without affecting this adjustment.

In this connection I should like to call attention to two cases in which there had been congenital occlusion of the nares, and consequently no currents of air had passed through the nose. In both of these cases the septum was bent, and in both of them the turbinated bodies followed the irregularities of the septum.

The first case I saw by the kindness of Dr. J. P. Clark, who reported it before this Society on November, 15, 1897.[4]

The second case is briefly as follows: M. P., Swedish domestic, eighteen years of age, had a fever when six years of age. Otherwise no history of any disease, either general or local. As long as she can remember she has never been able to breathe through the right nostril. Patient came to the Massachusetts General Hospital on September 9, 1897. She was then breathing comfortably through the left nasal passage, not being obliged to use her mouth except on exertion. The left cavity was normal. The right was separated from the post-nasal space by a plate of bone covered with mucous membrane. The posterior rhinoscopic mirror showed a normal posterior nares on the left side. On the right was a smooth surface continuous with the pharyngeal wall with no line separating it from the septum or the vault of the pharynx. This partition I drilled through with trephines and the patient now breathes well through it, although I have not yet completely removed it. The point to which I especially wish to call attention is the fact that there is a localized bowing of the septum beyond the middle of the nasal chamber, presenting a concavity in the right side opposite the lower turbinated bone (Fig. 2), and that there is a corresponding bulging of the turbinate towards this concavity, as in the case of Dr. Clark's, where the occlusion was bilateral.

In closing, I have only to add that it has seemed to me that the subject is one which has not received the attention which it deserves. This adjustment of the turbinated bodies is clinically so common that to a certain degree it might be said to be the rule rather than the exception; and still it is very lightly touched on in our text-books, and is a constant source of error to students and to practitioners with a limited experience in examination of the nose.

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OBSERVATIONS ON MALIGNANT ADENOMA OF THE RECTUM.[1]

BY A. T. CABOT, M.D.,
Surgeon to the Massachusetts General Hospital.

In malignant disease of the rectum the rational time for operation has usually passed when the surgeon first sees the case. The early stages of cancer of the rectum are painless, and the slight irritation felt at first is commonly disregarded. During the time thus lost the lymphatics become infected and any radical cure is thereafter hopeless.

Since Kraske's paper in 1885 the operative technique has been so improved that the removal of a growth in the lower bowel is not extremely difficult or dangerous. The ready access to the parts afforded by the posterior incision, with the removal or displacement of the lower part of the sacrum, enables us to make our dissection intelligently under the guidance of the eye and to readily control hemorrhage.

The upper part of the rectum is so movable that it can be drawn down for a considerable distance, and the peritoneum has no terrors for us when any opening made into it is in sight and can be closed by sutures. The exactitude with which operations of this region can be carried out greatly increases the chance of the radical cure of malignant growths there; but, in order that this cure may be accomplished, it is important to recognize these growths early.

Most carcinomata of the rectum, except the epitheliomata of the margin of the anus, have a distinctly glandular character and are to be classed as adeno-carcinoma (Orth. Ziegler).

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[4] See Journal of February 24th, p. 171.

[1] Read before the Boston Society for Medical Improvement, March 7, 1898.

The exact relation between the true adenoma in which the epithelium remains limited by the basement membrane (tunica propria) and the adeno-carcinoma, in which the epithelium has broken through that membrane and invaded the tissues outside of it, has never been clearly shown.

We have no facts upon which we can positively base the opinion that these tumors start as true adenomata and later take on the carcinomatous character.

The observation that tumors are sometimes removed which, for the most part, have the histological character of an adenoma, but in which some small area shows a cancerous change, does, however, lend considerable support to the above opinion. It is also to be noticed that the true adenomata which are occasionally found in the rectum are, as a rule, small tumors, while the larger growths of this nature almost always have distinct cancerous characteristics.

In the cancerous degeneration of papillomata of the skin we have an opportunity to study a change closely analogous to that which we have such good reason to believe occurs in these concealed growths of the rectum. At least we may feel that our best working hypothesis is that a certain number of these adeno-carcinomata have a stage during which they are benign tumors; and even in some of those which quickly show a carcinomatous character there is probably an appreciable time after the epithelial growth breaks through the tunica propria before the lymphatic channels convey the infective cells to any considerable distance from the mother growth.

What now are the physical characteristics by which we may recognize these growths in their early, comparatively innocent stages?

They may start either as pedunculated or flat sessile tumors. The pedunculated forms are readily recognized by the examining finger. They are to be distinguished from the fibrous polyps so common in the rectum first by their situation. The little fibrous polyps are usually found just inside the anus, while these adenomatous polyps have their seat higher up in the rectum. The adenomata, too, as a rule, have a rougher surface than the fibrous tumors. When they have attained a little size, they have the feeling and the form which leads them to be characterized as cauliflower growths.

The sessile forms of adenoma start as little, slightly raised growths on the rectal wall, and presently, as they get larger, develop a slightly nodulated character. They cause so little trouble that the chance of discovering one in its very earliest stage is small. Their usual seat is in the upper part of the rectum, and they often escape the examining finger unless great care is exercised.

The first symptoms by which these adenomatous tumors make their presence known are hemorrhage and a sense of irritation in the rectum. Hemorrhage is sometimes noticed a considerable time before any other symptom appears. In a recent case in which a fully developed cancer of the whole tract of the rectum existed, the first hemorrhage had been noticed five years before the patient came under my observation, and persisted in a moderate amount for three years before medical advice was sought. The doctor who then saw the patient discovered a tumor high up at the top of the rectum which he could barely reach with his finger. At the time that I saw the patient, two years later, the whole rectum was involved in a hard, nodular, infiltrating mass. This gives some idea of the comparatively slow development of these growths.

The hemorrhages are usually ascribed by the patient to piles; and the attending physician is, not infrequently, too ready to accept this diagnosis without sufficient investigation. If the stools are carefully examined at the time when the hemorrhage first makes itself noticeable, it will often be found that they contain mucus streaked with blood, a condition which should always lead to a strong suspicion of a growth such as we are considering, rather than an ordinary hemorrhoidal condition.

The following cases illustrate rather well the clinical history of these patients and also the method of operation about which I especially wish to speak:

Case I. E. H. H., forty-six years of age, was first seen at the Massachusetts General Hospital on March 9, 1896. A year previous to this time she had had quite a decided discharge of blood from the rectum. Previous to that she had, for a considerable time, moderate hemorrhages which she thought were due to piles. She had also, on one or two occasions, passed little, soft, spongy masses, one of which was examined and called a polyp. The only sensations that had called her attention to the rectum was a dragging pain, and once an attack of rectal tenesmus.

Examination at the time I saw her showed a little growth with rough surface like a raspberry, situated in the upper part of the rectum and only reached with difficulty by the examining finger. On March 18, 1896, she was etherized and under the relaxation of anesthesia the growth could be reached and hooked down with the forefinger to an easily accessible portion of the rectum. An incision was made over the left side of the sacrum. The posterior edge of the sacrum was removed, and an opening made through the posterior rectal wall. Through this opening the little tumor, as large as an English walnut, was pulled out. It was attached to the anterior wall of the rectum, and a portion of that wall was pulled through the posterior opening with it. The attachment was by a rather broad pedicle but the growth did not seem to penetrate into the mucous membrane about. The pedicle and neighboring portion of the rectal wall was cut out, the wall of the rectum being closed with catgut stitches as it was cut. The closure in this way was very satisfactory, so much so, that after the removal of the growth, the posterior opening in the rectum was closely stitched up. The patient made a good recovery.

Examination of the growth showed it to be an adenoma; and Dr. W. F. Whitney, the pathologist who examined it, thought that the epithelium had not broken through the tunica propria, consequently that the tumor had not yet taken on a malignant character.

Case II. I. W. J., a rather delicate man of fifty-nine, was seen by me on February 21, 1897, in consultation with Dr. J. Q. A. McCollester of Waltham.

The patient had always been subject to dyspepsia. Two years before this time Mr. J. began to be especially troubled with indigestion, and at about the same time he also began to notice the presence of mucus and occasionally of blood in his stools.

These conditions had continued up to the time I saw him, with a gradual increase in the amount of mucus and blood, which, however, had never been excessive. The only pain or discomfort that he had suffered was that associated with indigestion and the consequent flatus.

A digital examination revealed a nodular growth high up in the rectum, which did not encircle the bowel but projected from the anterior wall. It seemed about as large as a good-sized prune, but its upper edge could not be reached. It seemed freely movable and was not painful nor did it bleed after the examination.

The diagnosis of adeno-carcinoma was made and its removal advised. Mr. J. was put to bed with a carefully regulated diet; and on March 2, 1897, the operation was done as follows:

With the patient lying on his right side, well over towards his face, an incision was made along the left border of the sacrum down to a point just below the tip of the coccyx. The coccyx and the left part of the sacrum, as high as the third foramen, was cut away with bone forceps. An opening was now made in the posterior wall of the rectum as high up as possible. With considerable traction the growth could be drawn down into the opening, but it could not be brought outside. The rectal wall was a good deal puckered where it gathered itself, as it were, into the base of the tumor.

An attempt was made to cut, bit by bit, through the attachments of the growth, stitching the rectal wall together as we went. This effort had to be abandoned, however, owing to the inaccessibility of the parts. The growth was then cut away with a margin of healthy rectal wall around it. As the tumor was situated on the wall of the rectum covered by peritoneum, we now had an opening into the peritoneal cavity, and, owing to the fact that a considerable portion of the rectal wall had been gathered into the growth, this opening was a large one. Again an effort was made to close this, but it was presently found that an accurate closure was impossible.

The next question was how to prevent the fecal contents of the bowel from escaping into the peritoneal cavity. Fortunately, our preliminary cleansing of the bowel had been very efficient, and up to this time we had not been incommoded by any escape of its contents.

I now took a deep stitch through the rectal wall, just above the opening left by the removal of the growth, and drew it forcibly down to the lower edge of the posterior opening in the bowel and attached it to the skin. In this way the opening in the anterior wall of the bowel was drawn down below the posterior opening so that the feces could escape posteriorly without reaching the opening into the peritoneal cavity. For further security this opening into the peritoneal cavity was snugly packed with iodoform gauze so as to protect it from any leakage of feces in that direction. This packing had the further advantage of checking all oozing from the wounded rectal wall. This arrangement worked as we intended to our complete satisfaction. The bowels moved freely without contamination of our peritoneal wound. At the end of three days the stitch holding the anterior rectal wall was cut, allowing it to spring up and resume its normal position.

The next day, believing the peritoneal cavity to be safely walled off, we began gradually to remove the gauze. This packing was wholly out in three or four days. The cavity left by its removal was of considerable size; but it was readily accessible, and was freely irrigated at each dressing. It gradually closed down until at the end of about fifty days it had entirely closed and only a slight pucker in the anterior rectal wall marked where it had been.

During this time Mr. J's health and strength had improved, so that he was in decidedly better condition than before the operation.

Finally, on May 8, 1897, the posterior opening in the rectum was refreshed and closed by buried catgut stitches, the skin being brought over it with silkworm-gut stitches. Healing was by first intention.

Since this time Mr. J. has remained well, having in the autumn of 1897 resumed an active business life. He was examined in February, 1898, by Dr. E. H. Stevens, of Cambridge, who found the rectal wall smooth without any sign of recurrence of the growth. At this time Mr. J. weighed more than he had ever done in his life.

Both of these cases show the slow rate of development of these tumors, and even in Case II, in which the tumor had a distinctly cancerous character, the growth was clearly circumscribed and had acquired no adhesions to parts about. Whether through the lymphatic system any extension of the disease to distant parts had occurred, it is still too early to say. The manner of removal by a posterior incision in the rectum high above the sphincter was eminently satisfactory in both cases. The closure of the rectal wall by sutures as the growth is cut away (Case II) is the method of choice, and for small and early growths would usually be feasible. In larger growths, especially when seated at a rather distant portion of the rectum, the difficulty of closing the opening must be great, as the stretched rectal wall springs back as it is cut and the opening being irregular its accurate closure is made impossible. Under these circumstances the plan adopted in my case may be found useful.

Another method of treating such a wound would be to reach it from above by a median abdominal incision, and to close it by sutures from the peritoneal side. This procedure was considered in the case reported, but the fear of infection in going directly from a rectal to an abdominal wound led to the adoption of the method used.

Besides the two cases above reported, the writer has had a number of cases of cancer of the rectum in which the Kraske incision has been used for the removal of the growth, from five to seven inches of the bowel having been removed on several occasions. In all of these cases an artificial anus has been established in the upper angle of the wound. The peritoneum has been opened in several of these operations but has been easily closed by stitches and has given no further trouble.

Some of these patients have been quite comfortable for a considerable time afterwards, while in others the newly-formed orifice has been sensitive and has occasioned more or less distress. All that were afterward heard from suffered recurrence of the disease;[2] but this is not strange, as in all of them the growth was far advanced when it came under observation. In all of them the immediate recovery from the operation was satisfactory.

In none of my cases have I carried out the plan of making an inguinal colotomy in preparation for an operation upon a rectal cancer, but I recognize the value of this diversion of the bowel contents when an extensive resection of the rectum is to be attempted, especially when it is desired to preserve the sphincter and to make an end-to-end suture after the removal of the growth. I have, on one occasion, resected a portion of the sigmoid flexure for cancer in a patient upon whom I had done a previous colotomy. The artificial opening above certainly relieved our stitches of all strain during the healing process and removed that source of danger and anxiety.

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[2] Since this was written a patient on whom a resection of about seven inches of the rectum was done fifteen months ago has reported and been examined. There is, as yet, no sign of recurrence.

Since this paper was read the writer has had a third case of rectal polyp (adeno-carcinoma), in which the operation was carried out on the lines above described. The growth, which was as large as a small fist, and grew from the anterior rectal wall, was removed through a posterior incision. Before cutting off the growth the pedicle, which was a broad one, was sewed through and through with a cobbler's stitch, which entirely controlled the hemorrhage, at the same time holding the rectal wound closely approximated. The patient, a very anemic middle-aged man, has done extremely well; and it is now ten days since the operation.

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Clinical Department.

HEMATOMA OF THE OVARY.[1]

BY W. H. BAKER, M.D., BOSTON.

Mrs. C. L. S. was referred to me by Dr. D. C. Rose, of Stoughton, May, 1897. Age twenty-nine years. Had been married five years. No children. Complained of more or less pain for eleven years, which had been so severe for five years that she had been unable to stand or walk more than three or four blocks, on account of the intense backache induced. Suffers more pain in the right side than in the left. Nothing unusual in regard to the menstrual periods. In addition to pain she has considered her health very poor on account of some digestive trouble for which she is under the care of Dr. Gannett. Has suffered from dysentery several times.

On examination a mass was felt, about the size of a goose-egg, in the left portion of the pelvis, which crowded the uterus well over to the right side. Mass also extended behind the uterus. This was thought to be either a distended tube or cystic ovary. From its firm attachment to the walls of the pelvis it was thought to be in all probability a dermoid or hematoma of the ovary, or a pyosalpinx.

February 26, 1898, she consulted me again, and was suffering so much that she was quite ready to entertain the idea of operative interference. The operation revealed a hematoma of the left ovary, which burst on freeing it from its adhesions. The sac, ovary and tube of that side were removed. From the right ovary, which was also adherent with a portion of the tube, was found a hematoma about the size of a walnut, which also ruptured in bringing it to the surface. As a considerable portion of the ovary looked healthy, and as the tube of that side was pervious, I dissected out the sac of the hematoma of this ovary, and then sewing up the ovary with interrupted sutures, it was left. Precaution, however, was taken to stitch the ovary to the upper portion of the right side of the uterus, to insure against forming adhesions again over the denuded portion of the right side of Douglas's fossa, the site of its former adhesions. Although the denuded surface at the bottom of the pelvis was large, and from it there was a great deal of oozing, still this was controlled in a short time by hot sponges, and the abdomen was closed. The patient is making a good recovery.

The case seemed of interest to report on account of the ability to remove a portion of one ovary and leave a sufficient amount of normal ovarian structure for her future usefulness, which, in a person of twenty-nine years of age, is an important consideration. It also is of interest as proving what I have observed in all similar cases that have come within my experience, as follows:

(1) That hematoma of the ovary almost always affects both ovaries.

(2) That it is invariably accompanied by dense adhesions to the surrounding parts.

(3) On account of the friable condition of the ovarian structure in these cases the sac invariably bursts in its removal.

(4) That the discharge of the contents of the sac, if ordinary precautions are taken in regard to cleansing, either by sponges or washings, does not complicate the recovery of the patient.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, March 7, 1898, the President, Dr. R. H. Fitz, in the chair.

Dr. W. H. Baker showed a

SPECIMEN OF HEMATOMA OF OVARY.[1]

Dr. Richardson: I recall two cases of hemorrhage of the ovary, both of the right ovary; and in one case the ovary ruptured and filled the abdomen with blood, so that it seemed to us it was an extra-uterine pregnancy, but careful examination failed to show any evidence of pregnancy. This was a very grave case, but the patient recovered. In another case we found the ovary much distended with blood. These cases interested me very much at the time, and I supposed, of course, from there being such an extensive hemorrhage, especially in the first case, that it must be a ruptured extra-uterine pregnancy. Dr. Whitney was not able to find the evidence of pregnancy in either case. I am glad to hear what Dr. Baker said about the conservative treatment of the ovary. I have removed one or two simple tumors from the ovary, stitched the ovary up with interrupted suture; and I don't see why the patient should not be just as well as ever.

Dr. Cabot: I should like to ask Dr. Baker about fixation of the ovary to the uterus, whether he has tried that in cases he has followed subsequently.

Dr. Baker: I do not recall in my own experience cases where pregnancies have followed the stitching up of the ovary. I must admit that I have not followed the cases sufficiently well to know. I am sure that where adhesions are broken up freely in the bottom of the pelvis there is great danger of a recurrence of these adhesions if the ovary is left without such stitching. I have many times found a distended tube, and removed the distal half, stitching the mucous and serous membranes together and thus leaving a fairly good tube. I have seen many reported cases where this has been done and pregnancy following had gone on to childbirth. I have also sometimes removed a small cyst the size of a peach from one ovary and left perhaps two-thirds of the ovary which seemed healthy. I think a little careful dissection will oftentimes save a part of an ovary which is a matter of considerable importance aside from the hope of child-bearing, for we may thus prevent in a young woman the atrophy of the uterus and vagina which sometimes will follow removal of both ovaries.

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[1] Reported before the Boston Society for Medical Improvement, March 7, 1898.

[1] See page 546 of the Journal.

Dr. A. T. Cabot said that he was extremely interested in the conservative surgery of the ovary, and that he recalled a case in which, after freeing a prolapsed and adherent ovary, he had secured it by a catgut stitch to the peritoneum at the brim of the pelvis, thus preventing its slipping back into its faulty position.

In a recent case, too, he had dissected off of an ovary a cyst as large as a pullet's egg. He united the ovarian wound with catgut stitches, and the patient made a good recovery.

Dr. A. T. Cabot read a paper entitled

SOME OBSERVATIONS UPON MALIGNANT ADENOMA OF THE RECTUM, AND ITS TREATMENT BY KRASKE'S OPERATION.[2]

Dr. Cabot: About the pathology I would ask Dr. Fitz to state if my idea is correct, that except the epithelioma there is no cancer of the rectum except an adeno-carcinoma recognized: my impression is that that has this localized character, and therefore is of slow growth. Although the cases we see are probably older than the patient is aware of, if we could get our patients earlier we should have the tumors in the stage when they are still localized and could be removed thoroughly. I don't find any other carcinoma.

Dr. R. H. Fitz: One of the terms for the tumors under consideration which is very convenient has not been used. It is based upon the characteristics of the cells, especially upon their cylindrical shape. Among these cylindrical-celled tumors there are those which pursue a prolonged course and produce but little constitutional disturbance and there are others which grow with considerable rapidity and prove fatal. In general the distinction holds good with reference to such tumors of the rectum that applies to growths of the uterus. There are new formations in the womb which are not so much circumscribed tumors as diffused thickenings of the mucous membrane. They are designated hyperplastic endometritis when there is simply an extensive thickening of the uterine mucous membrane which on microscopic examination shows prolonged pouches lined with cylindrical epithelium. The growth is essentially a hyperplasia of structures which are normal to the part. With these growths will be associated a chronic, watery or hemorrhagic discharge from the vagina continuing perhaps a number of years. In the course of time, if no radical treatment is adopted, the person gradually becomes anemic and eventually may die from secondary fatty degenerations in consequence of the profound anemia. In such cases the uterus may be found so enlarged that its cavity easily contains the fist and the wall may be trabeculated from extension of the epithelial growth between the bundles of muscle which compose the uterine wall, but there is no extension of the disease to any other part of the body. The distinction between the early hyperplastic endometritis and the later malignant adenoma or cylindrical-celled cancer of the uterus is based essentially upon the absence or presence of the adenoid growth within the uterine wall. The same holds true with reference to the rectum, in which growths occur of the nature of a diffused hyperplasia of the mucous membrane. Dr. Homans, many years ago, reported such a case which he treated by reaming, essentially a curetting, although in those days, if I remember aright, the curette was practically unknown. In such cases there is not so much a circumscribed tumor as a diffused thickening of the mucous membrane, and the elongated cylindrical-celled pouches which represent a glandular hyperplasia while they remain limited to the mucous membrane and do not extend into the submucous tissue are the characteristic of the adenoma. This condition, adenoma of the rectum, is essentially a hyperplastic proctitis analogous to the above mentioned hyperplastic endometritis, which commonly is not spoken of as adenoma of the uterus. These are the growths which, when removed thoroughly, are not likely to recur. On the contrary, there are growths which simulate very closely in structure these adenomata, but which do extend into the submucous tissue irregularly and in a more or less atypical form. These may form circumscribed tumors perhaps of considerable extent, as in the case mentioned by Dr. Richardson, with or without secondary growths elsewhere, especially in the liver. This is the form of growth to which the term malignant adenoma often is applied, and for which adeno-carcinoma and cylindrical-celled cancer are usually synonymes.

I quite agree with Dr. Cabot that the cylindrical-celled adenoma if removed early gives considerable promise of not returning, but if left for a long time without treatment is likely to become extended into the deeper structures and eventually into more remote parts having become transformed into a malignant adenoma or cancer. To repeat, I do not think there is any practical distinction between a malignant adenoma, an adeno-carcinoma and a carcinoma, nor between a simple adenoma of the rectum and a hyperplastic proctitis. Clinical experience leads very directly to the conclusion that the former may be the direct outcome of the latter.

Dr. A. Coolidge, Jr., read a paper on

CHANGES IN THE TURBINATE BONES IN CONNECTION WITH DEFORMITIES OF THE SEPTUM.[3]

Dr. Langmaid: Dr. Coolidge has given us such an exhaustive account, and so plain a one, that it is very difficult to add anything to it. Of course, he had spoken of something which may present itself to us many times a day. We always have to come to a decision, whether there is a bent septum, what this large turbinate means, etc., and what shall be done. I am willing to accept Dr. Coolidge's explanation and also his views with regard to treatment. I always regret to have a patient come to me with a bent septum, especially the cartilaginous part, and evidence that the enlarged turbinate which belongs to the concave side has been in some way destroyed either by snare or by actual cautery, for I find in those cases exactly what Dr. Coolidge has described, namely, an appearance like an atrophic condition. In one case I remember there was no trace of the lower turbinate. The case had come from a distant city. The man was complaining very much of a dry condition of the nose and throat and when I looked into his nose I supposed it was a case of atrophic catarrh. It proved, however, to be one in which the damage had been done by operation. His description of the amount of burning and snaring which he had suffered was pitiable and I was obliged to dismiss him since there was very little to be done except to give such directions as we do in atrophic catarrh, insertion of pledgets of cotton, use of oily spray, etc.

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[2] See page 543 of the Journal.

[3] See page 547 of the Journal.

With regard to the function of the turbinates, Dr. Coolidge has said that the theory has been that the changes in size have been due to the necessity for the passage of air. I will say that I have considered the function of the turbinates to be conservative to a great degree and have acted upon that principle very largely in my practice. I remember when I was quite young wondering why it was in a summer's day when I drove through a cold meadow my nose immediately became stopped, and when I emerged from the meadow into the warm air my nose immediately opened; and that was a problem until Dr. H. J. Bigelow drew attention to the real structure of the turbinates and their physiology, and showed that they were erectile bodies. The function of the turbinates is to protect the nose and respiratory tract from cold or heat which would irritate and dry the mucous membrane. The turbinates respond instantly to the stimulus of harmful external conditions and thorough inhibition of vaso-motor agencies, congestion (swelling) results which is for a time protective, in so far as it limits the amount of inspired cold, or very dry air. The vicious conditions being removed, the inhibitive stimulus to the vaso-motor system is no longer active and the congestion and swelling subside. A normal, patent condition of the nostril ensues. If for any reason the external or internal cause for partial occlusion of the nostril persists, just so long the turbinates will remain congested.

I quite agree with Dr. Coolidge, and I believe that the reason for the enlarged turbinate on the concave side is to regulate the amount of air which passes through there. The point I would make, and which perhaps Dr. Coolidge would accept, is, that as he does not agree that the difference in size of the turbinates is owing to the passage of air, perhaps he will accept the fact that the impulse of the physiological change is a reflex one, generally external, from the atmosphere. It may be that the turbinates become enlarged from some constitutional condition, but where the large turbinate is found on the concave side it seems to me that the enlargement is owing to repeated reflex conditions, a resistance to some harmful external condition or cause. I have found in the cases where there was a bend of the cartilaginous septum, that where that could be reduced or even loosened up so that a larger amount of air could be gotten into the narrow nostril, this enlarged turbinate has of itself decreased in size, which would, it seems to me, as far as it goes, rather prove Dr. Coolidge's theory. With regard to the congenital closure of the nares, where either one choana or the other is impervious, I cannot say that the same condition would not hold, provided the theory of reflex disturbance is accepted because the function is there. Nature is all ready to perform the function and the exciting cause for reflex action happening, immediately or very soon this change in the turbinate takes place. I quite agree with Dr. Coolidge, then, that this enlargement of the turbinate on the concave side is not to be considered pathological, and other things being equal the turbinate is not to be proceeded against in a summary manner.

DR. FARLOW: I am very glad to hear this paper of Dr. Coolidge. When there seems to be insufficient patency of the nose, it is the conspicuous, easily seen inferior turbinate which generally attracts attention, and, if this is larger than usual, means are taken to bring about a reduction in its size, without a thought as to whether this enlargement may not have a physiological base.

The swelling of a turbinate can be brought about by contact with cold or moist air, dust or any irritant, and we can often see it diminish in size when touched with a probe, phenomena which seem to me to indicate the reflex nature of the process.

It is not an easy matter, in many instances, to determine by inspection of the nostrils whether they are sufficiently large to allow proper nasal respiration, especially as in the daytime, when the examination is generally made, the nose is perhaps much less likely to cause the feeling of being too narrow than at night.

I quite agree with the statement that a physiological swelling may go beyond proper limits and require treatment to keep it from being a source of annoyance.

DR. GOODALE: I want to say, in regard to Dr. Coolidge's paper, that it seems to me to be of particular value from the fact that it compels us to alter very distinctly some previous conceptions in regard to the causes of pathological enlargement of the intra-nasal structures. The theory that the respiratory alterations of intra-nasal air pressure were of influence in bringing this about, is one that has been entertained by some observers, particularly in view of the conditions we know to be present in adenoid disease in which these alterations are less than usual and we see the conditions in the inside of the nose to correspond, that is to say, we see in adenoid disease, generally, at least, a smaller size of the turbinates than we do if there is free nasal respiration. On the basis of the old theory, that of course would be explained from the fact that the air passes less freely than usual through the nose or is entirely prevented from passing and as a result the mucous membrane does not receive the stimulus it should have in bringing about proper nutrition. These two cases Dr. Coolidge has spoken of show that in certain instances such a respiratory influence is not necessary to alter the size of the intra-nasal structures and the ground seems to have been taken from under our feet in regard to these cases. In seeking for an explanation it is most natural to look to one from some nervous influence, since we know that slight nervous disturbances alter very considerably the size of the erectile tissue from derangements in other organs. For instance, on excitement of the sexual centres, the nasal structures can undergo very rapid change in size and if the stimulus be often enough repeated, the change may become permanent.

It seems to me essential to investigate at least whether a bend of the septum producing a convexity of one side may not in some reflex way, perhaps from mutual interdependence of the turbinates of one side on those of the other, bring about an enlargement of the turbinates on the concave side of the septum. It would seem at least if we are to be deprived of the theory of respiratory influence we must look for it in some nervous channel. I think the paper is extremely valuable because it has made it necessary for us to alter our conception of the condition present, but we have not at present any definite substitute to offer for the old theory.

Dr. Coolidge: The delicate physiological balance of the nose is well known. I want to draw attention to the delicate anatomical balance, the change in the size of the turbinates themselves even involving the ethmoid cells as is seen in one of those skulls which are being passed around. Dr. Farlow spoke of judging of the patency of the nostrils by having patients breathe on a mirror. But we often find in a practically normal nose that at one time one nostril, and at another time the other one, is admitting most of the air. I did not mean to take up the long subject of operations on the nasal septum. I merely mentioned that most of these operations involve problems in front of the nasal cavities proper. It seems to me that one reason why so little harm is done by many of the applications to the turbinated bodies is on account of the great power of adaptation to different circumstances which these bodies possess. A turbinate can enlarge to such an extent that it will not be crippled by taking a little piece of from it or by putting some caustic on it. I do not question the great benefit often obtained from chromic acid, for instance, but I do not believe that the result is due simply to the removal of tissue.

Dr. Farlow has called attention to the over enlargement of the turbinates opposite a concavity, so that less than the normal amount of air can pass. I have noticed the same thing myself. I have tried to explain it by supposing that as the opposite side is obstructed by the convexity of the septum, the concave side becomes equally narrow in order to keep the air-carrying capacity of the two passages nearly equal. I am aware that when one nostril is occluded by a bend of the cartilaginous septum opposite the nasal process of the maxillary bone the other or open nasal passage does not tend to close, but often furnishes sufficient space for comfortable nasal respiration.

Where there has been nasal obstruction due to adenoid vegetations the turbinates are not small. The nasal cavities in these cases are often narrow and the turbinates consequently flattened.

To go back to the question of the cause of the adjustment of the turbinates to the septum it seems to me to be perfectly proper to doubt one explanation even if we have no substitute to offer. Many phenomena of growth in the body cannot be explained by any mechanical process. Even to say that it is a trophic change regulated by the nervous system does not explain much. Septa are commonly nearly perpendicular in early childhood. They become deformed gradually, and the turbinates change their shape to correspond, or possibly they all change together from some common cause, for the causes of the irregularities of septa deserve a better explanation than they have commonly received.

Recent Literature.

A Practical Text-book of the Diseases of Women. By Arthur H. N. Lewers, M.D. Lond., Obstetric Physician to the London Hospital, etc. Fifth edition, 526 pp., with 174 illustrations, four colored plates and 71 illustrative cases. Philadelphia: P. Blakiston, Son & Co. 1897.

This is the fifth edition, which brings the work to its ten thousandth copy; and the most casual inspection of the book will at once show the reason for its having had a sale which is large for any book, phenomenally large for a technical work, and still more extreme for one devoted to a specialty. In the chapter devoted to the major operations one notes an absence of the more advanced technique which American operators now believe to be so essential to success. In the chapters devoted to the minor operations of the subject, the author's free use of the uterine sound, his routine use of the catheter, and his readiness to use tents in dilatation of the cervix, strike one as behind the times, but these are the only criticisms to be made upon the book. Its sensible, practical way of approaching the subject, its great attention to practical details, its thoroughness and clearness must make it of great value to any one, and of exceptional value to the inexperienced. It is a pleasure to review so praiseworthy a volume.

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. Sixteenth year. Bristol: John Wright & Co. 1898.

Those who are familiar with this handy annual and index will have learned to appreciate it. It is smaller than some of the more recent year-books, but its purpose is judiciously outlined and well executed.

The publishers have in contemplation an index covering the last twelve issues.

A System of Practical Medicine by American Authors. Edited by Alfred Lee Loomis, M.D., LL.D., and William Gilman Thompson, M.D. Volume III. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1898.

This volume contains articles on Diseases of the Alimentary Canal; Diseases of the Peritoneum; Diseases of the Liver and Gall-Bladder; Diseases of the Spleen; Diseases of the Pancreas; Diseases of the Thyroid Gland; Chronic Metal-Poisoning; Alcoholism; Morphinism; Infectious Diseases Common to Man and Animals — Glanders, Anthrax, Actinomycosis; Purpura; Beri-Beri; Hemophilia; Diabetes; Insolation.

The volumes of this System are large royal octavos, and this one has more than 900 pages, and covers a great variety of subjects. Many of the individual chapters are excellent; notably those on Diseases of the Mouth, Tongue, Tonsils, Pharynx and Salivary Glands, by Dr. R. C. Cabot; on Trichinosis by Dr. George Dock; on Food-Poisoning, by Dr. V. C. Vaughan; on Diseases of the Liver and Gall-Bladder, by Dr. J. E. Graham; on Diseases of the Thyroid Gland, by Dr. F. P. Kinnicutt.

Some of the illustrations are very good The paper and printing are all that could be asked for.

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MEDICAL MEETINGS.

THIS is the season of medical meetings. All over the country men are coming together who are interested in some one line of medical work, to exchange ideas, to express their own personal opinions and to listen with more or less deference to the opinions of others. The situation is always an interesting one, and offers many points for psychological speculation.

In general it would appear that the medical meeting is an institution which shows a marked tendency to increase. No sooner do we learn with a sense of inward gratification that this or that society has disbanded forever, than we hear that two others have sprung up in its place, representing perhaps opposing factions, which thereafter go on their own ways, each no doubt better because of its new rivalry. In this way medical societies, like medical journals, are forever multiplying, regardless of their real value to medical progress. Coincident with this actual increase is a growing tendency on the part of the members of such societies to bewail their multiplication. One hears the reiterated statements from every source, "There are too many societies"; "I have absolutely given up going to any of them"; and occasionally the more candid remark, "I only go when I read a paper." Still people do go, a few certainly to every meeting; and the societies drag out their existence year after year, with waning or waxing interest, as the case may be.

Evidently there is much food for reflection in this whole matter. In spite of our protests, most of us find ourselves, occasionally at least, at medical meetings, and regard it as no great disparagement. The reasons for this are not far to seek: some of us, a few, go to learn; some of us, younger men, go to be seen; some of us go to teach. No doubt each of these motives is operative. Let us take them up in order.

First, about learning. We are ready at once to admit that this is possible to a limited degree. From hearing another speak we, no doubt, get some ideas, but they are usually too vague to be of practical value. It is, however, not often possible, certainly for most men, to really learn from a paper read by a specialist. Since every paper to be of value must, in these days, be the result of special work, it too frequently happens that the auditor, dazed perhaps by the reader's learning, is chagrined by his own failure of comprehension. This is inevitable, and is sounding the death-knell of the general medical meeting as a place from which information is to be gleaned. Hence the wretched attendance, and the formation of special societies.

As to the second point, that some of us go to be seen. This is a perfectly legitimate motive. The physician has a peculiarly poor opportunity to bring himself before the public eye. He is even more limited in this regard than the lawyer, who is allowed to parade his name in large letters in conspicious places, and even indicate the special character of his calling. The young medical practitioner retires into obscurity as soon as he begins his life-work, unless by some means he can bring himself to the notice of his elders. Therefore, among other things, he goes to medical meetings; he listens while his superiors in years read papers descriptive of their wide experience; he occasionally musters up courage to say a few words himself, thereby increasing his self-confidence and attracting to himself his rightful share of attention. Then, finally, he is himself asked to read a paper, which flatters him; he prepares it carefully, and with all modern means of research, and finds too often, when the evening comes, an array of vacant chairs which are totally unresponsive. This is a certain disappointment; but he learns that the older men, to whom he so patiently listened, are quite satiated with medical meetings; that they have no interest in his communication; and that the younger generation find him not yet quite experienced enough to meet their crying needs.

The really enthusiastic attendants of medical meetings are undoubtedly the third class, or those who go to teach, and incidentally to let their colleagues know of the activity of their work or practice. These are the readers of papers. They are the men who are brilliant in research or successful in practice. They are full of interest in their work, and find it to the advantage of other people, as well as to their own, to make public their accomplishments. They are listened to with varying degrees of interest and respect, depending upon many subtle facts, some of which we have already indicated.

When we transfer our attention from the local meeting to the national one, we are often a little surprised to find that human nature is the same in other parts of the country as in our own small community. We somehow expect something a little different there; we journey many miles to a distant city, with the feeling that there certainly every one will be eager to listen to our original communication. But we are always disappointed. Every one, just as at home, is exceedingly interested in himself and his own addition to medical progress; but he finds himself curiously uninterested in others' communications, and what is more galling, but no less natural, he finds every one else curiously uninterested in his. It is the same everlasting struggle for recognition, which rarely comes spontaneously. It is a perfectly human attribute, but its manifestations are often unpleasant.

This is, perhaps, too bare a statement of what seem to us the facts; but an analysis of the situation, and even a superficial observation, must lead us to some such opinion. Yet medical societies continue to flourish, and undoubtedly will do so more and more. Most of us remember such gatherings with the very greatest pleasure, but the pleasure is a social rather than an educational one. Note, for example, in passing, the stimulation to attendance occasioned by the most meagre refreshments. It is not that we are hungry, but simply that a sandwich forms a bond of union between men that abstract reason is totally incapable of accomplishing. In other words, we are gregarious beings. We enjoy meeting our fellow-workers, but we wish to meet them in some other way than through the medium of a medical communication. Of this there cannot be the slightest doubt.

Still medical meetings are valuable, and so are medical papers read at such meetings; only we must recognize sooner or later that a medical meeting is a complex matter, in which human nature appears in some of its most entertaining guises. The sooner we realize this fact, the sooner shall we come to get the very most out of such assemblies.

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RESULTS OF PROLONGED INSOMNIA.

Preyer was the first to propound the toxic theory of sleep, according to which certain waste products during an active condition of body and mind are generated, which accumulate in the blood, cause the sensation of fatigue, and "intoxicate the superior nervous centres to the point of inaction which is the equivalent of sleep." There is general recognition that this theory does not altogether explain that common and necessary phenomena of the animal kingdom — there must be other factors, still imperfectly understood.

There are very few observations on record concerning the results of prolonged insomnia, both as to the psychical troubles and palpable alterations of the central nervous system engendered. An Italian physiologist, Agostini, has noted two striking instances in the human subject where, as a result of long want of sleep, temporary psychical disturbances were observed.[1]

The first patient was a railroad engineer, a robust man aged forty-five years, of no hereditary or personal neuropathic antecedents, and not addicted to alcohol; who, by reason of the sickness of his fireman, had the sole charge of his engine for six successive days and nights. During the last night of his service, he left his engine at a station and proceeded to utter invectives against the people gathered there and to commit disorderly acts. He was taken to an asylum, where his condition was found to be one of mental confusion with excitement and hallucinations. After a sleep of fifteen hours without awaking, he was completely restored, with no remembrance of what had taken place during the brief period of his delirium.

The next case was that of a young woman, a robust chambermaid, who after passing nine days and nights by the bedside of her sick mistress, was taken all at once with psychical troubles on the morning of the tenth day. She imagined that she had been the victim of gross outrages, did senseless things, muttered incoherent expressions, and passed suddenly from profound gloom to excessive gayety. After a long sleep she woke in a normal mental state, with but a confused and partial remembrance of what had passed. She resumed her place by the bed of her sick mistress, and after a night of watching, was again taken with an attack of mental confusion with delirium. She completely recovered after several days of complete repose.

Similar cases, in which the morbid symptoms were imputable to the insomnia alone, to the exclusion of every other cause of exhaustion, are reported by Hammond, Renaudin, Meynert, Maury and others.

Agostini regards this kind of insanity as "acute mental confusion." He proposes to designate it as "transitory delirium of agrypnia" (the Greek word meaning *insomnia*), and would class it in the group of acute psychoses by exhaustion or intoxication. We have, in fact, to do with states of delirium, which appear suddenly and are characterized by mental confusion, with hallucinations, incoherence of actions, varied emotional manifestations and consecutive amnesia. The condition is a sort of half-dream, of ephemeral duration and favorable prognosis, lasting from several hours to several days.

In order to study the histological alterations in the cerebra under the influence of prolonged deprivation of sleep, Agostini instituted some experiments on a couple of dogs which were placed under conditions in which sleep was impossible. One dog was confined in a suspended metallic cage furnished with bells which at each movement of the animal made a low din in his ears. There was also a relay of attendants to watch the dog night and day to prevent him from lying down and sleeping, and to give him food and drink. This experiment was one of exquisite cruelty, and the same may be said of the succeeding experiment.

The first dog, a robust animal weighing eight kilogrammes, on the seventeenth day of the experiment fell into a state of extreme prostration, and became insensible to powerful excitations. Wishing to avoid all alteration of the nerve centres attributable to the preagonic period, Agostini trephined the cranium while the animal was still alive, and removed divers parts of the cerebrum by excision. Only when the membranes were incised were there observed certain manifestations of pain. To the naked eye the cerebrum and its membranes presented nothing abnormal. The histological examination, made after the method of Nissl, showed the presence of characteristic cell lesions. These alterations, which were found throughout the entire extent of the cortical substance, but especially in the frontal lobes, consisted in a disaggregation, in a fragmentation more or less fine, of the chromatic substance, beginning for the most part by the perinuclear zone and extending thence to the entire cell. Sometimes the cytoplasm presented the alterations characteristic of vacuolar atrophy. These lesions were in the main identical with those which Daddi had noted in his experiments on animals which were subjected to excessive muscular fatigue as well as to prolonged insomnia; they also resembled the cell changes described in poisoning by arsenic, lead, alcohol, etc.

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[1] Riv. Sperim. di freniatria e di med. leg., xxiv, 1; Semaine Méd., May 14, 1898.

In the second dog, younger and less robust, which died of exhaustion on the twelfth day of the experimentation, the histological lesions of the cerebral cells were the same.

The similarity of the alterations found in these two dogs to those which have been observed in animals poisoned by divers toxic substances leads the Italian experimenter to conclude that the delirium of insomnia is due to an auto-intoxication of the cellular elements of the nerve centres, due to excessive disintegration of these centres. Generalizing still further, Agostini states the belief that the mental affections belonging to the group of psychoses properly so called, such as mania, lypemania, and the divers kinds of mental confusion, considered heretofore as essential forms, *sine materia*, are often of autotoxic origin, that is, the result of lesions of the nerve cells produced by the action of poisons generated in the organism.

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SANITARY PROBLEMS OF A CUBAN INVASION.

A meeting of American and Cuban physicians who have enlisted in the Red Cross service was recently held at the Red Cross Hospital, on West 100th Street, to discuss the sanitary problems presented by an invasion of Cuba. Dr. E. Nunez, at one time director of the Hospital of Our Mother in Havana, presided; Dr. Juan de Sollossa, formerly a surgeon in the Spanish army, acted as Spanish secretary, and Dr. F. B. Carpenter was the English secretary.

From statements by Drs. Francis Revera, F. Marill, Julius Carbonell and C. R. Gill, it appeared that in the Cuban war 75 per cent. of the Spanish army suffered from endemic diseases, 50 per cent. from yellow fever (about equally divided between mild and serious cases), and 25 per cent. from malarial fever. Dr. Sollossa said that before the war 30 per cent. of all foreigners suffered from these diseases, and the mortality was about 10 per cent. During the war the percentage of deaths in the army from disease alone was more than 25 per cent. With improved hygienic measures this death-rate could be considerably reduced. During the first three months of the year there was little yellow fever; in April, May, June and July more cases occurred, though they were not numerous; and from the end of August to the middle of November the disease was most prevalent and severe. Taking proper precautions, those who had good health during the early months could usually escape an attack during the unhealthy months. Malarial fever was most prevalent during the rainy season.

Dr. A. M. Lesser, Surgeon-in-chief of the American Red Cross Society, said that diseases were most prevalent near the coast and in large cities. Six to twelve miles from the coast, at an altitude of one thousand feet, all persons were comparatively immune. The mountains were easy of access and could be used for hospitals, as far as the conditions of war permitted. In the quartering of soldiers it was especially advisable to avoid the cities, and if they were encamped in tents it was essential that the tents should be impervious to the heavy dews. It was to be remembered that any person suffering from yellow fever or severe malarial fever would be unfit for duty for at least six or seven weeks, so that unless the most careful sanitary precautions were taken, only a portion of the army could be counted on for regular duty, the rest being under hospital treatment. As regards the relative healthfulness of Cuba and Tampa and Key West, all the physicians present agreed that the climate of Florida was worse than that of the higher portions of Cuba, and that it would be better to keep the ill and wounded on high ground in Cuba than to remove them to Florida, thus subjecting them to the dangers of seasickness in addition to less salubrious conditions on their arrival.

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MEDICAL NOTES.

Measles is reported to be prevalent among the soldiers in camp at Hempstead, San Francisco and elsewhere.

"The Journal of Tropical Medicine" is the name of a new monthly journal to be published in London by John Bale, Sons & Danielsson, under the editorial management of Mr. James Cantlie and Dr. W. J. Simpson.

Plague in China. — There is unfortunately only too much reason to suppose that plague is becoming increasingly prevalent in some of the coast cities of China. During the twenty-four hours up to noon, March 31st, 11 new cases and 10 deaths were reported in Hong Kong, making the total since January 1st (ninety days) 224 cases and 195 deaths. Plague is also said to prevail in Canton to the extent of about 100 cases a week, and to be increasing in Macao.

Sir William Stokes Honored. — An address and some valuable plate were presented to Sir William Stokes on May 7th, on the occasion of the completion of the twenty-fifth year of his professorship at the College of Surgeons, Dublin. In the evening Sir William Stokes was entertained at dinner.

RÖNTGEN RECEIVES ANOTHER PRIZE — The Philosophical Faculty of the University of Göttingen has awarded the Otto Vahlbruch prize for the greatest advance in science during the past two years to Professor Röntgen, of Würzburg. This prize was founded in 1896 and is of the value of 9,200 marks.

HEPATIC ABSCESS CAUSED BY ASCARIS LUMBRICOIDES. — In the *Deutsche Medicinische Wochenschrift* of May 19th Dr. Bruno Leick, assistant physician in the Greifswald University Clinic, reports a case in which a hepatic abscess was found to contain an ascaris lumbricoides. The patient, thirty-five years of age, was admitted to the hospital in June, 1897. She was greatly emaciated; her temperature varying from normal to 101.4°. Her abdomen contained a tumor larger than a child's head, which extended from the navel to the ensiform process, and by its elasticity, taken in connection with the patient's enfeebled and hectic condition, suggested a suppurating hydatid. Laparotomy on July 7th disclosed a small encapsuled abscess in front of the liver, and a puncture which was made in its base passed through three-quarters of an inch of liver substance into an abscess cavity containing creamy fetid pus. On July 10th, whilst the dressings were being changed, a living ascaris was found in the abscess. The patient made a good recovery.

A NATIONAL SOCIETY TO STUDY EPILEPSY. — At a meeting held at the Academy of Medicine in New York City on the 24th of May, representatives from eight States were present to organize a "National Society for the Study of Epilepsy and the Care and Treatment of Epileptics." Speeches favoring the formation of such a society were made by Drs. Abram Jacobi, Ira Van Gieson, C. A. Herter, Frederick Peterson, E. C. Fisher and William P. Spratling, of New York; Dr. H. C. Rutter, of Ohio; Dr. William N. Bullard, of Massachusetts; and Dr. B. D. Evans, of New Jersey. The following officers were elected: President, Hon. William Pryor Letchworth, LL.D., New York; First Vice-President, Dr. Frederick Peterson, New York; Second Vice-President, Prof. William Osler, M.D., Maryland; Secretary, Dr. William P. Spratling, New York; Treasurer, Dr. H. C. Rutter, Ohio. The society organized with forty-four members. Application for membership should be addressed to the Secretary at Craig Colony, Sonyea, N. Y.

INHUMAN BULLETS. — As noted by our Berlin correspondent in a recent issue, Professor Bruns, of Tübingen, has been making experiments with the "Dum Dum bullet," and has found that it possesses cruelly explosive effects. Professor Bruns called upon the German Government to endeavor to bring about an agreement among the Powers that such bullets should be forbidden. As was noted in our issue of March 31st, the question of the special effects produced by the Dum Dum bullet, was brought up a short time ago in the House of Commons, and the reply of the goverment was to the effect that the reports as to its mutilating properties were erroneous, and that its effects were not those of an explosive bullet. In view, however, of Professor Bruns's accusations, it would be of interest to learn from the medical officers engaged in the war how far his statements can be actually disproved. Although theoretically the Dum Dum is not an "explosive bullet," are not the effects of a bullet that "spreads out like a mushroom" when it hits the body, as bad as are those of an "explosive bullet," and was it not with the intention of producing severer and more disabling wounds that the British soldiers in India filed off the nickel tips of their bullets? Professor Bruns will render it necessary for the British Government to explain the difference between tweedledum and tweedledee. It would seem justifiable to use a bullet for the purpose of stopping a charge of savages at close range, which would be excluded in battles between the armies of civilized nations.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, June 8, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 15, scarlet fever 15, measles 58, typhoid fever 15.

THE NURSES' HOME AT DANVERS. — The new Nurses' Home Building at the Danvers Lunatic Hospital will be formally opened this evening.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. — The graduation exercises were held in Huntington Hall, the Rogers Building, 491 Boylston Street, on Tuesday, June 7, 1898, at half-past two o'clock.

CONTRACT MEDICAL PRACTICE. — The Connecticut State Medical Society, at the annual meeting recently held, passed a resolution discountenancing the making of contracts for medical service at a fixed annual rate with lodges, mutual-benefit societies and medical clubs.

THE CALEB FISKE PRIZE. — At the annual meeting of the Rhode Island Medical Society, held June 2d, the trustees of the Caleb Fiske Fund reported that they had awarded a prize of three hundred and fifty dollars to Dr. David I. Wolfstein, of Cincinnati, for his essay on "The Neuron Theory as related to Brain and Nerve Disease." For the next year the trustees offer a prize of two hundred and fifty dollars for the best essay on "The Etiology of Gout."

AN ACT RELATIVE TO THE SUPPORT OF STATE POOR BY CITIES AND TOWNS. — The following act has recently been passed by the Massachusetts Legislature. It is hoped that it may serve to lessen in some degree the present abuse of medical charity.

Section twenty-six of chapter eighty-six of the Public Statutes, as amended by chapter two hundred and eleven of the acts of the year eighteen hundred and eighty-five, and by chapter one hundred and fifty-three of the acts of the year eighteen hundred and ninety-one, is hereby amended by inserting after the word "the," in the first line, the word: — reasonable, — and by striking out all of said section after the word "Commonwealth," in the sixth line, and inserting in place thereof the words: — The bills for such support shall not be allowed unless they are endorsed with the distinct declaration that, after full investigation, no kindred able to pay the amount charged have been found and that the amount has actually been paid from the city or town treasury, nor unless they are approved by the State board or by some person designated by it; and not more than five dollars a week shall be allowed for the support of a person in a city or town hospital, so as to read as follows: — *Section* 26. The reasonable expense incurred by a city or town under the provisions of the preceding section, within five days next before notice has been given as therein required, and also after the giving of such notice and until such sick person is able to be removed to the almshouse shall be reimbursed by the Commonwealth. The bills for such support shall not be allowed unless they are endorsed *with the distinct declaration that, after full investigation, no kindred able to pay the amount charged have been found*, and that the amount has actually been paid from the city or town treasury, nor unless they are approved by the State board or by some person designated by it; and not more than five dollars a week shall be allowed for the support of a person in a city or town hospital. [*Approved, April* 29, 1898.

NEW YORK.

The American National Red Cross Relief Association. — A joint meeting of the Executive Committee of the American National Red Cross Relief Association with the Women's Committee on Auxiliaries was held during the past week at the office of the St. John's Guild. The Executive Committee declared in favor of purchasing and promptly forwarding to Key West a sea-going tug for the use of Miss Clara Barton; also of purchasing or chartering a Red Cross hospital-ship, to be equipped by the efforts of the Women's Auxiliary Committee. At a subsequent meeting, held at the Chamber of Commerce, the names of Drs. Richard H. Derby and Andrew McCosh were added to the Medical Advisory Board, which has charge of the enlisting of physicians and nurses in the Red Cross service. On May 31st there was held at the residence of the President, Mrs. James Speyer, a meeting of the Trained Nurses' Maintenance Red Cross Auxiliary, the object of which is to maintain one hundred trained nurses on one or more hospital ships. These will be carefully selected, and will serve without remuneration, and it is estimated that each nurse may be supported at a cost of $25 monthly. It was announced at the meeting that a sufficient amount had been pledged by a large number of ladies to ensure a total of $1,156 per month as long as the war should last.

A Bequest to the Pennsylvania Hospital. — Frederick F. Ayer, of New York, has given $25,000 to supplement a bequest of $50,000 by his mother, Mrs. James C. Ayer, who died in Paris in January last, for a pathological and bacteriological laboratory at the Pennsylvania Hospital in Philadelphia.

A Continued Low Mortality. — The favorable death-rate continues, but there has been no further reduction of the mortality of the city. During the four weeks ending May 21st the number of deaths represented an annual death-rate of 18.62 per thousand of the estimated population, which is exactly the rate of the four weeks preceding. The various infectious and contagious diseases, in the number of cases and deaths reported, also vary very little from the preceding four weeks.

Firemen Poisoned by Paris Green. — An extraordinary case of arsenical poisoning recently occurred among the firemen of Williamsburgh in the Borough of Queens. In drawing up the hose to the second floor of a burning building the men upset a number of barrels, and on returning to their engine-house after the fire was extinguished, seven of them began to suffer from serious symptoms, which Dr. Joseph Smith, of the Fire Department, who was summoned, recognized as those of arsenical poisoning. An investigation of the upper floor of the building where the fire occurred, which was a factory for the manufacture of paint and paraffine, showed that the barrels which had been overturned were filled with Paris green, and that in falling the heads of several barrels had sprung and the dry powder had scattered all over the room, impregnating the air which the firemen had inhaled. In the case of two of the men the poisoning proved nearly fatal.

The Cornell University Medical School. — Among those who have been appointed to professorships in the new Cornell University Medical School, recently opened in the Loomis Laboratory, are the following: Alexander Lambert, M.D., and Charles E. Nammack, M.D., Professors of Clinical Medicine; Francis W. Murray, M.D., Professor of Clinical Surgery; George T. Elliot, M.D., Professor of Dermatology; Charles Stedman Bull, M.D., Professor of Ophthalmology; Allan McLane Hamilton, M.D., Professor of Mental Diseases; Wm. E. Stone, M.D., Demonstrator of Anatomy; Joseph E. Winters, M.D., Professor of Diseases of Children; and Gorham Bacon, M.D., Professor of Otology.

Therapeutics of the Supra-renal Gland. — At a meeting of the New York County Medical Association held May 16th, Dr. Wm. H. Bates read a paper on "The Therapeutic Uses of the Supra-renal Gland," in which he spoke of the extract of this gland as the most powerful astringent known in medicine. Dr. Bates's personal clinical experience with this agent was principally confined to ophthalmological and otological practice, in which he had found it of the greatest possible utility, but he gave an interesting *résumé* of the results obtained with it by other observers in a variety of pathological conditions. One of the most promising fields for its employment seemed to be in cardiac trouble, and several cases were cited in which it had proved efficacious in angina pectoris. Its hypodermic use was attended by so much irritation as to render that method of administration unadvisable, while when taken into the stomach it seemed to be comparatively inert. It had been found that the most efficient manner of employment for acting on the heart and other internal organs was to place it carefully upon the tongue, where it was absorbed by the mucous membrane before reaching the stomach.

Miscellany.

CONSTANT PRESENCE OF THE PNEUMOCOCCUS ON THE SURFACE OF THE TONSIL.

The pneumococcus may be found in the mouth as a simple saprophyte in healthy subjects. M. Wetter has shown that the inoculation in mice of the saliva of individuals who had not been subjects of pneumonia caused pneumococcic septicemia in 20 per cent. of the experiments. He found the saliva of those who had suffered from pneumonia more virulent; in four-fifths of the experiments septicemia was produced. At the meeting of the Société des Hôpitaux of April 15th, MM. Bezançon and Griffon showed by culture methods that the pneumococcus was present not frequently but constantly in the mouth. They had found that the serum of young rabbits aged about two months was a favorable medium for the cultivation of pneumococci. Mucus removed from the surface of the tonsil of forty individuals of all ages, some healthy and others suffering from various complaints, invariably yielded on this medium cultures of pneumococci. An important practical conclusion follows from this discovery. It is not sufficient to successfully inoculate the saliva or to make cultures from it to prove the presence of a pneumococcic affection. The expectoration or exudation must be directly examined, and the presence of a large number of encapsulated diplococci which color by Gram's method be proved. — *The Lancet.*

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VACCINE VIRUS.

The Department of Health of the City of New York calls attention, in a recent circular, to the improved form of bovine vaccine virus now issued from its vaccine laboratory; to the care exercised in its production, and to the excellence of the resulting product. A long and careful investigation of methods of production has led to a complete change from those formerly in use. The virus now issued and recommended for use is a liquid glycerinated pulp. This, it has been demonstrated, has greater activity, greater durability, and greater freedom from bacteria than the virus which is dried on points. Although led by its own observations to adopt this form of virus, the Department of Health in supplying such vaccine is only following the example of all of the best Continental vaccine laboratories. It is believed that no other virus is more fully tested before being issued than that prepared in the laboratories of the New York City Department of Health. The greatest care is taken to insure cleanliness in the production and preservation of the virus; all instruments and receptacles are sterilized, and the operations of inoculation and collection are conducted with constant reference to aseptic methods.

Before the virus from any animal is used, the calf from which it was obtained is sent to autopsy and the organs are examined for any evidences of disease. One sample of the virus is then examined bacteriologically, and a second is forwarded to the clinical tester of vaccine virus, and no virus is issued unless the reports of the pathologist, bacteriologist and clinical tester are all satisfactory.

The results obtained with the improved methods, under the rigid tests described, are excellent. During eleven months of the year 1897, reports were received from more than 20,000 primary vaccinations made with this virus, and the percentage of success attained in these was over 99.

The virus is a syrupy, opaque, light brown emulsion of uniform consistency. It is put up in capillary tubes containing each enough for a single vaccination and in vials of two sizes, one containing one-fifth of a cubic centimetre for ten vaccinations, and the other containing one cubic centimetre for fifty vaccinations.

The virus, in common with the other products of the Department of Health, is furnished free to all public institutions in New York City on application. It may be obtained by private physicians at many drug stores throughout the different boroughs, or may be purchased directly from the Department of Health at its borough offices.

RECORD OF MORTALITY

For the Week ending Saturday, May 28, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York . .	3,438,899	1137	367	11.52	16.11	1.98	3.51	1.71
Chicago . . .	1,619.226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis. . .	570,000	176	45	6.27	10.83	1.71	1.71	.57
Baltimore . .	550,000	192	67	10.92	9.36	.52	2.60	.52
Boston . . .	517,732	180	38	66.66	11.11	5.55	16.66	5.55
Cincinnati . .	405,000	92	—	2.16	8.64	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	94	38	19 08	10.64	7.42	1.06	2.12
Washington .	277,000	96	23	12.48	13.52	2.08	2.08	2 08
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	60	12	4.98	13.28	1.66	—	—
Worcester . .	105,050	28	8	3.57	31.13	—	—	—
Fall River . .	95,919	42	16	9.52	11.90	9.52	—	—
Nashville . .	87,754	32	5	3.13	3.13	3.13	—	—
Lowell . . .	87,193	30	10	12.12	12.12	3.03	9.09	—
Cambridge . .	86,812	25	6	4.04	28.00	4.00	—	—
Lynn	65,220	11	4	36 36	—	—	—	9.09
Charleston . .	65,165	37	13	10.80	8.10	10.80	—	—
New Bedford .	62,416	17	4	—	17.64	—	—	—
Somerville . .	57,977	18	6	22.22	11.11	—	—	—
Lawrence . .	55,510	10	5	—	20.00	—	—	—
Springfield . .	54,790	—	—	—	—	—	—	—
Holyoke . . .	42,364	10	4	—	—	—	—	—
Salem	36,062	11	4	—	18.18	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	7	4	—	28.56	—	—	—
Chelsea . . .	32,716	11	—	9.09	18.18	—	—	—
Haverhill . .	31,406	6	2	16.66	16.66	—	—	16.66
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	7	1	—	14.28	—	—	—
Taunton . . .	27,812	11	3	—	27.27	—	—	—
Quincy . . .	22,562	3	1	33.33	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	0	—	40.00	—	—	—
Everett . . .	21,575	5	1	—	—	—	—	—
North Adams .	19,135	7	3	—	28.56	—	—	—
Northampton .	17,418	—	—	—	—	—	—	—
Chicopee . .	17,368	5	2	—	20.00	—	—	—
Brookline . .	16,164	2	0	—	50.00	—	—	—
Medford . . .	15,832	2	1	—	—	—	—	—

Deaths reported 2,387: under five years of age 699; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 218, acute lung diseases 330, consumption 321, diphtheria and croup 57, diarrheal diseases 48, measles 27, whooping-cough 27, scarlet fever 24, cerebro-spinal meningitis 24, typhoid fever 18, erysipelas 5.

From whooping-cough New York 13, Pittsburg 5, Baltimore and Washington 2 each, St. Louis, Boston, Cincinnati, Worcester, Cambridge, Lynn and Chelsea 1 each. From scarlet fever New York 17, Baltimore 4, St. Louis 2, Boston 1. From cerebro-spinal meningitis New York 9, Baltimore 6, Boston and Somerville 3 each, Washington and Lynn 2 each, Quincy 1. From typhoid fever New York 5, Pittsburg 3, Baltimore, Boston, Washington and Providence 2 each, St. Louis and Cincinnati 1 each. From erysipelas New York 4, Somerville 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending May 21st, the death-rate was 16.4. Deaths reported 3,533; acute lung diseases (London) 177, measles 126, whooping-cough 109, diphtheria 50, diarrhea 42, scarlet fever 38, fever 15.

The death-rates ranged from 8.8 in Cardiff to 24.3 in Sunderland; Birmingham 16.7, Bradford 15.2, Gateshead 16.6, Huddersfield 15.8, Hull 13.2, Leed 20.8, Liverpool 22.6, London 15.7, Manchester 19.5, Newcastle-on-Tyne 23.6, Portsmouth 8.9, Sheffield 17.8, Swansea 16.4, West Ham 9.8.

METEOROLOGICAL RECORD

For the week ending May 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	30.32	59	71	52	48	68	58	S.W.	S.	7	12	C.	C.	
M..23	30.17	60	71	49	68	70	69	S.W.	S.	9	12	O.	O.	
T...24	29.98	57	61	53	84	94	89	S.	S.	12	7	O.	O.	.15
W..25	29.98	51	53	49	96	97	96	E.	E.	12	12	O.	R.	1.74
T...26	30.02	48	50	47	99	93	96	E.	N.E.	12	10	O.	O.	
F...27	29.77	53	58	48	98	93	96	N.E.	N.	12	4	R.	O.	1.42
S...28	29.84	55	59	51	98	97	98	N.E.	N.E.	26	5	R.	O.	
☞														3.31

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MAY 28, 1898, TO JUNE 3, 1898.

Acting Assistant Surgeon A. H. Mann, U. S. A., will proceed from Springfield, Ill., to Key West, Fla., and report for duty in general hospital at that place.

Acting Assistant Surgeon Ezequiel de la Calle, U. S. A., will proceed from this city to Tampa, Fla., and report to the commanding general, 7th Army Corps, for assignment to duty.

Acting Assistant Surgeon Robert E. Williams, U. S. A., will proceed from San Francisco, Cal., to Angel Island, Cal., and report for duty, he will also render medical attendance to the garrison at Fort Baker, Cal.

Acting Assistant Surgeon W. Hoepfner Winterberg, U. S. A., will proceed to Alcatraz Island, Cal., and report for duty.

Acting Assistant Surgeon John B. Darling, U. S. A., will proceed from St. Paul, to Fort Snelling, Minn., and report for duty.

Acting Assistant Surgeons A. R. Booth, Joseph A. Tabor and T. S. Dabney, U. S. A., are relieved from duty at New Orleans, La., and ordered to Tampa, Fla., for duty with U. S. Troops at that place.

Major Louis W. Crampton, surgeon, will proceed to Tampa, Fla., and report in person for duty to Major-General William R. Shaffer, U. S. V., commanding the 5th Army Corps.

Major Valery Havard, surgeon, will proceed to Tampa, Fla., and report in person to Major-General Joseph Wheeler, U. S. V., commanding the Cavalry Division at that place for assignment to duty as chief surgeon.

Acting Assistant Surgeons Francis M. C. Usher and E. A. de Lipcsey, U. S. A., will proceed to Key West, Fla., and report in person to Major William R. Hall, surgeon, in charge of the general hospital at that place, for duty.

Acting Assistant Surgeon C. L. G. Anderson, U. S. A., will proceed from Hagerstown, Md., to Newport News, Va., and report for duty with Light Batteries A and C, Pennsylvania Volunteers.

Major Philip F. Harvey, surgeon, will proceed to Tampa, Fla., and report in person to Major-General William R. Shaffer, commanding the 5th Army Corps, for assignment to duty as chief surgeon of one of the divisions of that corps.

Captain John L. Phillips, assistant surgeon, is relieved from duty at Fort Walla Walla, Wash., and ordered to Alcatraz Island, Cal.

Captain Thomas U. Raymond, assistant surgeon, is relieved from duty at Fort Canby, Wash., and assigned to duty with the expedition to the Philippine Islands.

Acting Assistant Surgeon Burke L. Johnson, U. S. A., will proceed from Kenton, O., to Fort Thomas, Ky., and report for duty in the general hospital at that place.

Acting Assistant Surgeon Walter Whitney, U. S. A., will proceed from Chicago, Ill., and report in person to the commanding officer, Fort Sheridan, Ill., for duty at that post.

Captain William P. Kendall, assistant surgeon, is relieved from duty at Fort Brown, Tex., and ordered for duty with 9th Cavalry in the field at Tampa, Fla.

Captain Henry A. Shaw, assistant surgeon, is relieved from duty at the Brigade Hospital in the field at Tampa, Fla., and ordered for duty in general hospital, Key West, Fla.

Major George H. Torney, surgeon, is assigned to duty in command of the U. S. Hospital Ship Relief.

Acting Assistant Surgeon S. Melville Waterhouse, U. S. A., is relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Myer, Va., for duty in general hospital at that place.

The order assigning Major Robert H. White, surgeon, to duty with the Philippine expedition, is revoked.

UNITED STATES MARINE-HOSPITAL SERVICE.

Examination of Candidates.

Washington, D. C., June 3, 1898.

A board of officers will be convened at Washington, July 6, 1898, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) Physical, (2) Written, (3) Oral, (4) Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

For further information, or for invitation to appear before the Board of Examiners, address,

Supervising Surgeon-General,
U. S. Marine-Hospital Service.

BOOKS AND PAMPHLETS RECEIVED.

Notes on Vaccine Rashes. Human Food Laws. By Robert W. Hastings, M.A., M.D., Brookline, Mass. Reprints. 1898.

Public Health Reports (formerly Abstract of Sanitary Reports). Issued by the Supervising Surgeon-General, Marine-Hospital Service. Vol. XIII, Nos. 1 to 53. Washington: Government Printing Office. 1898.

Renal Suppuration, Catarrhal, Specific and Traumatic, and the Value of Micro-Uranalysis of the Urinary Sediment as an Aid to Definite Diagnosis of It. By Thomas H. Manley, M.D., New York. Reprint. 1897.

Twentieth Annual Report of the State Board of Health of the State of Connecticut for 1897, with the Registration Report for 1896, relating to Births, Marriages, Deaths and Divorces. Printed by order of the Legislature. New Haven: The Tuttle, Morehouse & Taylor Press. 1898.

Manual of Operative Surgery. By H. J. Waring, M.S., M.B., B.Sc. (Lond.), F.R.C.S., Demonstrater of Operative Surgery and Surgical Registrar, late Senior Demonstrator of Anatomy, St. Bartholomew's Hospital; Surgeon to the Metropolitan Hospital, etc. Edinburgh and London: Young J. Pentland. 1898.

Accident and Injury, their Relation to Diseases of the Nervous System. By Pierce Bailey, A.M., M.D., Attending Physician to the Department of Correction and to the Almshouse and Incurable Hospitals; Assistant in Neurology, Columbia University; Consulting Neurologist to St. Luke's Hospital, New York City. New York: D. Appleton & Co. 1898.

Retinoscopy (or Shadow Test) in the Determination of Refraction at One Metre Distance, with the Plane Mirror. By James Thorington, M.D., Adjunct Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Second edition, revised and enlarged. Thirty-eight illustrations, 12 of which are colored. Philadelphia: P. Blakiston, Son & Co. 1898.

Address.

THE RELATION OF PATHOLOGY TO MEDICINE.[1]

BY W. T. COUNCILMAN, M.D.,
Shattuck Professor of Pathological Anatomy in the Harvard University Medical School.

WE may safely say that in the past fifty years there has been a greater advance in our knowledge of disease and in our methods of treating it than in any other similar period of the world's history. Not only has our knowledge of disease increased, but with it has come from all sides a larger appreciation of the importance of definite knowledge in the practice of the medical art, and the facilities for the study and investigation of disease are constantly increasing. With the increase of knowledge it has been possible to apply more fully scientific methods of investigation and reasoning to medicine. It is becoming more and more a science and daily removed farther from the field of speculative philosophy. Close observation, hypothesis, and the tests of the hypothesis by further observation, comparison and experiment, have taken the place of speculation. The advance has not been pre-eminent in any one department of medicine but along the whole line. Every advance in the knowledge of disease has been followed by a practical application of the knowledge resulting in better methods of treatment. Often those very facts which were seemingly of least practical importance have yielded the greatest practical results. Certainly no one could have foreseen that the discovery by a French chemist that carbolic acid would arrest the progress of fermentation and destroy the lower forms of life would be followed by Lister's method of wound treatment.

Medicine has a greater interest for the layman as well as the physician and inspires in him a greater respect and confidence. Almost a new field has been opened to the humanitarian instincts of the people. Hospitals have been erected everywhere; and in their construction and maintenance nothing has been spared which could add to the comfort, and conduce to the better treatment of the sick within them. Laboratories have been erected in connection with the hospitals, in which the investigation of disease could be more efficiently carried out. In the hospitals, in addition to the physicians and surgeons who are actively engaged in the treatment of the sick, there are men whose work is only in the laboratory and who do not come at all, or only rarely, in connection with the sick. The work of these men lies in two directions. In the first place by the means of the study of tissues or fluids from individual cases, they assist in the diagnosis and thereby in the treatment of the sick. In addition to this their work consists in the study of questions concerning disease, which study is facilitated by the opportunities which the hospital gives.

A broader conception of the work of the hospital has arisen. It is now generally held that in addition to the treatment of the sick within its walls, the hospital has other duties. It is in hospitals that the study of disease can be most efficiently carried out. Large numbers of sick, with different forms of disease and with different stages of the same disease, are grouped together; and the opportunities for observation and investigation are much better than can be afforded by the sick in private practice. Both the medical profession and the public demand that in exchange for the opportunities which the hospital gives for the education and development of the practitioners, those holding positions in it shall by their work contribute to our knowledge of disease.

In the first volume of his *Archives*, published in 1847, in the famous article in which he laid down the lines along which medicine was to advance and along which it has advanced, Virchow says, "the filling of the clinical position in a hospital has now become a matter of supreme importance because the clinician must not only be a scientific practitioner, but also an observer and investigator." The importance of this view of the hospital has been borne out in the histories of all of the great hospitals. The work which such hospitals as Guy's, or the Charité Hospital in Berlin, has done in the actual relief of suffering is as nothing compared with the benefits which the hospital has rendered mankind in the increase of knowledge which has come from the study of disease within its walls. It is only by means of their connection with great hospitals that the work of such men as Bright, Traube, Frerichs and others has been rendered possible.

Our conception of medical education has also changed. It is considered no longer sufficient that the student should be told things. The laboratory and the hospital ward have become more important factors in medical education than the lecture-room. We are becoming more convinced that the student must be taught not only the art but the principles on which the art is founded. He can obtain his knowledge in great part by personal observations and experiment, for in this way only can knowledge come. It is of more importance that the powers of observation and the faculty of scientific reasoning should be cultivated in the student than that he should memorize supposed facts.

That branch of medicine which we term pathology has possibly felt the quickening influence of science more than any other. New fields have been opened to it. It has come in closer connection with biology on the one hand and with the practice of medicine on the other. As comparative pathology it has become an important element in the economy of the country. New methods of investigation in anatomy and physiology have been quickly applied to the study of problems in pathology. The close association and the mutual interdependence of pathology and clinical medicine cannot be questioned. This is so fully recognized that the trustees of hospitals are willing to erect and maintain, at a considerable expense, buildings in which it shall be studied.

I have thought that it might not be without interest to you to learn from a pathologist something of pathology, its position in the natural sciences, its relation to clinical medicine, its problems and its relation to the medical student.

Pathology may be defined in a broad sense, as that branch of biology which has to do with the study of life under abnormal conditions. It is impossible to define life. When matter has certain attributes, when it reacts in certain ways to external influences acting upon it, it is called living matter; and these attributes and reactions common to it in all forms are sufficient to distinguish living matter from all other forms of matter.

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[1] Annual Discourse before the Massachusetts Medical Society, June 9, 1898.

The phenomena which living matter exhibits, whether it be in the form of a simple unicellular organism or in the complex form of a mammal, under the influence of external conditions, constitute the phenomena of life.

When we study simple unicellular organisms under the microscope, we can in various ways change the conditions which surround them and observe the phenomena which they exhibit under these varying conditions. We find certain conditions which are favorable for them. Under these they absorb food to supply the material which is lost in the production of force; the protoplasm increases in amount, new individuals are produced by the division of the cell, and the species preserved. We can subject them to a greater or less degree of temperature, or expose them to the action of chemical substances, observing them all the while. Under such influences we find that the phenomena which they exhibit change their character. By gradually increasing the temperature, the movements of an ameba at first become more rapid, then slower, and finally ceases. We can also influence in some degree the amount and character of the substances which certain unicellular organisms produce. Or, again, we can so alter the external conditions that the simpler phenomena of life, as shown by alimentation, can be carried on; but there may not be sufficient force conveyed to the organism to enable it to perform the more complexed phenomena involved in reproduction.

Slight variations in the external conditions have no effect on the phenomena which living beings exhibit. The movements of an ameba or the movement of the cilia in a paramesium or a bacterium will continue in the ordinary manner if the temperature be raised or lowered only a few degrees above or below that in which they ordinarily live. The external conditions to which living beings are subjected are constantly varying; not only does the temperature vary but the quality and amount of substance serving for food are constantly changing. This capacity of living under such varying external conditions is spoken of as physiological adaptability or resistance. It is only necessary to think of the conditions under which man lives to see how great is this physiological adaptability of the organism. This is only possible by means of the mutual interdependence of the organs. Under certain conditions more work will be thrown on one organ of the body than on another, or the function of one organ may be so modified that it will act in such a way as to be of advantage to the others. One of the best examples of this interdependence of organs is seen in the action of the skin and kidneys. Physiology teaches us every day more and more of the marvellous ways by which the circulation adapts itself to meet different conditions.

A certain degree of variability in the phenomena is perfectly consistent with a state of well-being of the organism. We call the state produced in living beings by unfavorable external conditions which pass beyond the adaptability of the organism, disease, and the phenomena exhibited under these conditions, symptoms or signs of disease. The phenomena produced in disease are due to alterations of structure. Unfavorable external conditions produce an alteration in the structure of the living material in consequence of which it exhibits different phenomena. These alterations in structure which result from unfavorable influences and to which the phenomena of disease are due are called lesions. In most cases these lesions are sufficiently obvious. They may be present in a single organ or may be widespread. In rare cases we are unable to recognize them with the means at our command, although we must assume them to exist. With the increase of our technical methods of study we daily become better able to ascertain the character of these structural alterations, but even now it is only the more obvious alterations which are accessible to our study. It is perfectly conceivable that there may be alterations in chemical composition which we may not be able to recognize, and which may exercise an important influence on function.

When a number of living beings are subjected to unfavorable conditions, all being equally exposed, they will not be equally affected. If the conditions are sufficiently unfavorable, the majority may be destroyed and only certain individuals survive. The same thing is seen in every tale of shipwreck and privation; certain individuals remain alive while others perish. Although for every species of living beings we can determine in a general way the limits of the unfavorable conditions under which life is possible for the vast majority, certain ones will always be found which will not come up to or will pass beyond the standard. Even in the observation of ameba it is seen that not all will cease their movements at the same time when subjected to the same degree of heat. Some will cease to move before the majority are affected, others long after.

In dealing with living matter we are not dealing with chemical substances of known character in which the same effect is produced by a given cause, but with highly complex substances. Not only does every species, as species, have a law of its own, but even every individual of a species has a definite individuality, and may show in various degrees differences in power of resistance, and in other ways depart from the standard. The variation in physiological resistance may not show itself by any difference which can be demonstrated. It is not possible from the most minute examination of a number of amebæ of the same species to designate in advance those which will prove to be more resistant to heat or chemical substances. The greater resistance may depend upon certain substances which are present in larger quantities in some individuals or upon a greater firmness or regularity in the chemical molecules. This variation in physiological resistance becomes more complex in the higher animals, which are not composed of single units capable of independent life, but aggregations of units arranged in organs and all interdependent.

Pathology being the study of disease, all that belongs to disease comes within its province. It has to do with the unfavorable external conditions, the causes of disease in their action on the living body. Here it has a close relation with hygiene, which is the general study of the causes of disease in relation with other external agencies and the means for preventing their action. It has to investigate those conditions underlying disease in consequence of which the physiological resistance of the organism to external conditions may be lowered. It must embrace the study of the lesions produced by these varying causes and the manner of their production. These lesions may be produced in the embryo and in various ways influence its development. In the study of the lesions there is a close union with anatomy and embryology. The anatomical lesions produced by disease affect in various ways the functions of the different organs, and the disordered functions and the general phenomena of life of the diseased individual must be studied. In this pathology is closely related to physiology, or the study of the phenomena of life in normal individuals.

Pathology must be more than a descriptive science. It must be explanatory. The most exact description of a pathological lesion can give little information of the manner in which the lesion is produced, and still less of the effect which the lesion will have on function. The study of the lesion in itself, although the tissue change may be interesting, is as void of wide interest as the study of human anatomy separated from comparative anatomy and embryology. Pathology must explain the lesion; and this involves the study of the cause, the manner in which this cause acts on the tissue, how it reaches it from the outside, the gradual changes which the tissue undergoes in the production of the lesion, the effect of the lesion on the function of the tissue in which it is situated, the influence of the disordered function of this tissue on the general organism, and the means by which the diseased tissue is repaired or regenerated. The methods used in the study are the same as in any other science, observation and experiment. Experiment is as indispensable in pathology as in any other branch of science.

Such being in brief a general view of pathology, let us consider a little more closely the subjects for investigation. Teratology embracing the cause. the modes of formation and the influence exerted on the entire organism by malformations, may properly be considered a branch of pathology. As such it is closely linked to embryology, and its problems must be attacked from the embryological point of view. The explanation of the mode of development of the malformations can only be fully appreciated by those who have made embryology their chief study. The malformations, constituting as many of them do such obvious departures from the normal type of the individual, have been from the beginning of the study of pathology an object of description. No attempt was made to classify them, or to ascertain their cause. Then came the period in which the malformations were grouped together, classified and arranged in the order of those affecting the entire individual, and those affecting certain organs. A still further mode of classification involves some conception of their manner of production. It was seen that some of them were due to a separation of parts. Many of them were seen to represent the persistence of a condition found only in the embryo. In the first attempt to ascertain their etiology they were considered, as were diseases of that period, to be a manifestation of the wrath of God. Their study advanced from the age of superstition to that of speculation. In the speculative age they were attributed to the intercourse of human beings with animals and to the influence of mental states of the mother on the fetus *in utero*. The first great advance which was made in their study was when it was ascertained that under the influence of unfavorable external conditions malformations could be produced in the eggs of chickens and fishes. With these observations began the study of the experimental production of malformations to which Dareste in France has made the most important contributions. He showed that it was possible to produce certain of the more common malformations in chickens by subjecting eggs to various abnormal conditions, such as shaking them, standing them on end, subjecting them to variations in temperature, etc. All of these external conditions exert an influence on development. With few exceptions, however, it has not been possible to produce at will any given malformation.

The results of this study, together with observations on abortive human embryos, have shown that most malformations take place at a very early period of embryonic life. The observations of Dareste have been carried still further, and the study of malformations from the experimental point of view has become the main work of certain embryologists in Germany and in Italy. Even in this field, which at first sight would seem farthest removed from experimental inquiry, the experimental method has given the only results of importance. Experimental teratology has now investigators in this special field, laboratories devoted to it and an important periodical literature. There is little doubt that certain problems in normal development may be elucidated by the study of the abnormal, in the same way that our knowledge of normal structures and function has been increased by the study of disease.

Teratology has a further important connection with pathology, in that malformations constitute a part of the underlying causes of disease, those conditions of the organism which render it more susceptible to the action of unfavorable conditions. Many of the questions relating to immunity and to inheritance may also be considered under it. In all of these questions there remain problems enough for investigation.

The study of pathological anatomy may be said to have passed through a period very similar to that of teratology. In the beginning pathology was only concerned with the curious. In the first books on the subject we only find descriptions of very obvious departures from the normal type, together with an imperfect account of the symptoms of the individuals, a collection of curious and very often interesting facts without attempt to harmonize them or to explain them. Then came the period of better observation of the lesions and their classification; and this reached its acme under Rokitansky, who may be said to have occupied the same position in pathology that Linneus did in botany. Even to-day nothing can equal the accuracy of Rokitansky's observations. There are few things which he did not see. When some lesion or combination of lesions seems entirely new, it is only necessary to go back to the work of Rokitansky to find that he has observed and accurately described it. Rokitansky made pathology or pathological anatomy a descriptive science. In his attempt to *explain* the pathological alterations he so faithfully described, he had recourse to speculation, elaborated his theory of crasis, and by his force of presentation succeeded in having it generally adopted. According to this, all pathological conditions were due to a certain state of the system known as the crasis. In all pathological new formations a mother fluid was produced, which was termed the blastema; and under the influence of a particular crasis, in the one case, carcinoma, in another case, pus, or in another case, tubercle, could be formed from the blastema.

This school of pathology reached its full development under Rokitansky, and was a legitimate outgrowth of the speculative philosophy of Germany. Systems of philosophy developed in medicine as they had developed in other branches of learning, and from the beginning of this century up to the time of Virchow German medicine was largely founded on metaphysics. The case was different in England. Here medicine had felt the magic influence of John Hunter. He discarded entirely speculation and went back to observation; and it was due to his influence that English medicine advanced. In John Hunter were combined wonderful powers of observation and skill in experimentation. In Rokitansky were combined powers of observation which have scarcely been equalled and powers of speculation almost as marked.

The successor of John Hunter was Virchow, and his work is the foundation-stone on which German medicine has been erected. Virchow may be said to have given us our present conception of pathology. He taught us that our study must embrace, not only the lesion as an anatomical condition, but its causes, its mode of formation and its influence on function. Before Virchow, Morgagni had taught us that disease was to be referred to the organs of the body. Bichat went much further by referring it, not to the organs, but to the tissues composing the organs. Virchow went till further in studying the changes in the cells, and gave us the cellular pathology. It was his great service to have fully appreciated the importance of the work of Schwann and to have carried the principles of the cell theory into pathology. He was the first to recognize that pathology was the study of life under abnormal conditions, and that all we could gain from the study of physiology and embryology had a direct bearing on pathology. More than all, he taught us that the same methods of research which were used in the other natural sciences were to be applied to medicine.

There is probably little more to be done in the way of description of gross pathological lesions. There is much to be done in the study of the finer cellular changes of organs, their causes and mode of production. Many of these changes have only recently, owing to improvements in optical instruments and in methods of investigation, been apparent to us. We are learning to investigate more closely, and that our investigations must have a wider scope. We recognize that lesions which are of great importance are not evident on examination with the naked eye; further, that we must often seek in slight lesions produced in one organ the causes of extensive lesions in another. In certain diseases, as in typhoid fever, the effect of the disease is seen in the production of cellular changes in all the cells of a similar character in the body. Local and general immunity are connected with changes in cells. It is no longer sufficient to investigate single organs in studying the effect of a cause of disease, but all the organs must be investigated. The pathologist is as much interested in cells as the histologist and embryologist, and all methods which facilitate their study in these branches find a quick application in pathology.

(To be continued.)

The Alert Prescriber. — A gentleman in the car was telling how good his doctor was. "Clever?" said he, "well, I should say he was. The other day I called him in when I had swallowed five cents. He said if the coin was not counterfeit it would pass, and made me cough up two dollars." — *Medical Record.*

Original Articles.

THE PATHOLOGY, GENESIS AND DEVELOPMENT OF SOME OF THE MORE IMPORTANT SYMPTOMS IN TRAUMATIC HYSTERIA AND NEURASTHENIA.[1]

BY MORTON PRINCE, M.D.,
Physician for Diseases of the Nervous System, Boston City Hospital; Clinical Instructor in Diseases of the Nervous System, Harvard Medical School.

(Concluded from No. 23, p. 540.)

III. — Symptoms which are the Physiological Expression of Emotion.

A very common set of symptoms, following and frequently continuing some time after an accident, are nausea, vomiting, vaso-motor disturbances, perspiration, palpitation, and the like. The genesis of such symptoms I conceive to be due to the fact that they are the normal physiological expression of emotion or nervous shock. The nervous system is so constructed that a shock like a fright excites these symptoms. This is common knowledge; whether or not they persist for any length of time after the primary shock, often depends upon the state of mind of the person, and whether the same or a similar emotion is persistently re-excited by other circumstances of daily life or by the introspection of the patient. Sometimes their persistence may be due to the persistence of the primary shock; but in my experience it has been a common observation that such complex symptoms having been once excited, afterwards, as long as the subject is in a neurasthenic or hysteric state, any cause which induces a similar even though mild shock, with its accompanying emotions, will induce the same set of symptoms over and over again. These latter sometimes seem to become independent of the original exciting cause. I might cite numerous illustrations of this from my case-book.

Still another phenomenon of emotion is the *final association of the emotions with many of the corporeal symptoms, like pain, fatigue*, etc., exhibited by the patient, so that even after the subsidence of these latter symptoms they are re-excited by anything that reawakens the emotion. This is a very important group of phenomena in the clinical picture of individual cases. In illustration, I may cite the case of a lady who was a subject of traumatic hysteria from a fall upon her shoulder while getting off a train. During her convalescence, and for a long time after substantial recovery, she experienced all the old burning and lancinating pain of a very intense nature in her arm, together with flushing of the face, mental confusion, nervousness, and other emotional disturbances, whenever the accident was referred to. Another patient, whenever startled by a loud noise, which evidently recalled the crash of the accident, likewise suffered from a whole train of painful and emotional symptoms. Another suffered from nervous spells, feeling of fright and extreme tremor affecting the whole body, by simple thoughts of his condition.

Sometimes the original exciting cause of these symptoms may be forgotten by the patient. The following is a very remarkable example of this, and shows how, to the original emotion become afterwards attached all the other physical stigmata from which the patient suffers.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, May 18, 1898.

Observation I. Miss F., now under observation, although much improved by suggestive therapeutics, and at times entirely free from very severe symptoms, still relapses whenever emotionally excited. The cause of the emotion may be distressing thoughts caused by religious services, books, minor events of everyday life, anxiety, disappointment or fright like the following: One day, after having been free from symptoms during the previous twenty-four hours, and feeling perfectly well, without fatigue, pain, or any other symptom, she presented herself with a dejected, fatigued look upon her face, which betrayed that something had gone wrong. She then stated that she had felt perfectly well up to supper-time of the previous evening, when, while she was in a restaurant, dark clouds came up; on going out, from the looks of the sky she got the idea that a thunder-storm was coming up, and at the thought she became stricken with terror. At once she became affected with palpitation, nausea, hot and cold feelings and a sinking sensation, and felt as if she could not run home fast enough, but she compelled herself not to run. When she reached home the old neuralgic pains of a very severe type returned in her head and side. These had been very severe and a prominent feature in her neurosis. She also experienced a feeling of very great fatigue. All these lasted about two hours. Later, mental depression came on, which she ascribed to reading a gloomy book. In explanation, she stated that she had great fear of thunder-storms, which always throw her into this condition. This fear had only existed during the last three or four years, and previous to this time she had never experienced it. She stoutly maintained that she could not remember the first occasion when she was afraid of lightning, but that this fear came on about three or four years ago.

She was then hypnotized. In hypnosis she at once stated that she remembered perfectly well the first occasien when she was frightened by lightning. It was at night in a Fall River hospital where she was a nurse, a tremendous storm came up, and while she was in the corridor, in a great flash of lightning she saw an insane patient running down the corridor towards her as if to seize her. The patient did seize her, but did not do her any harm. Seeing the patient in the flash gave her a great terror, similar to, but worse than the experience of the day before just described. The other symptoms were also the same, only worse. Ever since she has been afraid of lightning storms and always suffers from severe symptoms during them.

On another occasion, this subject, while feeling perfectly well and free from symptoms of any kind, was in a restaurant and saw seated at another table a woman of whom she was very much afraid. This person is physically repulsive to her, and Miss F. thinks her crazy. The minute Miss F. saw her she was conscious of an emotional state which was probably akin to that of fear, and of a sudden she felt a return of all her symptoms, which persisted during the remainder of that afternoon.

Observation II. Mrs. D. has had hysterical neurasthenia for years with ups and downs, sometimes being quite well, at others an invalid. When her condition is bad, her character changes in such a way that small contradictions, disappointments and annoyances that, when she is well, would not be noticed, throw her into a state of temper. This emotional state comes on like a flash; then she is invariably attacked by various sensory symptoms, and among them headache, a very severe gastric paresthesia and fatigue. The emotional state thus excited is quite marked, and its sudden development, with its associated symptoms of pain and fatigue, from out the midst of apparent health, is very striking. She may be apparently well, and five minutes later she will be distressed by a return of all her old symptoms.

Observation III. Mrs. X., a neurasthenic for years, develops headache, abdominal pains, fatigue, nausea and various sensory disturbances when her feelings are hurt by what she interprets as a rough word, or when emotionally shocked by incidents that give her moral shocks.

Observation IV. Mrs. Y., when her feelings are wounded, immediately experiences great pain in her spine, headache, fatigue and more complex symptoms, compelling her to take to bed. I have been sent for over and over again to see her in such circumstances, being usually able to guess the nature of the cause.

Observation V. Mrs. D.. when convalescing from hysterical neurasthenia, informed me that she was then able to laugh without nausea for the first time in years. In explanation, she said that one day several years ago, at the beginning of her illness, she had severe dyspepsia with nausea. For this she took a charcoal lozenge; while taking it some one made her laugh, the lozenge "went down the wrong way," and she got into a gale of hysterical laughter which she could not control. Ever since this date, laughter has brought on nausea, so that she has avoided it as much as possible, and even at the theatre has always tried to suppress laughing because of the nausea thereby excited.

Observation VI. Miss F. states that anything that recalls to her mind a certain person, a girl who once gave her a mental shock in church, or that recalls her sensory experiences on that occasion, puts her into a trance. The incident was as follows: While she was in church and the "Hallelujah Chorus" from Handel and Hayden's Oratorio was being played on the organ, this girl leaned over and told her something that gave her a shock, much as if she had heard of the death of somebody. That is, it was that kind of a fact. At the time there was a smell of incense in the church and the wind was blowing through the open window upon her face; this breeze she felt distinctly. When she heard the words whispered to her she thinks she must have gone into a mild trance such as she now frequently has. She was conscious of a distinct shock and then there was a blank period of time of which she remembers nothing. Now anything that recalls this girl to her mind, or the scene in the church, is apt to have the same effect, the "Hallelujah Chorus," the smell of incense, or even a breeze blowing upon her face, will bring back the whole incident, no matter where she happens to be, and send her into a trance.

The relation between emotional states and their accompanying pathological manifestations is one that is not yet well understood. It is a field that will well repay future study, and one in which we must seek for the pathology of many traumatic cases of hysteria and neurasthenia. Exactly why the development of an emotional state, like fright or anger or sorrow and wounded feelings, should induce various somatic symptoms, referable to different parts of the body which appear to be unrelated to the emotion, is not clear, but nevertheless it is a clinical fact. The excitement of such emotional states may not only originate a neurosis, but after the apparent subsidence of the neurosis, may re-excite all the symptoms and keep them in existence. The law of association probably plays here an important part.

Still more obscure than the relation to the emotional state of the kind of symptoms which I have detailed is that of symptoms like paralysis, anesthesia, and other hysterical stigmata of this type, which it is well-known frequently follow fright. What takes place psychically or physiologically when paralysis follows an emotional shock or why it should follow is not quite clear. The following case illustrates this etiology in a characteristic way:

January 17, 1898. T. R., male, aged twenty-one, has a paralysis of the whole left arm and hand, with painful contracture of the fingers and absolute loss of sensation extending from about three inches above the wrist to above the shoulder. An area of blunted sensation extends further over the chest and over the left face. Attempts to passively move the arm or fingers cause great pain. The patient entered the hospital in the service of Dr. George B. Shattuck, about three weeks ago, that is, December 28, 1897, complaining of severe pain in his left side; this was his chief complaint. About two weeks after entrance, the patient had an attack of unconsciousness but without spasms, excepting that swallowing movements were noticed by the house-physician. This attack was followed on the following day by the development of the above described paralysis of the arm. A more careful inquiry into the circumstances of the accident revealed the following interesting facts:

Two days before entrance, that is, December 26th, T. R. was loading granite curb-stones into a team; a stone had been partially placed in the wagon so that one end of the stone rested on the wagon and the other end was held by T. R. He felt the strain was too great for him and called for help. The thought occurred to him that if he let the stone fall as he would be obliged to do without help, the other end would topple over and strike him and kill him. Two men came to his help and T. R. let go his hold. He immediately sweated profusely but kept at his work. When he took hold of the next stone he began to feel sleepy; his eyes closed against his will (this was illustrated to me by the patient), and everything looked dark, but by force of will he kept on and towards the end of the loading he began to feel frightened. Before this moment he thinks he was not conscious of this feeling. He was then in a profuse perspiration and went into the barn to rest. Here he sat down and nearly fell asleep, that is, found himself constantly dozing; he felt obliged to "pull himself together." All this time both his hands were shaking, and he felt a burning feeling in them as though he was touching hot coals.

He told his uncle that he felt "funny," and he was told to go into the house and drink some warm tea; here he rested for a half or three-quarters of an hour and then mounted his wagon and drove to Everett, several miles away, with his load. It was not long before severe pain came on in his left side in the costal region; this pain was excited by movement, and he began to think he had hurt himself. After returning to Charlestown he again loaded his wagon with cobble stones, which is the last thing he remembers doing until he found himself in the house. He does not know how long he was unconscious, but thinks it was about three or four hours. The following afternoon he was sent to the hospital, when his chief complaint was pain in the left chest, as just stated.

On January 10th the attack of unconsciousness above mentioned occurred. Examination of the patient showed the case to be one of pure hysterical paralysis with its usual accompanying physical manifestations. The interest centres in the therapeutic facts and the etiology. The nature of his malady was explained to him; he was assured that nothing serious had happened, that it was the result of his mental agitation, and that the cure depended on his own self-control, and if he did not try to recover control, his trouble would grow worse. The result was that his symptoms began at once to improve and very shortly disappeared. Etiologically, the case is interesting as showing how a pure emotion, without any trauma or shock, as that word is usually understood, brought on the entire neurosis. The development of the paralysis two weeks after the original exciting cause is also instructive.

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HOW RUSSIA CARES FOR HER FOUNDLINGS.[1]

BY J. L. HILDRETH, M.D., CAMBRIDGE, MASS.

(Concluded from No. 23, p. 536.)

WITH the exception of the Department of Outside Aid, the system at Paris now much resembles that at Moscow. The foundlings are kept but a short time at the hospital, and are then put out to foster-mothers in the country. An attempt was made, a few years ago, to introduce what was called the system of *deplacement*, by which the infants were to be sent, each to a district remote from its birthplace, thus removing from mothers the temptation to desert their children, in the hope of later receiving them again to nurse — a practice common in France, it appears, as well as in Russia. But the experiment was soon abandoned on account of the expense, since the fact that the foundlings were not all received at one or two great central hospitals, but taken in at numerous smaller ones, in different parts of the country, made a species of transportation-exchange necessary to carry out the *deplacement* plan.

The sum paid to the foster-parents in France, as in Russia, is gradually diminished with the development of the child's capacity to care for himself and be of service to others. The total cost of maintenance for each child during his first twelve years is said to average the very moderate sum of 1,500 francs, about $300.[15] At twelve apprenticeship begins, but the supervision of the government inspectors continues till the ward is twenty-one.

The Paris Asylum receives annually, exclusive of those registered in the Department of Outside Aid, about 5,500 children. The provincial hospitals report an annual average of about 36,000 under the care of their authorities. These include not only foundlings proper, but children temporarily cared for while their parents are undergoing penal servitude, or while they are in hospitals for treatment. It is also admitted that there are still legitimate children of living parents among the number, although in no such proportion as in the years before the turning-box was abandoned. Even since its abandonment, the formalities of admission to the hospital have been less strict than in some other countries.

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[1] Read before the Cambridge Medical Improvement Society, April 25, 1898.

[15] Encyclopædia Britannica.

Probably in no country of Europe have the principles underlying the public care of foundlings been more ably and exhaustively debated than in France; and France may be considered the representative of that system of lavish and somewhat indiscriminate public provision which has been called by some writers the Catholic, by others the Roman, as distinguished from the Protestant or Teutonic system. Curious enough — and yet not at all curious, when one reflects upon it — is the relation between the laws of the various European countries and their conduct of these public charities. Teutonic custom is far less lavish in its public provision for the foundling; but Teutonic law pushes back much further the private responsibility for the child's maintenance, in many cases extending it to the very distant relatives, if they can be found. An extreme instance of both these tendencies is Scotland, where there have never been any foundling hospitals, and where a notable attempt of a private philanthropist to establish one was overruled by Act of Parliament in 1832, on grounds of public morality: but where the law gives to the mother of an illegitimate child unusual claims for aliment upon its putative father. It is a crime, in Scotland, to desert an illegitimate child: the few children who are deserted, in spite of law and its penalties, are cared for by the poor-law authorities. This possibility of bringing proceedings for aliment against the father of an illegitimate child is pointed out by a writer in the latest edition of the "Encyclopædia Britannica" as marking a fundamental difference between the law of most Protestant countries, on the one hand, and that of those Catholic countries which have adopted the Code Napoleon, on the other. Where the law gives the mother the means of redress, there is far less occasion for public provision for the child. The cases of real necessity will be relatively few, and can safely be left to the ordinary administration of the poor-law system, or to private charity. Such is the custom of England, Germany, and most of the other Protestant countries of Europe, and it will be recognized at once as that of our own country.

Both of these opposing systems — the Roman and the Teutonic — have had able defenders, and it must be admitted that a plausible case can be made out for either side. The lavish bounty of the Roman method appeals at once to the inherent generosity of human nature, and all the more strongly on account of the helpless condition of those for whom it pleads. It is claimed for it that it prevents infanticide and abortion, and makes it possible for the woman who has slipped once to regain a footing in society again. Its opponents, on the other hand, say that it encourages vice and profligacy. They claim, too, that so far from its being an advantage for an erring mother to be relieved of her child, the care of the little one is often a positive safeguard to her, preventing her from returning to evil ways, and not seldom a tie to unite father and mother in a happy marriage. Statistics are quoted in support of both these positions — and where the statisticians disagree, who shall decide? The fact seems to be, that so many other considerations enter into the problem — considerations of national temperament, standards of morality, expense of living, average age of marriage, freedom of divorce, and so on, — that statistics alone do not count for very much. The writer of the article in the "Britannica," just referred to, is perhaps right in his suggestion, that each system may be the best for those nations which have adopted it. There is no doubt that the Teutonic system brings less expense upon the countries following it, and its cheapness has been made the subject of taunts by those opposed to it. Said Lamartine, the brilliant French orator, in an impassioned appeal in behalf of the turning-box, "It was reserved for the sordid ingenuity and pitiless economy of certain theorists of Great Britain to undermine, in the name of arithmetic, an institution founded in the name of morality and fraternity."

Let us glance for a moment, in closing, at the experiences which led, in Great Britain, to the adoption of this frugal Teutonic system.

The largest foundling hospital in the United Kingdom is that established in London, early in the last century, by Thomas Coram, a retired sea-captain. Captain Coram's kindly heart was touched, as he went back and forth, day by day, among the wharves and dockyards, by the sight of abandoned children, half-naked, cold, starving, or already dead. Seventeen years he labored at his subscription list, and in 1739 had the satisfaction of seeing his hospital incorporated. It became at once an object of popular interest, and from that day to this perhaps no charity in Europe has been associated with more brilliant names. The sermon at its dedication was preached by Sterne. Handel gave a performance of his "Messiah" for its benefit, year after year, adding to its funds a total of £10,000. The beautiful organ in the chapel was also his gift, and it was he who composed for the childish choir the anthems of which Mendelssohn said, on hearing them, that they were "like the jubilate welcome at the gates of Paradise." Hogarth exhibited his paintings to aid the hospital, and gave his celebrated "March of the Guards to Finchley" to adorn its walls. The "Christ Blessing Little Children," over the communion table in the little chapel, was also given by its painter, Benjamin West. During the reign of George III the popular interest in the hospital was so keen and the grounds so attractive that they became the place for fashionable promenades.

In the early days of the hospital, the rush for admission was so great that lots were used to determine which children should be received. It is said that one mother, after drawing a black-ball for nineteen mornings in succession, dropped dead with joy when, on the twentieth, she drew the coveted white. It may have been incidents like this — as well as the belief that the public enthusiasm and generosity would be equal to unlimited demands — that led the House of Commons, in 1756, to direct that every child presented should be received, to appoint receiving places all over the country, and to guarantee financial support. But the remedy proved worse than the disease. The first day on which the basket — the English equivalent of the turning-box — was placed outside the hospital door, it received 117 foundlings. Within the first three months 3,727 were taken in. To carry infants whose mothers wished to be rid of them became a regular branch of the carrier's trade, and a shocking proportion of those entrusted to them reached the hospital lifeless. Children at the point of death were sent by their parents to save the expense of burial. Legitimate children of paupers were also sent there to save the local guardians of the poor the care and cost of their maintenance. It was believed that criminal intrigues increased fearfully, in consequence of this easy means of disposing of illegitimate children.

After a four years' trial — during which time 15,000 children had been received and cared for, at a total expense of £500,000, the basket system was abandoned ("Encyclopædia Britannica"). The present system, which has been, substantially, in use since 1801, admits only illegitimate children whose mothers make personal application in their behalf, and convince the receiving officers both of their need and of their previous good character. By these officials their secret is carefully guarded, but to them it must be disclosed. This regulation has been criticised as over-strict, but it is difficult to see any middle ground between it and indiscriminate admission. Children thus brought by their mothers are not, in the exact sense, "foundlings" at all — that is, they are not deserted by their parents — and it has been objected that the hospital has no right to call itself a "Foundling Home." With these limitations upon admission, the hospital maintains only about 500 children — an insignificant number indeed, compared with those reported from Paris and Moscow. The care of the children after their admission is very similar to that in other foundling homes; at fourteen the girls are sent out to domestic service; at sixteen the boys are apprenticed; all are under supervision till they reach the age of twenty-one. The foundlings sent into the country from London do not remain as many years as those sent from Paris or Moscow; and it is said that the ill-effects of their city life are seen in stunted development and feeble health ("Chambers's Encyclopædia").

Making all due allowance for the difference in moral standards between England and the countries of the Continent, it is obvious that the 500 children maintained at the Foundling Home in London cannot represent all the illegitimacy of the United Kingdom. But the whole evil — so the writer in the "Britannica" assures us — does not attain proportions beyond what private charities and the Poor-Law funds can easily cope with. The London Home is now practically a private charity, supported by ample endowments, and has only been compared in this sketch with the foundling homes of Moscow and Paris because, for part of its history, it was, like them, the object of government assistance and regulation. It might be argued, by one not in sympathy with the English or "Teutonic" system, that the "private charity" of England puts in the way of the ill-disposed as many temptations to desertion of children, or even to looseness of life, as the public provision of Continental countries. But practical experience seems to show that such is not the case. Private charity is less apt to be lavish and indiscriminate. Then, too, a provision made by government is likely to be more freely taken advantage of, especially in countries where socialistic sentiments are widely diffused, and where the idea that children belong to the State rather than to the family, and that the State should be responsible for them, is familiar.

To an American, of course, the Teutonic system naturally commends itself. And yet, as has been suggested before, what is best for one nation may not be best for another. In a country like Russia, for example, the crowded condition of peasant homes — grandparents, brothers and brothers' wives, and cousins of all ages, sometimes occupying the one sleeping apartment in common — the long absences of husbands on military service, and the rigid class distinctions, must have tended to develop ideas of morality which seem to us loose and degenerating. Moreover, the general poverty and the autocratic character of the government combine to produce in the people a childlike dependence on the governing power. It may well be that there, a great public charity, like that so admirably conducted at Moscow, meets the conditions of the case better than anything which our Anglo-Saxon thrift and ingenuity could devise.

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FIBROID TUMORS AS A COMPLICATION OF PREGNANCY AND LABOR.[1]

BY EMMA L. CALL, M.D., BOSTON.

The frequent occurrence of uterine fibroids in women from thirty to forty-five years of age makes the study of the relation of such tumors to childbirth of great interest to the obstetrician, since on one hand, they may constitute an impossible barrier to delivery, while in other instances they illustrate most remarkably the power of nature to overcome obstacles. It is well known that the position of a fibroid is a most important factor in the difficulty of delivery, those situated near the fundus seldom giving rise to any serious trouble, those in the lower segment of the body giving rise to much more grave complications, while those involving the cervix are the most dangerous of all. Moreover, the variety of myoma is of great importance in reference to the prognosis after delivery. The submucous tumors which are inevitably more or less injured during the birth are most liable to be followed by septicemia, the interstitial tumor less so, but in their turn more than the subperitoneal variety. Fortunately a fibroid in the lower segment of the uterus usually presents mechanical difficulties in the way of conception, while the submucous tumors also cause sterility by the hemorrhage and endometritis to which they give rise.

The statement is made by some writers, that all forms of fibroids cause sterility. It seems to me that, except in regard to the forms above mentioned, it is more nearly correct to say that sterility is one of the predisposing causes of fibroids.

A fibroid rarely attains any size before the age of thirty-three years, which is late for a first pregnancy in a healthy woman, and therefore it seems probable that some other condition than the growth is the first cause of the failure to conceive. It is also well known that fibroids are especially common in single women, the cause for which seems to be the failure of the uterus to fulfil its natural function.

Moreover, in looking over the cases from which I have compiled this paper, I was struck by the fact that among them there were a good many where marriage took place after the thirtieth year, who became pregnant within a year, the fibroid in such cases being apparently no bar to a prompt conception.

In the 77 cases which I have collected, chiefly from the American, British, French and German journals of the last twelve years, the average age of the 44 primipara was thirty-four and one-half years. The youngest of these is twenty-four, and there are only six under thirty years of age. of whom three are colored women, among whom we know the liability to these growths is much greater than in the white race.

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[1] Read before the Suffolk District Medical Society, Section for Obstetrics and Diseases of Women, February 25, 1898.

The average age of all the cases (where the age was reported) is a little over thirty-nine, the oldest being a multipara of fifty.

The cases which I report from personal knowledge are none of them of the most serious varieties; yet it seems to me worth while to report them, because they are such as are most liable to occur in private practice, and it is well, on the one hand, not to be over-anxious in regard to the result, and on the other, to realize that even the minor forms are liable to lead to complications for which we should be prepared.

The first two cases are chiefly interesting because I have been able to follow them through several years, and more than one pregnancy.

Case I. Mrs. A. is the patient whose first labor was reported in 1885 by Dr. Chadwick from my notes. She had then a subperitoneal fibroid, the size of a fist, on the anterior wall of the uterus. Labor protracted, delivery by forceps, post-partum hemorrhage. The tumor could not be felt a year later.

Her second labor took place in August, 1885, and was normal in every respect. The tumor reappeared during pregnancy, but was much smaller than before (about the size of an egg), and projected abruptly from the anterior wall. She has never conceived since, and though I have examined her many times, there is no sign of any tumor.

Case II. Mrs. B. was treated before marriage for retroversion, which was apparently caused by a fibroid tumor, about the size of a pigeon's egg, on the posterior wall of the uterus, right side.

Her first pregnancy occurred at thirty-three years of age. The tumor increased somewhat in size during pregnancy, but the uterus was supported by a pessary and carefully watched until it rose out of the pelvis. Labor was protracted and terminated by forceps after twenty-four hours. Involution very tardy, and the tumor remained about the size that it was before pregnancy. Fifteen months later, her second child was born. Labor lasted fifteen hours, but terminated naturally. Since the second labor I have never been able to find the tumor. She has had two more children, and each labor has been easier and the involution more rapid.

In the two next cases the fibroid was evidently the chief factor of the protracted labor, and in one case had probably been the cause of the previous still-born children.

Case III. — Mrs. C., mulatto, twenty-four years old, fourth pregnancy. She gave a history of three protracted labors with still-born children, but said the doctors could never tell why the children died. Seen first in labor at the New England Hospital Maternity. Vertex presentation, and pelvic measurements normal. Pains weak and ineffectual. After twenty-four hours, as the child's heart beats became very rapid, the membranes were ruptured, the os being fairly well dilated. The liquor amnii was stained with meconium, and as the head did not at once descend, high forceps were applied and a living child extracted. Upon examination an interstitial fibroid, the size of a large orange, was found on the posterior wall. Convalescence normal. On the fourteenth day after labor the uterine cavity measured two and one-half inches, but the body was still large, and the thickened posterior wall very marked.

Case IV. Mrs. D., thirty-seven years old, primipara, delivered at New England Hospital Maternity. First stage of labor very tedious. Terminated by forceps, as the patient became exhausted. Adherent placenta. Posterior wall of uterus thick and prominent from an interstitial fibroid. Convalescence normal.

The next case illustrates the power of the uterine contractions to overcome obstacles to delivery.

Case V. Mrs. E., confined at New England Hospital Maternity in 1885, service of Dr. Zakrgewska. Primipara, age thirty-five. No symptoms of tumor observed by patient before pregnancy.

Irregular labor pains began a week before delivery. At this time three tumors were felt, one posteriorly, filling the pelvis, pushing the cervix up under the pubes, the others near the fundus right and left. The posterior tumor gradually ascended during the pains and allowed the presenting part (a breech) to be reached.

Extraction manual; head extended by the tumor, and delivered with difficulty. Child still-born. Convalescence normal. Three weeks after labor, uterus three fingers' breadth below umbilicus. The largest tumor is now felt filling the anterior cul-de-sac. The others are much smaller.

Cases VI and VII are interesting because of the mistakes in diagnosis to which they gave rise.

Case VI. Mrs. F., thirty-one years old, second pregnancy, was examined for admission card to New England Hospital Maternity in May, 1890. First labor tedious. She had felt very miserable during this pregnancy, and was sure that her abdomen was much larger than before, though previous to conception she had noticed no difference in size. The house-officer diagnosed twin pregnancy, and recorded hearing two fetal heart sounds.

Examined again June 20th. Abdomen so distended that palpation was not very satisfactory. A distinct sulcus ran from the lower right to upper left side of the abdominal tumor. In each half was felt a solid body which might be a fetus. Fetal heart sounds heard only on the right. A vertex was felt over the pubes, and could be reached per vaginam, though very high up.

Labor began July 12th, and delivery was rapid. I was sent for, with the message that "one child had come but they could not make out the presentation of the second." Upon arrival I found the uterus nearly as large as before delivery, the mass on the left of the fundus being still prominent. Internally nothing could be reached until the hand was introduced into the uterine cavity and found that the mass above mentioned was formed by a fibroid the size of the fetal head (subperitoneal). The uterus contracted well, and convalescence was normal.

Examination, fourteenth day, showed that the uterine cavity measured 8 c.c.; height of fundus above pubes in median line 12 c.c.; width, at level of iliac spines, 11 c.c. The main tumor was on the anterior wall, near the fundus, left side; but internally a lobule, the size of an egg, projected from the posterior wall on the right side.

Case VIII. Mrs. G., thirty-four years old, four years married. Had been treated for severe endometritis since marriage, but had not been under treatment for some months previous to present history. Menses were due on February 22d. On the 21st took a severe chill, and the next day menstrual pain began with a show of blood, which lasted only a few hours. The pain, however, continued. When seen a few days later the history of cold was apparently so clear that I treated her for suppressed menstruation with sitz baths and hot drinks. The menses did not appear, but the pain continued, and the pelvic tissues became quite sensitive. She was put to bed with hot fomentations, which soon relieved the tenderness. The pain, however, continued at intervals, sometimes moderate at others severe, but never wholly absent. Examination per vaginam showed no recognizable charge in the pelvic organs.

On March 22d, just a month from the beginning of this condition, I was summoned in haste to find her looking pale and anxious, with a history of sudden severe pain causing faintness, referred to right side of pelvis. Temperature normal, pulse quick and nervous. Found the body of the uterus apparently pushed over to the left side of the pelvis, with increased resistance on the right. The patient was too sensitive to make a thorough examination. I suspected ectopic gestation, but as the acute symptoms had subsided put her to bed, with morphine to relieve the pain. The next day, the patient feeling much less sensitive and nervous, an examination showed a small, soft mass, apparently closely connected with right side of the uterus. The uterine body was firm in consistence, the cervix slightly softened. No decisive color of vulva or vagina. The patient was kept very quiet, and watched for a few days. The soft mass on the right enlarged distinctly. The pain had ceased. Soon two small round masses were felt, posterior to the swelling, but apparently closely connected with it. The uterus grew softer. There was a bloody show, but no proper flow; no decidual membrane.

I now requested a consultation, and Dr. Chadwick kindly saw the case with me. After a very careful examination he agreed with me that it was probably ectopic gestation or pregnancy in a bicornate uterus, and advised an exploratory incision. This being consented to, Dr. Chadwick opened the abdomen and found the whole mass to be the pregnant uterus; but in the anterior wall on the left was an interstitial fibroid, precisely the size and shape of a slightly enlarged uterine body, reaching from cervix to fundus, which had evidently caused the right side of the uterine cavity to develop, while the growth of the left was hindered by the unyielding fibroid deposit. The posterior nodules were small subperitoneal fibroids projecting from the posterior wall of the uterus on the right. The question of myomectomy being decided in the negative, the abdomen was closed.

The patient did well for ten days and then miscarried. She made a slow recovery, but a year after was in better health than at any time since her marriage, and the tumors had entirely disappeared.

Turning to the 77 cases which I have tabulated, I find only 12, or 15.6 per cent., of uncomplicated deliveries at term, with recovery of the mother and a living child. Of the 65 abnormal cases there were seven spontaneous abortions, presumably caused by the presence of the fibroid, five induced abortions or premature labors, eight hysterectomies in the early months, one spontaneous rupture of the uterus at the fourth month, one premature labor at seven months.

Of 52 cases where the labor was at term, there were 12 normal and 40 complicated, and in the latter were reported two Cæsarean sections, one Porro, three craniotomies. six versions, eight breech (with manual delivery), 13 forceps, five enucleation of tumor during labor.

It is generally stated that the liability to hemorrhage is greatly increased owing to the inefficient contractions of the uterus caused by the fibroid. We find reported one ante-partum and six post-partum hemorrhages, and one partial placenta previa. It seems to me that this is not a larger number of cases than would be likely to occur in so many complicated labors from any cause.

In 41 cases the fibroid was reported single, in 30 multiple, in six not stated.

Regarding the position of these tumors, there were 21 in anterior wall, 17 in posterior wall, 25 at or near the fundus, 8 cervical, 9 submucous, 13 not located.

In 32 cases, 41.5 per cent., both mother and child survived; 23 mothers lived, the children being still-born. Thus, 55 mothers, or 72 + per cent, recovered. Of the children, 36 were born alive, 21 were non-viable at birth, 15 died during labor; in two cases the fate of the child is not mentioned, while one case had not been delivered at time of record. This gives a mortality of 50 per cent.

This is somewhat more favorable than the mortality of the larger collectors. Thus, Nauss reports 222 cases, with 53.9 per cent. maternal, and 57 fetal mortality; Susserow, out of 157 cases, gives maternal deaths 50 per cent., children 68 per cent.

These cases are, however, mostly compiled from records of from fifteen to twenty years ago; and it is reasonable to suppose that the improvement in aseptic technique of the last decade would reduce this mortality appreciably. A record of cases occurring exclusively within the last ten years would probably give still more favorable results than those I have recorded.

Of the 20 maternal deaths, 13 are ascribed to septicemia, two to shock and exhaustion; the cause of others not stated, but presumably some form of sepsis.

Of these deaths, eight were those where abortion took place, one hysterectomy, the rest at term.

It is usually stated that myoma decrease, and in many cases disappear after childbirth. To verify this is difficult, since the greater number of reported cases are from hospital practice, where the patient's subsequent history is unknown.

In 18 of these cases only have we any statement of the subsequent history of the growths. In two cases tumors of considerable size disappeared entirely in from two to three weeks. In two cases the tumor nearly disappeared, but reappeared during second pregnancy, to disappear entirely after the second puerperium. Six cases entirely disappeared in periods varying from two months to one year. Three cases "diminished greatly." Two cases diminished greatly during the puerperium, but were not seen later. One case remained stationary. In two cases hysterectomy was performed six and nine months after labor, respectively, for rapid increase in the growth.

I have been much interested in looking over statistics of large numbers of cases of labor, in order to estimate how often this complication occurs.

In 17,000 cases from Schrœder's clinic there were only 12, or one in 1,416. From the number of such cases reported in British and American journals, it would seem as if this complication must be more frequent in England and America than in the German clinics, but a report of the Rotunda Hospital from 1889 to 1892, including 3,602 deliveries, with their complications, does not record a single case.

In an article in the *British Medical Journal*, 1890, entitled "Complications of Two Thousand Cases of Labor," the writer gives very full reports of an extensive consulting practice in the north of England, but not one case of fibroids. Again, a report of 1,000 consecutive cases in the Sloan Maternity of New York, and 1,200 cases for the Lying-in Department of the New York Post-Graduate School, does not mention fibroids as a complication in any case.

I have tried to get some reports from Southern hospitals or practitioners, thinking that among the colored population a good many cases must occur, but I have not been able to find any.

It was, however, an interesting fact, that in 1894 in the "Transactions of the New York State Medical Society," and in the "Transactions of the Southern Gynecological Society," this complication was the subject of a paper, in the former, by Dr. Van de Veer of Albany, in the latter, by Dr. Fay of Washington, D. C. Both in the paper and the discussion which followed, the New York members showed themselves inclined to radical surgical measures, some going so far as to advise that every pregnant woman with a fibroid, however small, should be advised to submit either to a myomectomy or hysterectomy in the early months, while the Southern members almost unanimously showed a disposition to trust to the forces of nature until she proved unequal to the task, showing by this that the weight of their experience led them to do so.

The question of the various methods of treatment, would unduly prolong this paper and therefore I shall not enter upon it.

Clinical Department.

DIAGNOSIS OF PUERPERAL SEPTICEMIA, WITH CASES.

BY EDGAR GARCEAU, M.D., BOSTON.

Case I. The patient was twenty-two years old, of rather delicate constitution and of slight build. She had been married about a year, and had been delivered of her child after a not unusual labor. For three weeks before confinement she had been feeling rather miserable, but this had not given rise to any special comment, as the discomfort was thought to be due to her condition.

Two days after labor the temperature rose to 103°, but no chill accompanied the rise. General prostration followed, and she was soon very sick. A day later there was a sharp pain complained of in the mammary line at the base of the right chest, and it was worse on deep inspiration. There was also some cough. A year before she had had an attack of pneumonia affecting the right lung.

Her condition six days after labor was as follows: Great prostration, sweating, apathy, vomiting, sleeplessness, breasts flabby and milk secretion stopped, abdomen not sensitive. Vaginal examination negative. Lochia sweet, and of normal amount. Spleen somewhat enlarged. No rose-spots. Lungs: resonance decidedly diminished over right lower base, dulness on percussion here; voice sounds were absent; no râles were heard.

Septicemia, typhoid fever and pleurisy with effusion were considered. Against septicemia was the absence of local signs of this disease. The vagina was normal and the lochia sweet. No focus of infection was discovered about the genitalia. Although the physical examination was negative, yet septicemia was not excluded. The physical signs in the lung were thought to be due to either a septic pleurisy or to an old chronic pulmonary process. The sequel showed that the latter view was correct.

Widal's test gave a negative result. A few days later the patient developed a typical erysipelatous rash which covered the buttocks and the back.

Case II. The patient was twenty-eight years old, had been married three years, and had had two children. She had always enjoyed previous good health. There was no trustworthy history of any symptoms denoting disease before a miscarriage which took place without apparent cause. The miscarriage was a severe one and the hemorrhage had been so great as to produce a condition of marked anemia.

Three days after the miscarriage she became very sick and her temperature rose to 103°. General prostration and other general symptoms attended the elevation of temperature. There was no chill. Two days later her condition was as follows: profound anemia, vomiting, great weakness, mild delirium, restlessness. Temperature 103°. Examination showed a uterus which was not remarkable on palpation; nor could any evidence of disease be detected in the appendages. The lochial discharge was slightly fetid and rather scanty. The spleen was slightly enlarged. There were no rose-spots.

The case seemed to be one of septic infection following miscarriage. So ether was given and the uterus dilated. Examination of the uterine cavity with the finger disclosed a portion of placental tissue as large as the forefinger. It was removed with the forceps and the cavity washed out. The operation did no good, however, and she steadily grew worse. Thinking the case might be one of sepsis complicated with typhoid fever, Widal's test was done, and a positive reaction obtained. Two days later, having steadily lost ground, she developed right hemiplegia, and soon died. The hemiplegia developed gradually.

In this case there was no question of sepsis. The typhoid fever was discovered by accident, and undoubtedly was responsible for the fatal issue. It is probable that the miscarriage was, in the first instance, occasioned by the typhoid fever. The case is interesting in that it illustrates the possibility of overlooking typhoid fever in cases of miscarriage followed by septic symptoms. In such cases Widal's test will give valuable information.

Case III. The patient was twenty-five years old, and had been delivered of her first child six days before. Three days after labor her temperature rose, and coincidentally with this she became very maniacal. She was incoherent, wandering in her speech, and had to be restrained. She was removed to the Austin Farm Asylum, where she was seen six days after the labor. Her condition was poor. Temperature 104°; pulse rapid and weak. Very restless; delirious, but easily restrained. General prostration marked. On examination, the abdomen and uterus were very tender, but there was no tympanites. On vaginal examination, under ether, no focus of infection was discovered. The uterus was curetted, and a small amount of tissue removed. She died on the same night.

In this case the diagnosis lay between puerperal mania and sepsis with delirium. Practically the two conditions cannot be distinguished. Puerperal mania is most frequently favored by four conditions: heredity, moral impressions, anemia, and sepsis. Heredity is particularly considered a potent predisposing cause. Clouston thinks we may have sepsis with maniacal delirium. Among 60 cases of puerperal mania analyzed by him, in 24 the temperature was 99° or under; in 26 it was over 99°; while in 14 it was over 100°. No other form of insanity shows this result. But all the cases of high temperature were not fatal. The causes of the high temperature in these cases were thought to be brain excitement, meningitis, malaria and other incidental causes, and finally sepsis, which was thought to be the principal cause. Clark thinks sepsis accounts for 50 per cent. of the cases of puerperal mania.

If sepsis is present, therefore, a positive diagnosis of puerperal mania is impossible. Some help is given in making the diagnosis by a previous neurotic history; and, if after the sepsis has run its course, the mania persists, the diagnosis cannot be in doubt.

The three cases illustrate very well that there is no positive symptom or sign which can be considered absolutely diagnostic of those cases of puerperal septicemia in which the focus of infection is within the uterine cavity. No difficulty is experienced in arriving at a diagnosis in those cases in which the focus of infection is upon the cervix or in the vagina. Thus, a diphtheritic membrane, or a sloughing perineal wound, taken in connection with high temperature, general prostration, chills and other symptoms of systemic infection, is sufficient evidence of puerperal septicemia in such cases. But in the cases in which the cervix and vagina are normal in appearance, and in which severe general symptoms are present, it may be necessary to study the case most carefully before arriving at a correct conclusion as to the nature of the disease.

Reviewing the usual symptoms of puerperal septicemia we find that the disease is, as a rule, ushered in by a chill or by chilly sensations. Rapid elevation in temperature follows, milk secretion is stopped, sweating occurs, vomiting may be present, and pains across the abdomen may or may not be complained of. Looking at these symptoms, we find nothing characteristic of septicemia; and grouped together they may be indicative of many diseases, as they are the symptoms of general systemic disturbance only. If the sepsis has started in the uterine cavity, as a general thing the lochia will be both scanty and offensive, yet the foul odor is not always present, and its absence is not to be considered conclusive. Bumm studied 750 cases of labor, in 22 per cent. of which there was a rise in temperature. In 16 per cent. the fever was shown to be due to causes not related to labor; in 29 per cent. no cause could be found; in the remaining 55 per cent. the fever rose from infection of the genital tract. This result shows that in only a little more than half the cases in which there is a post-puerperal rise in temperature is the rise due to sepsis, leaving a large number to be accounted for by some other disease. This study is an important one, and shows that needless alarm need not be felt at elevation in temperature after labor.

To enumerate the diseases and conditions which may give rise to an elevation in temperature after labor would be to discuss a great variety of diseases. Among the non-infectious conditions may be mentioned what is called emotional fever. This gives an elevation in temperature which is due to some sudden shock to the nervous system, such as fear or fright. It rapidly subsides. Constipation has been known to cause fever. So also may the influence of reflex action. Hirst mentions a case in which continued high temperature was due to the presence of a tape-worm in the intestines.

Intercurrent affections may likewise give rise to fever in the puerperal state. Among these may be mentioned pneumonia and pleurisy. If the latter is diagnosticated, the possibility of its being of a septic nature should be borne in mind. Scarlet fever is not uncommon. The point of entrance of the disease may be the vagina. A correct diagnosis may be suspected if the physician has been treating cases of scarlet fever in his practice. The incubation period in the puerperal woman is three days as against five or seven days in the non-puerperal. In some cases, according to Boxall, the ordinary signs of scarlatina are absent, or so slight as to escape observation; in these cases the symptoms are usually referred to septic poisoning. The diagnosis may, therefore, be very difficult if not impossible.

Puerperal erysipelas has given rise to much discussion as to its nature and its relation to puerperal sepsis. Hirst states that there is indubitable proof that the poison of erysipelas when introduced into the genital canal of a parturient woman may produce a virulent form of sepsis without manifesting externally the rash which is commonly supposed to be distinctive of the disease. Yet Gusserow opposes this, and draws his conclusions from experiments on animals with Fehleisen's streptococcus. He was unable to produce infection of animals by inoculating the microbes into the peritoneal cavity. The main weight of evidence, however, is in favor of there being a decided relation between erysipelas and puerperal sepsis. In the case cited (Case I) clinical evidence appeared to show that the erysipelas went through its usual course without giving rise to signs usually present in cases of puerperal septicemia, unless we suppose that the infection was strictly intra-uterine. Winkel has seen 42 cases of erysipelas during pregnancy and the puerperal state: 36 of these occurred after delivery, six occurred during pregnancy. Of the 36 cases occurring during the puerperium, 28 began in the genitalia. Hirst believes that a large number of cases of puerperal septicemia may be traced to the poison of erysipelas in which there is no external manifestation of the disease.

The diagnosis of malaria during the puerperium is best accomplished by examining the blood. And in this connection the subject of typhoid fever may be discussed. If this disease has pursued a mild course, its presence may escape detection; and the symptoms to which it gives rise being so nearly identical to those of septicemia, it is easy to see how the two diseases may be confounded. Furthermore, it is possible that the two diseases may coexist in the same person, as Case II shows. It should likewise be borne in mind that the typhoid fever may be the cause of a miscarriage. This adds to the difficulty of diagnosis. Yet in such a case valuable evidence may be secured by careful questioning as to the immediate previous history of the case. Finally, in cases in which there is a suspicion of the disease we have in Widal's test a satisfactory and conclusive means of diagnosis, which should be employed in all cases of doubt.

Lutaud describes a form of disease which he calls puerperal herpes, occurring between the second and the fifth day after confinement or abortion. In the cases reported the febrile attack was ushered in by a chill and the pyrexia severe, rising to 103° to 104°, the fever rapidly subsiding after the appearance of the herpes. Lutaud calls attention to the disquieting nature of the symptoms and their liability to be confounded with grave septic infection.

Enough has been said to show that post-puerperal rises in temperature need not be considered with the great alarm that is usually occasioned, and that they do not necessarily mean septicemia. The conclusion offered is that, in view of the great difficulty of diagnosis in many cases, on account of the similarity of symptoms which are characteristic of so many diverse diseases, the diagnosis of puerperal septicemia should in all cases be made by exclusion.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

ONE HUNDRED AND SEVENTEENTH ANNIVERSARY.

At the Section on Surgery, which met on Tuesday, June 7th, the following papers were read:

"The Pathology of Certain Surgical Diseases of the Bones and Joints," by DR. E. H. NICHOLS, of Boston.

"The Question of the Curability of Cancer of the Breast," by DR. J. C. WARREN, of Boston.

"Tetanus and its Treatment," by DR F. B. LUND, of Boston.

"Corrections by Operation of some Deformities of the Nose, by DR. G. H. MONKS, of Boston.

At the Section in Medicine the papers were —

"Antitoxin in the Treatment of Diphtheria," by Dr. J. H McCollom, of Boston.

"The Toxin of Diphtheria and its Antitoxin, According to Recent Experimental Investigations," by Dr. Theobald Smith, of Boston.

"Recent Advances in the Bacteriology of Typhoid Fever," by Dr. M. W. Richardson, of Boston.

"Epidemic Cerebro-Spinal Meningitis," by Dr. A. H. Wentworth, of Boston.

The Shattuck Lecture was delivered by Sir William H. Hingston, of Montreal, on

THE INFLUENCE OF THE CLIMATE ON THE NORTH AMERICAN PEOPLE.

The papers read before the annual meeting on June 9th were the following:

"Types of Habit Neuro-Psychoses," by Dr. E. W. Taylor, of Boston.

"Formaldehyde Gas as a Disinfectant," by Dr. D. D. Brough, of Boston.

"Treatment of Neurasthenia and Hysteria," by Dr. Morton Prince, of Boston.

"The X-ray in Medical Practice," by Dr. F. H. Williams, of Boston.

"Some Modern Methods of the Treatment of Phthisis and its Symptoms, and What is to be Avoided (illustrated with lantern slides), by Dr. E. O. Otis, of Boston.

The Annual Discourse was delivered by Dr. William T. Councilman, of Boston, whose subject was

THE INFLUENCE OF PATHOLOGY UPON PRACTICE.[1]

At the Annual Dinner, which followed the discourse, the President, Dr. H. P. Walcott, made the following Address:

The medical year which is drawing rapidly to its close has been, upon the whole, a fortunate one. No grievous pestilence has prevailed in the land, the general conditions of health in our State have been exceptionally good, and the affairs of the Society have prospered.

We have, indeed, no startling discoveries in our art to celebrate, nor have we found in the allied sciences any new or unexpected means of assistance. There have, however, been everywhere applied, in hospital, in laboratory, and in general practice, a closer study of the conditions of the human body in health and disease, and a larger experience with the newer remedies has been acquired.

The antitoxin of diphtheria has been very extensively used under circumstances that give us much of the certainty of an experiment in the laboratory; and, in this State, a death-rate from this disease which once reached 30 per cent. of all those attacked has been reduced to less than 10 per cent. It is a joy to think of the many happy homes that have been saved from the desolation which inevitably followed this most intractable malady, and it is a source of even greater satisfaction that we may rightfully expect to soon possess similar remedies against diseases of even greater importance.

This discovery was not accidental; it was the result of long, patient, and extremely intelligent observation and experiment, and required the resources of well-equipped biological laboratories; and it should be the business of this Society to encourage by all the means in its power the maintenance of the highest scientific standard for the practitioners of medicine.

At the same time it is of even greater importance to the community as a whole, that the physician should be a trained scientific observer. The cost of these higher institutions of instruction in medicine is great, but even at the lowest valuation of the lives saved in one epidemic of diphtheria the gain vastly outweighs the expenditure.

The act of incorporation of this Society in the year 1781 began with the following words: "As health is essentially necessary to the happiness of society, and as its preservation or recovery is closely connected with the knowledge of the animal economy, and of the properties and effects of medicines." . . . In later sentences it declares, "And whereas it is clearly of importance that a just discrimination should be made between such as are duly educated and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine (whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community)." . . .

True to the lines of activity thus traced for the Society, a successful effort was made a few years since to establish a board of registration whose function should be the examination and certification of persons found to be qualified for the practice of medicine. The board both by its constitution and its inclinations has, at no time, attempted to interfere with the methods of cure employed by any sufficiently educated practitioner. An attempt was made by this board, whose useful history had justified the wisdom of its appointment, to secure from the present legislature some extension of the powers of the board.

The customary hearing before a committee of the legislature brought to the State House the persons interested in those methods of healing which, however profitable they may be, have never yet been admitted to the course of study in any institution of learning, and, indeed, which have never sought for admission there. There was some talk of a liberty, which seemed only to mean a determination to be ignorant of all that science can teach us, and much eloquent denunciation of the tyranny of those who seek only to improve the medical police functions imposed upon practitioners of medicine by existing statutes. The recommendations of the Board of Registration did not receive the approval of the committee of the legislature.

No competent physician is injured by the impostures of the charlatan and the quack, even though, in the words of Sir Thomas Browne, "they be full of cruelty and worse than any other, deluding not only into pecuniary defraudations, but the irreparable deceit of death."

If the medical profession were looking only to a pecuniary profit in such legislation, it would undoubtedly decline to again approach the legislature in this cause, and might well declare that it is the business of the community to secure such protection as it desires.

We cannot, however, wholly escape from an obligation which rests more heavily upon us than upon other responsible members of society, and must, each in his own sphere, contribute what we can of our special knowledge of disease and its rational treatment.

For a whole generation there has been no occasion in this Society to consider the medical aspects of war. We are again, however, called upon to bring the relief of medicine to men wounded in battle and suffering from the diseases of the camp. The student of the hygiene of armies needs not to be told that up to the time of the great war no such humane provision for the sick and wounded had ever been made. Let us see to it that under the serious conditions imposed by the present struggle we make a like improvement upon the more recent and better experience acquired in the later European wars.

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[1] See page 557 of the Journal.

For the first time in history the German army in the war of 1870 lost fewer men by disease than it did in battle. The best experience before that had been in the armies of the United States during the War of the Rebellion, when the deaths from disease outnumbered those killed in battle or dying from wounds by more than two to one.

The diseases of the camp belong essentially to the class of preventable diseases, and the country cannot excuse itself if they are not prevented.

The surgeon is a non-combatant, better protected than ever before by the consent of all civilized nations and under the protection of that ever-victorious banner which bears the Red Cross of Geneva; but the heroic names of Revere, Ware, and many another from our ranks are proof that the attendant on the wounded seeks not nor finds exemption from death while engaged in his merciful task.

What better example of the best in our profession can I propose to you than him who, unmoved in the fierce tumult of battle, seeks only to relieve a sufferer's anguish, and humbly claims for himself as did the great father of military surgery, "I have dressed his wounds, but God has cured him."

The President then called upon **Sir William Hingston**, of Montreal, who alluded to his presence at former meetings of the Society and of the pleasure with which he remembered his reception, which led him to predict that he expected to be invited to a subsequent meeting. He said that inasmuch as his lectures were always clinical, he was used to having a patient before him presenting a lesion, such as a fracture or dislocation about which he could frame his remarks. He was unable to find any flaw or lesion, traumatic or pathological, in the remarks of the previous speaker, Dr. Walcott, which he could seize upon as a subject, and consequently felt somewhat at a loss. He could not help feeling, however, in the presence of such an assemblage, the value of such meetings, with the social intercourse and interchange of views which they made possible, to the medical profession. The country physician was apt to regard the city consultant as a different order of being from himself, as not having to meet the same problems in his daily life. These meetings make it possible for all classes of the profession to become acquainted with each other; and there is no question but that they result in increased respect of each for the other. The city physician gains increased respect for the country doctor; each learns from the other points which are of value in practice.

Speaking of English and Canadian sympathy with the United States in the war now in progress with Spain, he said:

"In the struggle in which you are now engaged, it is a matter of great satisfaction to read the expressions of good will for America which are made in the press of Great Britain. We wish you all success, and we all hope that the struggle may be as short as possible, and that peace may soon return. When America suffers, she suffers not alone for the whole world suffers with her."

Rev. Francis G. Peabody, Plummer Professor of Christian Morals in Harvard University, spoke of the great changes in medical practice, particularly in the direction of specialism which recent progress in medical and surgical science had brought about. He spoke with appreciation of the wonderful results in the saving of life which the skill of great specialists had made possible, and paid a warm tribute to the knowledge, devotion, courage and self-sacrifice of the general practitioner, who was obliged in his daily practice to cope with all the emergencies of the various specialties. He paid a warm tribute to the character of Dr. Morill Wyman, of Cambridge, who was present as a guest at the dinner. The character of the country doctor's work was well expressed, he said, in a recent advertisement which he had seen in a daily paper: "Wanted. A good strong horse to do the work of a country doctor."

"In the midst," he said, "of the wonders of the new time and of its marvellous results, let us honor the work and service of the rank and file. It is a good thing to have the name of the admiral on the lips, but it is also well to think of the men who fought the battle that Dewey planned. And while the name of the young naval constructor arises to the lips, it is well to know that hereafter Hobson's choice is to mean the choice of life or death that his friends might live to win the victory — to think, too, of the jackies at the guns and of the stokers away down in the hot, sweltering firerooms. So in the medical profession, while we love to honor the great names which naturally come first to the lips, let us not forget the loyal, patient, untiring country practitioner.

President Eliot, of Harvard, spoke of the great changes which were taking place in medical education, and particularly of the great value of the training of the eye and hand made possible by laboratory work. The laboratory should form a far more important part of the education of the student than the didactic lecture. He had observed with pleasure that the Harvard Medical School had in recent years been converted into a nest of laboratories, but he noted with regret that there were still some lecture-rooms there. He spoke of the advantage which would accrue to the profession if young men who were well-to-do, and would therefore not be dependent upon their professional incomes for the support of their families, would enter it with the intention of devoting themselves to scientific study. He said he had talked within the past twenty-four hours to a number of young men who had expressed a desire to join "Roosevelt's rough riders." "They are free to go, they say; there is no one dependent on them; they desire to go; and they will go. That same spirit, which is a noble spirit, is what we want to recruit the medical profession — a class of men of well-to-do circumstances, who, not dependent upon the income from their profession at the beginning, may devote their time to higher study and investigation."

Mr. Heman W. Chaplin, who spoke for the legal profession, alluded to the select character of the assemblage which he was addressing. He was obliged to note the absence of the Kickapoo Indians, the Faith Curers, and other professors of the healing art, whose active practice of their profession was kept before the public in the advertising columns of the daily papers. He spoke of the hold which certain irregular practitioners seemed to have upon a certain class in the community and even of a certain advantage which they sometimes possessed over the regular physicians. This had been illustrated in his experience by a certain "herb doctor" in a little town on Cape Cod, who was frequently called in consultation by families in cases which had not yielded to the treatment of the regular physician of the village. If the patient got well the "doctor" got all the credit; if he died, then it was recognized that not even his occult powers could save him.

Alluding to President's Eliot's desire that well-to-do young men who would not be dependent upon their professional incomes should enter medical practice, Mr. Chaplin said that the legal profession was overcrowded with young men who had neither practice nor prospects of it. One of these had recently told him he would almost be willing to pay any client who would accept his services. If President Eliot would like a supply of these young men, who in his opinion constituted about thirty per cent. of the recent graduates of our law schools, he thought he could furnish him as many as he wanted in lots to suit.

Among the guests of the Society at the dinner were Dr. Morrill Wyman, of Cambridge, and Prof. Edwin Klebs, of Chicago.

After the dinner about two hundred members of the Society went on an excursion down the harbor.

A pleasing feature of the dinner was singing by a glee club led by Dr. R. C. Cabot, and largely composed of members of the Society who were former members of the Harvard Glee Club.

THE MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

The annual meeting was held at Mechanic Building, Boston, on Tuesday, June 7, 1898.

The meeting was called to order at five P. M. by the President, Dr. Henry P. Walcott. One hundred and twelve Councillors indicated their presence by signing the roll.

The Secretary read the names of 131 Fellows admitted since the last annual meeting, and of 31 whose deaths had been recorded.

It was voted, on recommendation of the Committee on Membership and Finance, that $3,000 of the surplus in the treasury be distributed among the district societies.

The Committee on Publications reported that Dr. James J. Putnam, of Boston, has been appointed to deliver the Shattuck Lecture at the annual meeting of the Society in 1899.

On motion of Dr. E. G. Cutler it was *Voted*, That a committee of three be appointed to draw up rules for the guidance of physicians in advising schools in reference to their behavior towards pupils exposed to contagious diseases. The following were appointed to constitute the Committee: Drs. E. G. Cutler, J. H. McCollom, J. F. A. Adams.

The Committee on Nominations reported, and the following were chosen officers of the Society for the ensuing year: President, Dr. Edwin B. Harvey, of Westboro; Vice-President, Dr. Maurice D. Clarke, of Haverhill; Treasurer, Dr. Edward M. Buckingham, of Boston; Corresponding Secretary, Dr. Charles W. Swan, of Boston; Recording Secretary, Dr. Francis W. Goss, of Roxbury; Librarian, Dr. Edwin H. Brigham, of Boston. Dr. Edward H. Bradford, of Boston, was chosen Orator for the annual meeting of the Society in 1899.

Voted, That the next annual meeting of the Society be held in Boston on the second Wednesday in June, 1899.

The following Standing Committees were appointed:

On Arrangements, Drs. P. Thorndike, J. E. Goldthwait, M. Storer, S. Crowell, W. H. Prescott, F. G. Balch.

On Publications, Drs. O. F. Wadsworth, G. B. Shattuck, H. L. Burrell.

On Membership and Finances, Drs. F. W. Draper, E. G. Cutler, L. R. Stone, F. W. Goss, W. Ela.

To Procure Scientific Papers, Drs. H. P. Bowditch, F. H. Zabriskie, H. L. Burrell, F. W. Chapin, C. W. Townsend.

On Ethics and Discipline, Drs. G. E. Francis, F. C. Shattuck, C. G. Carleton, E. Cowles, J. F. A. Adams.

On Medical Diplomas, Drs. H. E. Marion, E. N. Whittier, O. F. Rogers.

On State and National Legislation, Drs. E. B. Harvey, H. P. Bowditch, T. H. Gage, S. D. Presbrey, S. W. Abbott.

SUFFOLK DISTRICT MEDICAL SOCIETY.

THE SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

Regular Meeting, Wednesday, February 23, 1898, Dr. F. W. Johnson in the chair.

UTERINE CUTTING FORCEPS.

Dr. W. L. Burrage: This instrument I devised some months ago for the purpose of removing pedunculated or submucous fibroids from the fundus of the uterus. I had an opportunity to use it on a case this morning, and I will say a word or two in description of the instrument, and then I will say a word or two as to the case. The forceps is some nine and a quarter inches long, and has a lock here two inches from the cutting end, and is made quite stout. The handles are made like the uterine scissors of Jacobs; some spring to the handles, very little spring to the blades. The cutting surfaces are three-eighths of an inch wide, and the ends are one-half inch wide being ground so as to protect the operator's finger. The blades are fenestrated so that the forceps will not become clogged with the tissue as it is removed. The purpose is to have the blades take hold and bite and pinch off the tissue. I first thought of getting it up in operating with another operator some months ago on a case of soft fibroid, a large one situated at the fundus. I was impressed with our lack of instruments to remove growths situated in this region.

As many of you know by experience when you get hold of softer tissue with the vulcellum forceps the forceps tear out. When you take hold with the ordinary hemostatic forceps, if you take hold of a small piece, the forceps pinch and crush the tissue; if you take hold of a larger piece the forceps slip off. There is nothing to use for such cases, particularly where the growth is situated at the fundus of the uterus. Where it is low down, one may use the curved scissors; and if at the fundus, one may use the right-angled scissors if there is room enough for them to work, but you run the danger of cutting through into the peritoneal cavity. You know the spoonsaw of Thomas and the danger that went with its use. Latterly with the technique perfected by the Frenchmen in the morcellation of fibroids it is unnecessary to have anything beside the vulcellum forceps; but in softer tissues, as I have said, the vulcellum forceps does not work very well.

The case I saw this morning, through the kindness of Dr. Kingman; and which I had the chance to help him operate on, had a uterus which might be represented here something after this fashion: It was the case of a young working-woman, twenty-seven years old, who had had very severe flowing; she flowed twelve days each month, and latterly had been flowing a large part of the time. She had a retroverted uterus, for which a practitioner in New York had inserted a pessary, which had caused some ulceration in the vagina without relief of symptoms, and she had recently been curetted by a prominent practitioner here in Boston in his office without ether, without relief of the flowing. She had a large uterus, some four and a half inches deep, retroverted and the ovaries prolapsed, one somewhat enlarged and cystic. The uterine cavity was dilated so that it admitted the finger, and at the fundus of the uterus could be felt this fibrous nodule, the size of a pullet's egg, projecting into the uterine cavity. It was directly at the fundus, and could just be touched by the examining finger introduced through the cervix. That was the sort of case I had in mind when I got up these forceps. One could get hold of the tumor with the vulcellum, but could not enucleate it. The cutting forceps were introduced through the cervix after this fashion, and opened, and a piece of the tissue seized and bitten off; and then piece after piece was seized with the forceps and cut out; and, finally, the entire growth was removed, and a little roughened surface was left where the tumor had previously been. The forceps worked very well indeed, and I was much pleased with the way it behaved. There was comparatively little hemorrhage. There was a very abundant growth of fungous tissue all over the uterine cavity that was previously curetted, leaving the walls quite smooth. No further growth could be felt in any other part of the uterus, inside or out, and I am in hopes the operation has proved successful.

TRANSFUSER FOR INJECTING ARTIFICIAL SERUM.

Dr. C. G. Cumston: I should like to present to the Society a transfuser for injecting artificial serum, and which is perfectly aseptic. It is not intended so much for use in private practice as for hospital use. It is simply an ordinary burette holding 300 c. c., of solution. I have used, for the past eighteen months, a concentrated serum in preference to the normal salt solution, and think it works far better and more rapidly than the ordinary serum. Several tubes of 300 c. c. each may be injected in twenty-four hours, according to the urgency of the case and the symptoms. It is a simple graduated burette with a stopcork with a rubber tube, and on the end you put the needle. The atmospheric pressure, when you take out the cork, is quite sufficient to allow the solution to run into loose subcutaneous tissue. A formula I have been using is composed of one gramme of chloride of sodium and two grammes each of the glycero-phosphate and sulphate of sodium. It is a combination of Hyem's formula and the formula of Andebert of Bordeau. The glycero-phosphate seems to act very rapidly on the nervous system in cases of shock.

THE PRESERVATION OF PATHOLOGICAL SPECIMENS.

Dr. F. W. Johnson: I am sorry Dr. Whitney is not here to-night. He was to describe the method now used in the Warren Museum for the preservation of pathological specimens. When preserved in this fluid they retain more nearly their natural color and shape than when preserved in alcohol and other solutions. It is the Kaiserling method. Probably all of you have seen it in print, and I will pass round the specimen with the formula which Dr. Whitney kindly sent. It is a case of fibromyoma of the uterus with double hemato-salpinx. On one side the tube ruptured and let out the blood; on the other side the blood is still there, and its colors are well preserved. The specimen has shrunk somewhat, but not very much, and the color is very much better than if it had been kept in alcohol. It was removed on the 31st of last December.

CALCAREOUS CHANGE IN AN INTERSTITIAL FIBROID.

This other specimen I brought to show the calcareous change that had taken place in an interstitial fibroid in the centre of this mass. It was removed day before yesterday from a woman fifty-six years of age, and removed for pain. The menopause occurred two years ago, since which time she has flowed none. The left Fallopian tube had become twisted round, so that the tube and ovary were adherent to the bladder and anterior parietal peritoneum, and the whole covered by omentum which was universally adherent to the anterior parietal peritoneum. The intestines were also adherent to the left ovary. It is hard as stone.

Dr. Marcy: The uterine tumor presented is interesting and, in my experience, unique in character. The history of the patient is briefly as follows: Mrs. B., aged fifty-eight, was a healthy, well-developed girl, married early in life. She suffered the loss of the perineal structures at the delivery of her only child, about twenty-five years ago. At forty a moderate-sized uterine fibroid was discovered, but she was informed that this would disappear at the climacteric. Menstruation continued until about fifty. For some years she has been in large degree an invalid, because of dragging pains in the pelvis when standing. She had great difficulty in passing urine and in defecation. During the last few months she had grown rapidly worse, with marked abdominal enlargement and very decided nervous symptoms.

She was seen by me two weeks prior to the operation. There was a most pronounced cystocele, protruding and extending the vulva. A rectocele was also very pronounced. The abdomen was greatly distended and rendered much more than usually sensitive, because of a large umbilical hernia with its adherent contents.

The operation was performed February 20th, in which I was assisted by Dr. Ferguson, of Troy, N. Y. There were sixteen pints of light wine-colored fluid free in the abdominal cavity. The incision was extended above the umbilicus. The sac of the umbilical hernia was exsected and a portion of adherent omentum removed. The uterus was symmetrical in shape, its surface nodulated by an immense number of small uterine fibroids, everywhere disseminated through it. Petechial infractions of the peritoneum were numerous over the uterus and upon the sides of the abdominal wall, the probable cause of the bloody exudate which coagulated upon cooling. The uterus was removed without special difficulty, the cervix closed over by peritoneum; the abdominal wall was sutured in layers, and the wound closed and sealed without drainage.

Immediately following the abdominal operation, I restored the perineal structures in my usual manner. Upon section, the uterine wall is found to be uniformly thinned to about an inch in diameter and everywhere studded through with hundreds of minute uterine myoma, loosely encapsuled, the largest of which are about the size of walnuts. The uterine cavity is filled with a growth which arises from the posterior wall of the fundus, from a base of about three inches in diameter. From this a large number of growths proceed, each independent from the other except at base, lying closely compressed upon each other, three to four inches in length. They are of a light grayish color, having an exceedingly thin investment membrane, and very easily broken by pressure. The general disposition of this growth, forty to fifty segments, is very like a bunch of bananas. The uterus and tumor weighed three pounds.[1]

Dr. Edgar Garceau read a paper entitled

DIFFERENTIAL DIAGNOSIS OF PUERPERAL SEPTICEMIA, WITH CASES.[2]

Dr. Chadwick: It seems to me, Mr. President, that Dr. Garceau's paper is very valuable, as calling our attention to causes of fever in childbed which we are apt to overlook. Everything nowadays is septic infection and we have almost forgotten to look for other things. I do not think, of course, that a definite diagnosis can always be made, any more than Dr. Garceau does; but in old times we used to have more septic fever after childbed, and I got to regard a chill, sudden rise of temperature and generally entire absence of abdominal distention and abdominal pain as quite characteristic of septic infection. I certainly had a good many cases in the early days with those peculiarities; the absence of local tenderness or pain impressed me very much. The symptoms invariably subsided, in my experience of 18 or 20 cases, if disinfection of the uterine cavity was effected soon after the initial chill, and they all ended in recovery. The cases I saw in consultation — late, perhaps, after distention of the abdomen had supervened — were pretty generally fatal. The early cases were always treated by the intra-uterine douche before the day of the curette; and, as far as I know, they did just as well as they now do with the curette. Differentiation in diagnosis of puerperal mania and puerperal sepsis, with maniacal or mental symptoms, is extremely difficult. The case to which Dr. Garceau alludes as having gone to the Austin Farm I happened to see in consultation the day before. The woman was, I think, of French parentage; had married without the sanction of the church; had a civil marriage; had a year afterwards been delivered of this child under very strict antiseptic precautions, and two or three days afterwards, suddenly, without much of any elevation of temperature — I am quoting from memory — without chill, without any discharge or local tenderness or anything whatsoever, suddenly became maniacal; and, in my judgment, the case was puerperal mania, and not due to sepsis. I, of course, should hold that opinion subject to revision, but that was my opinion at the time. Dr. Garceau, seeing her later and probably getting a somewhat different history, — quite naturally thought it might be septic, and I am not sure but what he was right in curetting. I hesitated myself whether it should be done. But these cases are extremely difficult to differentiate.

Dr. Call: I have seen two or three cases which interested me very much on account of the difficulty of diagnosis. I reported them to this Society last year. They were cases of acute tuberculosis, in which the symptoms resembled those of sepsis so closely that the diagnosis was not made for some time. In fact, in one case it was not made during life; another of abdominal tuberculosis was made by the exploratory incision; the third developed symptoms of pleuritic effusion, which was supposed to be septic, until upon aspiration the serum was found to contain the bacilli. This case subsequently recovered. Therefore acute tuberculosis is one of the diseases we should bear in mind, as Dr. Garceau suggests, before deciding that the case is septic.

Dr. S. H. Ayer: I should like to say a word about the treatment of puerperal sepsis. When I was a house-officer at the Lying-in Hospital some twelve or thirteen years ago, I was very much impressed by the use of iodoform in such cases. At that time we had quite an epidemic of the disease; and I remember very distinctly four cases of the diphtheritic variety, all of which were very ill indeed, and which were apparently going from bad to worse under treatment by intra-uterine douches of corrosive sublimate, which cases finally began to improve and eventually recovered under this treatment: it simply consisted of a block tin tube similar to that used in intra-uterine douching, with the end cut off; which tube was connected with an ordinary powder-blower filled with iodoform. The patient was first given a cleansing douche and the tube passed to the fundus of the uterus, the patient being on the back at the time, and a bivalve speculum being used. The powder was then blown to the fundus of the uterus and the tube gradually withdrawn. There were no precautions taken as to the amount of powder that was blown in; and although the danger of air embolism was considered, no such complication ever occurred. These four cases, all of which were extremely ill, recovered, and they impressed me very much. Since that time the treatment, of course, has changed, and the use of the curette has come into play largely; and I have questioned at times whether the best treatment of puerperal septicemia was the use of the curette, whether it did not open up avenues for further infection; and certainly, if the curette were not in the hands of one accustomed to manipulating it, there might be more danger in its use than in leaving it alone.

Dr. Cumston: It occurs to me that there is one point in the treatment of women after their confinement which is very often overlooked. Occasionally we have a slight chill and rise of temperature on the second or third day following labor, although it may be perfectly normal and non-instrumental; and in such cases it has been my experience to find that the woman has been kept flat on her back. It has been my practice for some time to have patients sit up in bed after the first twenty-four hours in order that there may be a regular drainage from an inclined plane so that all the lochia would drain immediately from the uterine cavity and not collect therein. I think that retention of the lochia within the uterine cavity is a frequent cause of sapremia, not septicemia.

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[1] March 18th. The specimen has been presented to the Warren Anatomical Museum, and Dr. Whitney pronounces it a very rare form of malignant adenoma, arising from the endometrium. It will be preserved as an illustrative specimen. The patient is sitting up, and is soon to return home. She has made an uneventful and easy recovery.

[2] See page 567 of the Journal.

Dr. Marcy: I have treated a good many cases with the use of the curette. I never hesitate to use the curette carefully; and I believe the variety with fine teeth — spoonsaw curette — is worth more than any other curette we have. It does not cut as deeply into the tissues as the sharp cutting curette, and removes irregularities of the uterine surface, certain portions of necrotic structure, better than anything else I know. After thoroughly cleansing the endometrium, I consider it important to rub into the abraded wall of the uterine cavity iodoform freely. If infection has not gone too far, this will prove efficient. The difficulty is, this is often done too late after the foci of disease are beyond the uterine cavity. Then, of course, whatever you do locally is only palliative.

Dr. Emma L. Call read a paper entitled

FIBROID TUMORS AS A COMPLICATION OF PREGNANCY AND LABOR.[3]

Dr. Chadwick: This subject was the title of a paper I read before the Massachusetts Medical Society some ten years ago, giving about twelve cases. Since then I have seen half-a-dozen cases. The opinions I expressed at that time I have not seen occasion to change especially. They are pretty well set forth by Dr. Call, that is to say, my impression is that in about two-thirds to three-fourths of the cases you can depend upon the fibroids practically disappearing within a year following delivery. They may reappear. When I say disappear I mean disappear so that you cannot recognize them by the touch. I think in some cases it has been evident that the uteri have been a little larger than would be normal, from which I inferred that a little bit of the fibroid probably did persist; and true it is that in subsequent pregnancies they usually reappear. If we can count upon two-thirds or three-fourths of fibroids existing at the time of labor disappearing a year following labor it is a pretty safe thing to let them alone and not think of cutting out the fibroids or cutting out the pregnant uteri. I have seen only one case in which any serious injury or a fatal result followed the labor. I have seen atony of the uterus, that is to say, a protracted labor in some cases, the uterine muscles acting less effectively to expel the child; and subsequent to expulsion I think there is apt to be more hemorrhage than is normal and sometimes even alarming. I have seen in some cases premature labor. The only case which ended fatally was one I put in charge of the late Dr. Dow, of Somerville, where after labor there presented at the os, and even at times protruded through the os, a fibroid as large as a cocoanut; she became septic. I saw her perhaps a week after labor — it was before the days of these radical operations — and I thought the safest plan was to disinfect the uterine cavity with douches as fully as we could. I am not sure but that was an erroneous decision, but at the time it seemed wise; that was ten or twelve years ago, prior to the reading of my paper. Of course, if a fibroid is held immovably below the brim of the pelvis, there is very little chance of delivering a child past it; then more radical measures have to be taken. In all but one of my cases the fibroids were above the pelvis; in that one the tumor at the time of labor was lifted above the pelvis. So that I have not had to remove the pregnant fibroid uterus in any of the cases I have seen; and, as far as I know, there has been but one fatal result.

Dr. Marcy: First, I would commend the reader for her valuable paper. Two illustrative cases come to me at this moment that are interesting and instructive. The first, a patient with continued hemorrhage after delivery, not controlled by all the efforts of the attending physician. Upon dilating the partially constricted cervix we removed a fibroid tumor, quite a fist's size, from the posterior wall of the uterus. The second is even more interesting. A woman upon whom I advised hysterectomy because of a uterine myoma perhaps, the size of a large cocoanut or fetal head, after a time became pregnant. It went on to full term, and she was taken in labor. After about forty-eight hours of unsatisfactory effort the cervix dilated in such a way that the attending physician thought he was able to deliver. His attempts to put on forceps failed, but he was able to turn, and made an extraction to the neck, when unfortunately it separated and the head was left in the uterine cavity. At that stage of affairs I was called to assist. The patient was, of course, greatly exhausted, having lost a good deal of blood; but it seemed there was nothing to do but an immediate hysterectomy. I removed the uterus and the fibroid, and the patient died eighteen hours later. I showed the specimen here two or three years ago, with the head still *in utero*, and the tumor was considerably larger than the uterus with the retained fetal head — perhaps the size of an adult head.

I have several times advised and induced abortion for fibroid tumors. It seems undoubtedly that the whole question of determining what to do in this not very rare class of complications is based upon the location of the tumor itself, its size, rapidity of its growth and the conditions of probable mechanical interference in delivery. There can be no doubt but that the pregnant uterus is greatly impeded in its function by a fibroid tumor; that it does its work mechanically imperfectly, and that when it recovers from labor there is a very large probability that the nutrition of the fibroid by this very process of parturition is interfered with and is much more likely to undergo absorption. I remember several cases where the fibroid tumor disappeared, and so far as I know never gave further trouble; but in the class of cases where a fibroid tumor is sufficiently large to interfere with the expulsive efforts of the uterus, it is certainly a very important question to determine thoughtfully what you may do rather than how long you may wait. In many instances I think it is well to advise hysterectomy and in the earlier stages of impregnation abortion may be the safer method. It is an interesting subject to every practitioner, since it may occur at any time and for which every one cannot be too thoughtfully prepared to act and that too, sometimes very promptly.

Dr. Cumston: The reason which would appear to me why we do not have more records from maternities of labor complicated by fibroid is for the simple reason that usually women miscarry before they get to term. I was at the Rotunda Hospital in 1892, and I distinctly remember two cases in the gynecological department there; perhaps they were not reported in the obstetrical department. They were treated surgically. Regarding how much trouble a fibroid will give, and even when extremely small, I beg to relate a case that occurred in my practice this year, and which Dr. Hare saw with me in consultation. It was a young lady twenty-six or twenty-seven, who miscarried at three months two years ago without any known cause. She was very healthy; the husband was extremely well; and the miscarriage occurred at three months very suddenly. She again became pregnant last year; and everything went on nicely until about the middle of pregnancy, when she sent for me one morning in a hurry, stating she had discovered she had a tumor. I examined the abdomen very carefully and just behind the umbilicus was a small reniform tumor which I took at the time to be perhaps a supernumerary floating kidney. It gave a peculiar pain when pressed upon, but the particular feature of the growth was that when the patient was in the recumbent position it would sink into the left iliac fossa and disappear, and I myself could move it quite freely two or three inches up and down. Not being very sure of my diagnosis, I had a consultation with Dr. Hare, who was rather of the opinion it was a pedunculated fibroid; and as the eventual history of the case showed, he was correct. This small fibroid, which certainly was not larger than half the palm of my hand, caused such a uterine inertia during labor that after the patient had been thirty-six hours in labor the thigh forceps was applied and a very large child was delivered. There was considerable blood lost at the time. The patient did very well until the seventeenth day: the lochia had entirely disappeared; and during the seventeen days there has been no odor whatsoever. She gained rapidly, nursing the child. There was an abundance of good milk, and in every way she was well. On the seventeenth day the temperature went up, and she developed phlegmasia alba dolens in the left leg. That got well in the course of fourteen or fifteen days, and then there was a second rise of temperature with chills, and the other leg was taken, which got well without any complications; and the patient is now up and about. I mention this because I would consider, and it was the opinion of other gentlemen who saw the case, that the fibroid was the cause of the difficult labor, uterine inertia, as well as the probable latent and tardy infectious process that took place in the case. The growth has diminished in size, but I can still palpate it.

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[3] See page 547 of the Journal.

This case illustrates very prettily the evolution of a fibroid. When the patient aborted, the neoplasm was seated in the uterine parenchyma and prevented the organ from further development, and consequently a miscarriage resulted. Then during the interval before the second conception took place, the neoplasm became subperitoneal having escaped from the uterine parenchyma, and in no way interfered with the development of the uterus during the second pregnancy.

The Medical Association of Denmark has distributed throughout the country pamphlets and placards containing directions for the prevention of tuberculosis.

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EXEUNT MEDICINÆ DOCTORES.

The present month at the medical schools will be devoted to the final examinations. A multitude of candidates will obtain the coveted parchment; some after thorough study, some by dint of cramming, some — no one knows how!

In ancient times the oral method of examination prevailed; this has now for the most part gone out of vogue as a test of the fitness of the student for promotion or graduation. There were weighty objections to the oral examination — still admirable in the form of the class quiz as a stimulus to students. The examiner doubtless had autocratic power to accept or reject whom he pleased, as the examination could be severe or easy to suit the occasion, and there could be no appeal; it was even possible for this method to cover much superficiality and illiteracy. By the written examination the powers of the student are much more thoroughly tested and the results of his earlier education are brought out. Moreover, all of the class are served alike, and the written answers are preserved and can be appealed to in the event of dissatisfaction with the decision of the examiner.

Those whose task it has been to read and mark medical examination papers must have often noted the lack of literary ability displayed by some students who have a fairly good comprehension of the subject. These are papers where to award one due merit is a severe trial. Other papers are chiefly remarkable as indicating a vivid memory of the exact words of the lecture or of some text-book. Such students may not only pass the examination but take a high rank, though not necessarily profound or thorough. Other papers will be submitted which will cause a sensation of horror and despair to the instructor.

It is a question whether great illiteracy — though coupled with a fair knowledge of the subject — should not at once doom the candidate to rejection. A junior or senior should, we think, be sent back to the study of his spelling book, grammar and dictionary who in answer to the question, "What is an abscess?" replies, "An abscess is a colecshun of puss in a circumcised cavity." A candidate for the degree of M.D. who spells inflammation with one *m;* suppuration, *supperation;* capillaries, *cappilaries;* bacillus, *baccilus;* and even blunders just as badly with common English words, and who can hardly write a sentence grammatically cannot be expected to honor a learned profession to which the diploma of a medical school gives him admission.

It may be said that these are very exceptional instances, but there are examiners in some medical schools who would be forced to admit that they are too common. It is from just this illiteracy and ignorance that our leading schools of medicine have obtained or are trying to obtain emancipation. It cannot but be admitted that the standard of medical education in this country is advancing. This is first of all apparent in the greater thoroughness of the matriculation examinations. The grossly illiterate must and will be excluded. Those medical schools (and they are too few) that propose to make matriculation dependent on the possession of a degree of Arts (or its equivalent) have taken a step in the right direction. Moreover, through affiliation with the Association of American Medical Colleges, many schools have raised the grade of requirements, both of matriculation and of the entire curriculum; and there is also a noticeable feature of progress in the fact that a four years' course of study is being very generally adopted.

All these indications of progress are to be welcomed; but it will, we fear, long be true in this country that too many persons enter the medical profession with an insufficient or unsuitable preliminary preparation.

MEDICAL NOTES.

The Third International Congress of Applied Chemistry will be held at Vienna beginning on July 28th.

The Chickamauga Park Hotel has been purchased by Mrs. L. Z. Leiter, of Chicago, who will have it fitted up as a hospital for the troops, and will then present it to the Government. The officials have intimated their willingness to accept the gift.

Foreign Medical Practitioners in Italy. — The Italian Government has officially announced that no modification will be made of the laws at present in force relative to foreign medical practitioners in Italy. Foreign practitioners duly qualified and registered may therefore practise as freely as they desire.

Yellow Fever in Mississippi.—Up to June 14th nine cases of yellow fever had occurred at McHenry, Miss. A detention camp has been opened under the supervision of the Marine-Hospital Service. The army and navy medical departments are taking every precaution to protect the troops against infection.

Agglutinative Properties of Pneumococcus Serum. — At the Congrès Français de Médicine Interne, held recently in Montpellier, MM. Fernand Bezancon and V. Griffon presented a communication relative to the agglutinative properties of the serum in infections with the pneumococcus, and the application of these to the diagnosis of such infections.

The American Association of Genito-Urinary Surgeons. — At the meeting of the American Association of Genito-Urinary Surgeons, held at Cranston's Hotel, West Point, on June 7 and 8, 1898, the following officers were elected for the ensuing year: President, Dr. James Bell, of Montreal; Vice-President, Dr. Samuel Alexander, of New York; Secretary and Treasurer, Dr. W. K. Otis, of New York. It was decided to hold the next meeting at the Clifton House, Niagara Falls, in May, 1899.

American Pediatric Society. — At its last meeting in Cincinnati, June 1st to 3d, this Society elected the following officers: President, Dr. W. P. Northrup, New York; First Vice-President, Dr. G. N. Acker, Washington, D. C.; Second Vice-President, Dr. Irving M. Snow, Buffalo; Treasurer, Dr. E. M. Buckingham, Boston; Secretary, Dr. S. S. Adams, Washington. Additional member of the Council, Dr. F. Forcheimer, Cincinnati; Editor, Dr. F. M. Crandall, New York. It was voted to hold the next meeting at Deer Park, Md.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, June 15, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 10, measles 53, typhoid fever 7.

A Gastrectomy in Boston. — Dr. M. H. Richardson performed this operation two weeks ago upon a woman of forty-seven years, removing the pylorus and the whole of the stomach except a very small portion of the cardiac end, for carcinoma. The patient is doing well and will probably recover.

Resignation of Dr. Page. — Chas. W. Page, M.D., has resigned from the superintendency of the Danvers Lunatic Hospital, and has accepted the position of Superintendent of the Connecticut Hospital for the Insane at Middletown, Conn.

NEW YORK.

Commencement at Columbia. — The one hundred and forty-fifth annual commencement of Columbia University was celebrated on June 8th, and for the first time in the history of the institution the exercises were held within the University's own grounds. There were 479 graduates, including those of the Medical Department, and 148 more degrees were conferred than on any previous similar occasion. The first Harsen prize, of $500, of the College of Physicians and Surgeons, was awarded to Victor C. Peterson. At a meeting of the trustees of the University held June 6th, the resignation of Prof. William H. Draper was announced, and in recognition of his long services in the college he was made professor emeritus. Dr. Draper, who was born in Brattleborough, Vt., in 1830, was graduated from Columbia College in 1851, and from the College of Physicians and Surgeons in 1855. He afterwards pursued his medical studies in Europe for some time, and had been a professor in the College of Physicians and Surgeons for twenty-nine years. In 1880 he was appointed Professor of Clinical Medicine, and it was of this chair that he was made professor emeritus. In 1886 he was elected President of the New York Academy of Medicine. Among the gifts to the University announced at the meeting of the trustees was a portrait, painted by Huntington, of Dr. James W. McLane (late President of the College), presented by the Faculty of the College of Physicians and Surgeons.

The Red Cross Work. — The Medical Advisory Board of the American National Red Cross Relief Committee held its first meeting on June 6th. There were present Drs. Francis Delafield, John S. Billings, William H. Draper, Edward G. Janeway, Abraham Jacobi, Francis P. Kinnicutt, William T. Bull, George F. Shrady, and A. Monæ Lesser. The board was organized by the election of Dr. William H. Draper as President, and Dr. F. P. Kinnicutt as Secretary. The First New York Ambulance Red Cross Equipment Society reported the receipt of subscriptions amounting to $48,073 up to June 5th, and that three of the ambulances ordered had already been completed.

Arrival of the "Solace" in New York. — The United States hospital ship *Solace* (formerly the *Creole*, of the Cromwell line), the first vessel of the kind in the world, arrived in port on June 5th, from Admiral Sampson's fleet and Key West. She had on board fifty-five patients, six of whom were wounded and the remainder sick, and they were landed at the Brooklyn Navy-Yard. The Senior Surgeon of the ship is Dr. Thomas A. Street, and on his staff are Passed Assistant Surgeons Stokes, Smith and Bogart.

The Long Island Medical Society. — Representatives of all of the county medical societies of Long Island met at the Garden City Hotel on June 8th, and organized the Long Island Medical Society The following officers were elected: President, Dr. William Browning, of Brooklyn; First Vice-President, Dr. L. N. Lanehart, of Hempstead; Second Vice-President, Dr. Wm. A. Hulse, of Bay Shore; Third Vice-President, Dr. Charles Jewett, of Brooklyn; Secretary, Dr. R. J. Morrison, of Brooklyn; Treasurer, Dr. A. J. Ferry, of Patchogue; Historian, Dr. Joseph F. Hunt, of Brooklyn.

An Epidemic of Trachoma. — An epidemic of trachoma was recently discovered in the Truant School on East 21st Street, and it was found that 34 of the 109 inmates were affected with the disease. Of the inmates 45 were kept as strict prisoners and the remaining 64 were allowed to go to their homes at night. The Board of Health was not able to find out precisely how the contagious ophthalmia was introduced, but its spread was readily accounted for by the fact that the boys all washed their hands and faces in a common wash-room and dried them on two or three towels suspended on rollers. All but 32 of the inmates were dismissed to their homes, proper precautions as to their treatment being taken, and the Board recommended that in future all pupils be examined by a physician before being admitted to the school, and an examination of the eyes of all the inmates be made once a month hereafter.

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Miscellany.

MEDICAL SUPPLIES OF THE VOLUNTEERS.

The following is a list of medical and surgical supplies furnished by the Surgeon-General of the State to each regiment of Massachusetts troops on their entering the service as United States Volunteers. The list is furnished to the Journal by Surgeon-General Blood. There have been some newspaper discussion and some discouraging statements as to the want of medical stores for the volunteer troops.

Field medicine chest, fully supplied with tablets. etc. 3 medical officer's orderly pouches. 2 field operating cases, with instruments complete. Reserve chest. 3 pocket cases, medical. 3 pocket cases, surgical. 3 hypodermic syringes complete.

200 Brown mixture tablets. 200 quinine sulph. tablets. 400 chlo. potash tablets, 5 gr. 2 lbs. aromatic spts. ammonia. 5 yds. antiseptic gauze, corros. 1 lb. sheet wadding. 500 phena. tablets. 2 lbs sulph. magnesia. 1 Arnold's sterilizer. 18 towels. 2 lbs. bicarb. soda. 2 pkgs. sapolio. 4 sheets. 3 operating gowns. 1 universal tool. 3 slop buckets. 1 kettle (agate). Cotton cloth, 3 yds. 1 gro. C. H. brushes. 7 silver catheters (1 to 7). 6 bougies (filiform).

Fracture femur outfit. Pair crutches. 12 coaptation splints. Pkg. drainage tubes.

Transfusion apparatus. 1 oz. tinct. benz. c. iodoform. Irrigating rubber bag. 4 oz. acid carb.

2 spools silk sutures. 3 cans plaster-of-Paris bandages. 3 cans gauze, iodoform. 6 splints, finger, tin. 2 splints, side. 4 splints. 3 splints, int. ang. 2 splints, Ham. 1 roll splint wire. Corkscrew. Ice cap.

1,000 tablets, antiseptic. 8 oz. foot powder. 1 lb. Seidlitz mixture. Medicine glass. Doz. mustard plasters. Doz. capsicum plasters. 1 qt. alcohol. 350 pepsin tablets. 1 lb. absorbent cotton. 100 sulph. tablets, 5 gr. 100 cathartic comp. 1-2 lb. licorice comp. tablets. 2 throat brushes. 200 chlorate potash tablets. 75 strychnia sulph. trit.. 1-60. 25 antifebrin 5 gr. tablets. 1 lb. diarrhea mixture. 2 oz. zinc ointment. 1 lb. ether sulph. 5 lbs. flaxseed, ground. 1 lb. mustard, ground. 250 roller bandages (assorted). 48 gauze bandages (15 yds. each).

Hospital tent, U. S. A. Furnishings as follows: 4 iron bedsteads, 4 mattresses, 8 sheets, 8 blankets, 4 pillows, 4 pillow cases, 2 chairs, 2 round tables, 1 office table, 2 toilet stands, 2 cuspidors, slop pail, water pail, lantern, 2 tin basins, 2 tin trays, 4 rubber blankets.

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Correspondence.

THE ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

Denver, June 11, 1898.

Mr. Editor: — The Denver meeting of the American Medical Association was of such unusual merit in many ways that some account, in addition to the formal report of the sessions, is deserved and may be of interest to your readers. The features most marking the meeting were the broad national character of the assembly, the large attendance and the high quality of the work done. First, the broad character of the assembly. In past years there has been a large attendance of local or State members, with comparatively few from distant places. Here, in spite of the long journey from other large cities and the Eastern coast, every State in the Union was represented and by a worthy number, the attendance not being by any means chiefly Colorado members, this State having hardly more than the proportionate number, in view of the distances. The total registration of physicians was 1,332, the largest number at any meeting save the special occasional meeting at Philadelphia last year. In addition there were registered at the headquarters for ladies the names of over 500 wives and daughters accompanying members. Other members of families or relatives were not registered, so that the total number of visitors was considerably more than 1,800.

The preparations to care for this large number were most ample and efficient. Never has the registration been effected with so little delay and blocking at the windows. This was due to the business-like care of the committee in providing large desk space away from the window for members to fill out the usual papers of registration before they came to the treasurer's window. In addition there was a sufficient and disciplined clerical force at the windows to expedite business.

In the same building there was a bureau of information fully and intelligently attended. A second bureau was established at the Brown Hotel, which from its location in the midst of the meeting-places of the Sections, all of which with one exception were within two blocks of the hotel, was an unofficial headquarters.

In passing, mention may be made of the exhibits, which were of the usual interest and merit, and more in number than at the meeting in Philadelphia.

The general character of the meeting was most satisfactory and encouraging. Not only was the attendance, as has been said, the largest of any meeting, but the number of men of prominence from all over the country was greater than in many years, a most gratifying evidence of the growing power of the Association as a national organization of the highest quality. The good character of the rank and file of the meeting was also a matter of frequent comment. The papers read before the Sections were good, and the discussions were marked by clearness and directness of thought and speech. Especially was this spoken of by those attending the symposium on appendicitis in the Surgical Section.

The Sections met in the various churches, thus having ample rooms with good acoustic properties. They were so arranged that members could go easily from one Section to another without loss of time.

An excellent map, showing the various meeting-places, was provided by the local committee. It had been carefully planned to fit the inside cover of the official programme without folding, but the JOURNAL, for some unseen reason, placed it, folded several times, in the back of the volume, where it was readily overlooked and not easy to consult.

The general sessions were held in the Broadway which was decorated, as were all the Section rooms, with American flags and bunting. The address of the President was read, in the absence of General Sternberg, by Lieutenant-Colonel A. A. Woodhull. The Address in Medicine by Dr. Musser, and especially that in Surgery by Dr. Murphy, were so delayed by business that many were too fatigued to remain to listen. To insure the proper honor to these general addresses in the future, the Association voted that hereafter an hour be set by the committee for these addresses, and that all business be suspended when that time comes, and finished after the address is delivered.

The great feature, however, of the general sessions, which has been on everybody's lips, was the splendid manner in which Dr. T. J. Happel, of Trenton, Tenn., the Fourth Vice-President, presided over the meetings. Rarely has such absolute order and quiet been kept in so large and general an assembly with such pleasant and winning courtesy of command. Without ever restricting freedom of speech, Dr. Happel kept the meeting down to the business in hand. His rulings were always fair, and more than once greeted with general applause. His statements of motions and points at issue were so clear and direct that no one was ever in doubt as to the precise vote in question. His expedition of business and grace of manner won the admiration of every one.

The entertainment of the visitors was such as might have been expected from the generous West. No convention could have received more evidence of welcome and hospitality. The programme of receptions and dinners was presented to the members in a souvenir volume of over a hundred pages of well-selected views of Colorado scenery and items of interest. A welcome and unusual feature was the entire absence of all advertisements from the book. The button, of silver, and the badges of the local committees were notable for their elegance and simple taste.

On Monday evening the Committee of Arrangements gave a dinner to the American Medical Editors Association. This was attended by 185 guests, and was in every way a great success. Those who were so fortunate as to be present all spoke of the dignity of the occasion and the excellence of the speeches. The addresses were short, bright and stirring. It was a noticeable thing at all the dinners that the remarks inspired by the toasts and the decorations, in every room of flags and bunting, were of the highest patriotism and national dignity.

On Tuesday evening the usual Section dinners were held at the various hotels in town and were well attended. On the same evening the committee provided, for the wives and such members as did not care to go to the dinners, an exhibition of lantern views of Colorado scenery, with an explanatory lecture.

Wednesday evening there was a large general reception given to all the members and their families at the Brown Hotel. Over 2,000 persons attended. The decorations were attractive, and the ball-room and supper-rooms were well cared for, so there was never any crush. Supper was served easily and at tables. The private receptions Thursday afternoon and evening were at the residences of citizens, and were generously given as a token of honor to the Association. Flowers, music and refreshments were generously provided for the large number of guests in every house.

On Friday the State Medical Society gave a free excursion to their guests in a trip up the wonderful Clear Creek Cañon to Georgetown and around the famous Loop. At Idaho Springs the entire excursion party, which numbered 1,500 persons, was given a substantial dinner by the citizens of that enterprising town. Entirely at their own suggestion this town of only 4,200 inhabitants provided a well-cooked and attractive dinner for the entire 1,500 visitors who came in seven special train-loads. The organization was admirable, and every one had a seat and a quietly served repast. It was but a type of the wide-open hospitality extended to us on every hand.

On Saturday the Association was again taken in special trains, and without cost, to Colorado Springs, where they were given lunch and an opportunity to visit the many places of interest there and at Manitou. The return was at our own convenience, the tickets given us being good until the 21st of June. Many have availed themselves of the exceptionally low rates offered by the railroads to visit other parts of the State, so that to-day, as I write, the great party is scattered and at an end.

In all this week everything has been done that could in any way add to our convenience, entertainment or instruction. Unfortunately the local committee, which apparently had everything else imaginable at their command for our pleasure, had no control over the weather, which played one of its provoking pranks and furnished cloudy days with showers until to-day when it has returned to its customary serenity of blue sky. The disappointment of the local men was keen, and it was hard to make them realize that if simple cloudiness was sufficient to be considered atrocious, as they called it, they must indeed have a fine climate, for the days were not uncomfortable nor did the showers interfere with the entertainments. But the mountains did stay hid, and the sun was exceedingly retiring or more correctly retired.

Taking the meeting as a whole, it was in every way a complete success, and one to be long remembered by those who were fortunate or wise enough to attend. The general absence of Boston men was more than once spoken of with regret.

The character of the men gathered here was notable, the quality of the Section work better than usual and the new half-century of the Association begun with a promise of ever-increasing usefulness. * * *

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BEWARE OF THE OSTEOPATHIC CIRCULAR.

SPRINGFIELD, ILL., June 6, 1898.

MR. EDITOR: — A concern in Chicago claiming to teach the alleged science misnamed osteopathy makes the following remarkable statement relative to its so-called courses in circulars which are sent broadcast over the country:

> "Terms of study are so graded and the courses of study so broad and complete that they comply with all the requirements of the Illinois State Medical Board and allow our students two years' credit on a regular medical education. These credits are recognized in any medical college in this country and will be equivalent to two years' work done there."

If by the "Illinois State Medical Board" is meant the Illinois State Board of Health, the assertion made in reference to that body is a lie in the fullest acceptation of the term. It is not true furthermore, that the "credits" named are recognized in any medical college in this country. On the contrary, it is exceedingly doubtful if a single reputable medical institution will grant any advanced standing whatever to applicants from this and other "colleges" of similar character. Should, however, this be done, it is needless to say that the institution or institutions concerned will receive no further recognition from this Board, and it will be remarkably strange if the various State Boards of Medical Examiners throughout the Union will view such irregular proceedings with complacency.

As the circulars are calculated to deceive the unwary, and to cause prospective graduates in medicine to waste two years of time, I will ask you to give this letter a prominent place in your Journal, in order that the facts in the case may be widely disseminated.

Very truly yours, J. A. EGAN, M.D.,
Secretary Illinois State Board of Health.

METEOROLOGICAL RECORD

For the week ending June 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	29.85	60	67	52	100.	92	96	N.E.	S.	8	13	C.	F.	
M..30	29.75	68	76	59	86	69	78	W.	N.	8	12	O.	O.	
T...31	29.92	64	72	56	69	84	76	N.	N.E.	10	12	O.	O.	
W...1	30.00	60	64	55	84	79	82	N E.	N E.	14	12	O.	C.	
T....2	30.00	55	57	53	97	91	94	N.E.	N.E.	17	10	R.	O.	.04
F....3	30 08	56	59	53	95	97	96	N.	N.E.	18	24	R.	R.	.23
S....4	30.26	52	54	50	96	83	90	N.E.	N.E.	23	15	R.	O.	.31
☞														.58

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 4, 1898.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Cerebro spinal men.
New York . .	3,438,899	1054	348	9.62	13.86	1.62	2.34	1.08
Chicago . . .	1,619.226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis . . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	149	55	10.05	17.42	.67	2.01	3.35
Boston . . .	517,732	180	55	12.32	11.76	.56	.56	4.48
Cincinnati . .	405,000	99	—	5.05	11.11	3.03	2.02	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	74	27	14.85	7.05	9.45	—	—
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	56	13	7.12	14.24	5 34	—	—
Worcester . .	105,050	32	10	9.39	18.78	3.13	—	3.13
Fall River . .	95,919	26	10	—	—	—	—	—
Nashville . .	87,754	30	11	10.00	6.66	10.00	—	—
Lowell . . .	87,193	23	8	—	26.10	—	—	—
Cambridge . .	86,812	22	5	12.45	4.15	4.15	—	4.15
Lynn	65,220	19	6	5.26	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	9	2	11.11	—	11.11	—	—
Somerville . .	57,977	—	—	—	—	—	—	—
Lawrence . .	55,510	9	5	—	18.18	—	—	—
Springfield . .	54,790	13	4	—	7.69	—	—	—
Holyoke . . .	42,364	13	5	38.45	30.76	22.07	—	15.38
Salem	36,062	12	1	8.33	16.66	8.33	—	—
Brockton . .	35,853	5	0	—	20.00	—	—	—
Malden . . .	32,894	5	0	20.00	—	—	—	—
Chelsea . . .	32,716	16	0	13.00	6.25	—	—	—
Haverhill . .	31,406	8	2	12.50	12.50	—	12 50	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	2	0	—	50.00	—	—	—
Taunton . . .	27,812	12	2	16.66	—	8.33	—	8.33
Quincy . . .	22,562	6	0	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	1	0	—	—	—	—	—
Everett . . .	21,575	6	2	—	—	—	—	—
North Adams .	19,135	5	2	—	20.00	—	—	—
Northampton .	17,418	—	—	—	—	—	—	—
Chicopee . .	17,368	5	4	—	—	—	—	—
Brookline . .	16,164	—	—	—	—	—	—	—
Medford . . .	15,832	9	3	—	18.18	—	—	—

Deaths reported 1,912: under five years of age 584; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 203, acute lung diseases 259, consumption 208, diarrheal diseases 45, diphtheria and croup 33, cerebro-spinal meningitis 30, scarlet fever 28, measles 20, typhoid fever 12, erysipelas 8.

From scarlet fever New York 13, Baltimore 2, Boston and Chelsea 1 each. From measles New York 13, Boston 3, Cincinnati 2, Baltimore and Pittsburg 1 each. From typhoid fever New York 4, Boston 3, Baltimore, Providence, Worcester, Malden and Chelsea 1 each. From erysipelas New York 5, Boston 3.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending May 28th, the death-rate was 16.5. Deaths reported 3,548; acute diseases of the respiratory organs (London) 216, measles 134, whooping-cough 131, diphtheria 55, diarrhea 34, scarlet fever 26, fever 19.

The death-rates ranged from 8.0 in Croydon to 29.1 in Halifax; Birmingham 17.6, Bradford 16.3, Cardiff 13.5, Gateshead 22.1, Hull 15.2, Leeds 17.1, Liverpool 22.5, London 16.0, Manchester 21.9, Newcastle-on-Tyne 22.2, Nottingham 15.2, Sheffield 16.2, Sunderland 23.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 4, 1898, TO JUNE 10, 1898.

Acting Assistant Surgeon THOMAS R. MARSHALL, U. S. A., will proceed from Richmond, Va., to Tampa, Fla., and report for duty with troops in the field.

Acting Assistant Surgeon GEORGE H. PENROSE, U. S. A., will proceed from Fort Douglas, Utah, to San Francisco, Cal., and report for duty with the Utah Batteries for the expedition to the Philippine Islands.

Acting Assistant Surgeon A. S. CONDON, U. S. A., will proceed from Ogden, Utah, to Fort Bayard, N. M., and report for duty.

Acting Assistant Surgeon JAMES H. MCCALL, U. S. A., will proceed from Huntingdon, Tenn., to Fort McPherson, Ga., and report for duty in the general hospital at that place.

Acting Assistant Surgeon W. P. Chamberlain, U S A., will proceed from this city to Fort Monroe, Va., and report for duty.

Captains Frank R. Keefer and Paul F. Straub, assistant surgeons, will report to the commanding general, Department of the Pacific, for duty with the expedition to the Philippine Islands.

Captain Charles F. Kieffer and First-Lieut. Powell C. Fauntleroy, assistant surgeons, ordered to Tampa, Fla., for duty.

Captain Ogden Rafferty, assistant surgeon, ordered to Key West, Fla., for duty in the general hospital at that place.

Captain William C. Gorgas, assistant surgeon, ordered to duty on U. S. Hospital Ship "Relief."

Captain John S. Kulp, assistant surgeon, is relieved from duty in Department of the Columbia, and ordered to report in person to the Surgeon-General of the Army for further orders.

Captains Frederick P. Reynolds and George J. Newgarden, assistant surgeons, having reported in person to the Surgeon-General of the Army, are ordered to Tampa, Fla , for duty with Cavalry Division.

Captain James D. Glennan, assistant surgeon, is relieved from duty with 6th U. S. Cavalry and ordered to Camp George H. Thomas, Chickamauga Park, Ga.

Captain William P Kendall, assistant surgeon, is relieved from duty with the 9th U. S. Cavalry and will proceed to Camp George H. Thomas, Chickamauga National Park, Ga.

Captain Henry R. Stiles, assistant surgeon, ordered to Tampa, Fla., for duty with 5th Army Corps.

Captain William Stephenson, assistant surgeon, is relieved from duty with the 4th U. S. Infantry, and ordered to Camp George H. Thomas, Chickamauga National Park, Ga , for duty with 1st Army Corps.

Captain Henry I. Raymond, assistant surgeon, is relieved from duty with the 13th U. S. Infantry, and ordered to Camp George H. Thomas, Chickamauga National Park, Ga.

Captain Edward C. Carter, assistant surgeon, will proceed to Chattanooga, Tenn., for the purpose of establishing a general hospital in the Chattanooga Park Hotel, to be known as the Leiter General Hospital, in accordance with such instructions as he may receive from the Surgeon-General of the Army.

Captain Willaim D. Crosby, assistant surgeon, will report to the Major-General, commanding the Department of the Pacific, for duty with the expedition to the Philippine Islands.

Acting Assistant Surgeon Edwards C. Poey, U. S. A., ordered to Tampa, Fla., for duty.

Acting Assistant Surgeon J. R. Shannon, U. S. A., ordered to Tampa, Fla., for duty.

The order assigning Acting Assistant Surgeon T. S. Dabney, U. S. A., to Tampa, Fla., is revoked, and he is ordered to Jackson Barracks, La., for duty.

Acting Assistant Surgeons Richard P. Strong and Henry E. Wetherill, U. S. A , ordered to Tampa, Fla., for duty.

Acting Assistant Surgeon Edward Schreiner, U. S. A., ordered to Fort McPherson, Ga., for duty in general hospital.

Acting Assistant Surgeon Frederick McG. Hartsock, U. S. A., ordered to U. S. Hospital ship "Relief."

Captain Alfred E. Bradley, assistant surgeon, ordered to Camp Alger, Falls Church, Va., for duty with 2d Army Corps.

Captain Edgar A. Mearns, assistant surgeon, ordered to Camp George H. Tarney, Chickamauga National Park, Ga.

Acting Assistant Surgeon James B. Ferguson, U. S. A., ordered from Olivia, Minn., to Fort Yellowstone, Wyo., for duty.

Acting Assistant Surgeon Rupert Norton, U. S. A., ordered to Fort McPherson, Ga., for duty in general hospital at that place.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JUNE 9, 1898.

Stewart, W. J. S., passed assistant surgeon. Upon being relieved by Assistant Surgeon John McMullen, to report at Washington, D. C., for duty. June 6, 1898.

Norman, Seaton, assistant surgeon. Granted leave of absence for two days. May 27, 1898.

McMullen, John, assistant surgeon. To proceed to Vineyard Haven, Mass., and assume command of Service. June 6, 1898.

BOARDS CONVENED.

Board convened to meet at U. S. Marine-Hospital, Chelsea, Mass., at 4 o'clock, P. M., June 1, 1898, for physical examination of officer of the Revenue Cutter Service. Detail for the Board: Assistant Surgeon H. W. Wickes, Chairman; Assistant Surgeon L. L. Lumsden, Recorder.

Board convened to meet at Washington, D. C., at 10 o'clock, A. M., July 6, 1898, for examination of officers for promotion and candidates for appointment as assistant surgeon. Detail for the Board: Surgeon George Purviance, Chairman; Surgeon John Godfrey; Surgeon D. A. Carmichael, Recorder.

COLLEGE OF PHYSICIANS OF PHILADELPHIA. THE FIRST NATHAN LEWIS HATFIELD PRIZE FOR ORIGINAL RESEARCH IN MEDICINE.

The College of Physicians of Philadelphia announces through its Committee that the sum of five hundred dollars will be awarded to the author of the best essay in competition for the above prize.

Subject: "A Pathological and Clinical Study of the Thymus Gland and its Relations."

Essays must be submitted on or before January 1, 1900.

Each essay must be typewritten, designated by a motto or device, and accompanied by a sealed envelope bearing the same motto or device and containing the name and address of the author. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers or their agents within one year.

The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

The treatment of the subject must, in accordance with the conditions of the Trust, embody original observations or researches or original deductions.

The competition shall be open to members of the medical profession and men of science in the United States.

The original of the successful essay shall become the property of the College of Physicians.

The trustees shall have full control of the publication of the memorial essay. It shall be published in the *Transactions* of the College, and also when expedient as a separate issue.

Address J. C. Wilson, M.D., *Chairman*,
College of Physicians, 219 S. Thirteenth St., Philadelphia.

RECENT DEATHS.

George Edward Freeman, M.D., M.M.S.S., died in Brockton, June 12, 1898, aged forty-six years.

Lord Lyon Playfair, the distinguished chemist, political economist, civil service reformer and parliamentarian, died in London on May 31, 1898, aged seventy-nine years. He was born in Bengal in 1819 and was educated at the College of St. Andrews, in Scotland. In 1843 he was appointed professor of chemistry in the Royal Institution at Manchester, and in 1844 he was appointed one of the Royal commissioners for the examination of the sanitary condition of the large towns and populous districts in England. He was next appointed chemist to the Museum of Practical Geology and Lectures in the Government School of Mines in 1851. In this year he was appointed Companion of the Bath in England, and an officer of the French Legion of Honor and he also was appointed gentleman usher to the late Prince Consort. From 1853 to 1856 he was secretary to the department of science and art in connection with the Board of Trade; in 1858 he was elected professor of chemistry in the University of Edinburgh, and in the same year he was president of the Chemical Society of London. In 1868 he was elected a member of Parliament for the University of Edinburgh and St. Andrews. He was a liberal in politics, and in 1873 and 1874 was postmaster-general under Mr. Gladstone. He was a Fellow of the Royal Societies of London and Edinburgh, as well as a member of many learned societies of Great Britain and the Continent and he was the author of numerous contributions to science. He was nominated to the peerage in 1892. Dr. W. S. Playfair, the distinguished London obstetrician, is his brother.

BOOKS AND PAMPHLETS RECEIVED.

Text-Book of Medical Jurisprudence and Toxicology. By John J. Reese, M.D., late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; late President of the Medical Jurisprudence Society of Philadelphia. Fifth edition, revised by Henry Leffmann, A.M , M.D., Ph.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania; Pathological Chemist to the Jefferson Medical College, Philadelphia, etc.

A Practical Text-Book of the Diseases of Women. By Arthur H. N. Lewess, M.D., Lond., Obstetric Physician to the London Hospital, and joint Teacher of Practical Obstetrics in the London Hospital Medical School; Examiner in Midwifery and Diseases of Women at the Conjoint Board of the Royal College of Physicians of London and of the Royal College of Surgeons of England, etc. Fifth edition. With 174 illustrations, four colored plates and 71 illustrative cases. Philadelphia: P. Blakiston, Son & Co. 1897.

Address.

THE RELATION OF PATHOLOGY TO MEDICINE.[1]

BY W. T. COUNCILMAN, M.D.,
Shattuck Professor of Pathological Anatomy in the Harvard University Medical School.

(Concluded from No. 24, p. 560.)

A NEW interest has been given to pathology, and new fields have been opened to it, by the discovery of the connection between lower forms of life and changes in tissue. The study of bacteria in their relation to disease must form an integral part of pathology. We have been able by the study of bacteria in connection with lesions to appreciate many important primary lesions which had previously escaped our attention. More than this, we have been able to extend the field of observation by experiment. In the study of the pathological changes in man we are more or less dependent on chance for our material. The lesions we are investigating may be so advanced when obtained from the autopsy that it is impossible to study their mode of formation. We are enabled by the inoculation of animals to obtain a lesion at any stage desirable for our study. Our knowledge of the histogenesis of the tubercle and of different forms of inflammation would have been impossible without such experimental methods. By inoculating animals of different species or animals of different ages, or varying the amount and virulence of the organism inoculated, we are able to produce experimentally and to refer them to definite causes, those variations of lesions of the same character which were formerly inexplicable. We have been able to recognize that certain lesions are due to the direct action of the organisms on the tissues, and that others are caused by soluble chemical substances, either produced by the bacteria themselves or by the tissues under their influence. There is unquestionably much work to be done in the study of bacteria, in their connection with botany and with hygiene. The study of their species, their morphology, their products, their variations, the part they play in nature, and their general relations to disease does not come under the pathologist. The study of bacteria in their definite relation to pathological anatomical lesions is a part of pathology.

Under general pathology come the questions concerning those alterations of function which are the result of anatomical changes. General pathology has also been called pathological physiology, and bears much the same relation to pathological anatomy as does the study of normal function physiology to anatomy. The attempt has been made in the Austrian University to divide pathology into the two departments of general pathology and pathological anatomy, with separate laboratories and teachers for each. This was probably the result of the narrow conception of pathology by Rokitansky and the Vienna School. It was felt that something must be added to the narrow descriptive science of Rokitansky, and, instead of forcing a proper conception of the scope of the science, they made the mistake of dividing it. General pathology has also been considered as experimental pathology in contra-distinction to pathological anatomy, as though the experiment did not form one of the bases of pathological anatomy if we consider this more than a descriptive science. Considered in this sense, general pathology is the connecting link between pathological anatomy and the clinic, and its problems can be approached from either side. The pathological anatomist who pays no attention to general pathology loses the power of thoroughly understanding the character of disease. He could be compared to the clinician who would be contented with the observation of the symptoms of a disease. A pathology which does not come in contact with pathological anatomy on the one hand, or with the clinic on the other, cannot progress, because it does not become acquainted with the character of the problems which disease presents. We owe many of the most important advances which have been made in pathology to those who have entered into it from a clinical point of view. The work of John Hunter in pathology is the most distinguished example of this connection between pathology and clinical medicine. It is seen also in the long list of distinguished English physicians — as Bright, Bennet, Addison, Gulliver, Williams and Fagge — who followed Hunter. The work of these men is important, not only in the actual contributions to our knowledge of disease which they made, but by following scientific methods they kept English medicine in the first half of the century free from the speculative philosophy of Germany. There can also be little doubt that the combined study of clinical symptoms with pathological anatomy makes the clinician broader and stronger. It is difficult to find a great clinician, either in medicine or surgery who has not made important contributions to pathology. We have only to point to English medicine in the first half of this century and to German medicine in the last half, to see the truth of such a statement. It is especially here that the experimental method produces the best results. The pathological anatomist must resort to experiment to ascertain the effect of a certain lesion or function. The clinician can in many cases understand only by varying the conditions of an experiment in what way a lesion acts in producing symptoms. The experimental method as applied to the elucidation of symptoms has yielded fully as important results to the clinician as to the pathologist.

In a consideration of the means for the study of pathology the laboratory comes first. The laboratory is designed to give better opportunities for those who work in the subject. The methods used in pathological investigation are so numerous, so complicated and often so expensive, the apparatus used often requires so much space, that it is rarely possible for a private individual to provide himself with such facilities. The pathological laboratory is a recent creation and with the increase of opportunity which it afforded the advance of the science went hand in hand. When Virchow returned to Berlin, his departure having been occasioned in 1848 by an excess of political activity which the authorities regarded as pernicious, he made one of the conditions for his return, the creation of a pathological laboratory in connection with the Charité Hospital. This example was followed all over Germany, and now no university and hospital is without its pathological institute.

In the United States there are numerous pathological laboratories, both in connection with teaching institutions and with hospitals. There has even been in this country the example of a pathological laboratory without any connection with either a medical school or a hospital in which pathology was studied as a branch of university work in biology, and as such, made important contributions to the subject. It is most interesting to compare the progress of medicine in England and Germany during this century. The conditions have been exactly reversed in the two halves of the century. The great advance which Germany has made in the latter half may fairly be attributed to the influence of the laboratories, the work of which in England was restricted both by the lack of means and by pernicious and meddlesome legislation.

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[1] Annual Discourse before the Massachusetts Medical Society, June 9, 1898.

The pathological laboratory should be considered from three points of view; but the different views obtained so merge into one another, and the different subjects are so interdependent that they form but special features of a single landscape. The three points are: first, its connection with a hospital in assisting in diagnosis and directly furthering medical art; secondly, a place in which all the opportunities for research shall be afforded; and, thirdly, a place for teaching. It is equally possible to view the hospital from such points of view, as a place for the best treatment of the sick, as a place for medical research and a place for teaching; and the excellence of development in any one of these aspects furthers the other. The best hospital and the best laboratory will be one in which all three sides are developed to the fullest extent.

First, in its connection with the hospital as a place where methods of diagnosis can be carried to a fuller extent than in the hospital. There has been to a certain extent some attempt in hospitals to separate this part of the work which so closely appertains to the clinic, from the other work of the pathological laboratory, and to call the place where it is carried out, the clinical laboratory. No good can come from such a separation, no more than has come from the separation of general pathology and pathological anatomy. It is of the utmost importance that the worker in one department should come in contact with those who are studying in others. That the man who has come from the clinic examined the urine of a man who has certain symptoms and found albumin and certain morphological products should exchange ideas with a man who is studying the pathological changes in such kidneys. Each obtains a more comprehensive view of the disease. The presence of tubercle bacilli in sputum should call up not only the clinical picture which would be presented, but the condition of the lungs. It is possible that in certain points a greater advance might be made by such separation but the broader point of view is lost. In the pathological laboratory should be contained every means which will facilitate such purely clinical investigations. They should in great part be carried out by the young men in the hospitals who themselves come in contact with the sick. Their work should be supervised by a man who is specially skilled in such methods of investigation and who can correct or assist them. Every day sees a greater advance in these clinical pathological investigations, and methods of examination become more complicated. Such investigations are of as much importance for the surgeon as for the physician. In the case of a tumor it is often of the utmost importance to know its exact character before operating. This knowledge will often determine the character and the extent of the operation. Nearly every disease, either medical or surgical, is more or less open to investigation by objective methods. An individual appears in the clinic with an inflamed throat, and we no longer surmise as to whether it may be a case of diphtheria without membrane formation or a membranous inflammation without diphtheria, but a culture is sent to the laboratory and the diagnosis is made on exact knowledge. It would take too much time to multiply examples. Experiments must often be performed in connection with such work. We are often only able to direct the presence of certain organisms by inoculating animals.

Next in the relation of the laboratory to the hospital comes the post-mortem examination. To make a post-mortem examination in a proper manner demands much more now than formerly. Bacteriological cultures must be made of every organ to determine not only the cause of disease but the extension of the organism in the body. There may be primary infection and secondary infection depending upon this. The organisms found may be of great virulence or attenuation, which can only be told by inoculation. There must be a thorough investigation of all the organs; the character of the lesions, their cause, and the effect of lesions in one organ, in determining lesions in another, must all be borne in mind. Thorough microscopic examination must be made of all the organs, for some of the most important lesions of disease can only be determined by microscopic examination. We do not know any disease; exactly the same conditions are not found in any two individuals dying of the same disease. We should regard a disease as an experiment, and the conditions of the experiment are more varied than we could possibly make them. The post-mortem investigations should be made with a knowledge of the symptoms and all that can be learned from the clinical course of the disease and especially by the objective methods of clinical investigation. Many conditions in the pathology of the circulation may become clear to us when objective methods of measuring blood pressure shall come into use. The work of the pathologist and the clinician should go hand in hand. The pathologist has a certain advantage in that the cause, histogenesis and relations between the lesions are for him a legitimate subject for investigation. The clinician cannot dispense with the pathological anatomical investigation unless he content himself with the bare diagnosis. The clinician should not think of the pathologist as a more or less useful individual who can sometimes give him information, nor should the pathologist regard the clinician as the blind instrument who under Providence furnishes him with material for investigation. All the work of the laboratory should be carefully recorded and the records made easily accessible. In such a way the work of each individual may be utilized even when he works no more.

I trust I have shown how much the second part of the laboratory work, that of research, is dependent upon the first part. But the research may extend much farther afield. Pathology is the study of life under abnormal conditions, and as such, and regarded simply as a branch of biology, is as worthy of study without any relation to the clinic or to man as is physiology. Some of the greatest advances which have been made in pathology have come from those who have attacked its problems from this point of view. It is possible that some of the pathological conditions in single cells will become much clearer to us from the study of cell changes in the unicellular organisms. The pathological laboratory should be provided with aquaria and with means for the study of vegetable pathology. The latter study has yielded most important results and has helped us to understand many things better. It is needless to say that in such a laboratory comparative pathology should have an important place. The science of comparative pathology has attained such an importance that it has its own laboratories and men who are exclusively devoted to it. The diseases of animals are now much better known from the anatomical and bacteriological point of view than they are from the clinical. Nothing can be gained but much lost by such separation of comparative and human pathology. This side of pathology has made and is making great advances. Investigations in it have been of great influence in the economy of the farm and country. By means of it many things in human pathology have been cleared up or the way for further investigations pointed out. The pathological laboratory then should afford opportunities to work, for those who wish to work in any department, and whose training has especially fitted them for certain lines of work.

In what relation does pathology stand to the medical student. We may start with the assumption that the student is to be taught those things which will enable him to practise his calling, and that medical education is certainly the best which will produce the best practitioner. Probably the greatest fault to be found in medical education at the present time is that with the greater extent of ground which it covers and with the greater specialization of departments there is a lack of organic connection. The student learns anatomy, chemistry, physiology; he passes his examination on these subjects, and they more or less pass out of his life and memory. On his first entry into the clinic he begins the study of conditions which seem utterly at variance with what he has learned before. He finds on auscultation of the heart of an individual that in the place of a short, sharp, second sound, there is a murmur almost comparable to the water rushing along a pebbly brook. In the place of the normal slow increase in the size of the artery at the wrist he feels a sudden sharp increase in size, then as sudden a collapse. He looks at the nails and sees that they first blush then pale. He is told that this condition is due to a regurgitation of blood at the aortic orifice, and he cannot see how his study of the normal circulation helps him in appreciating the condition here. If he is to understand the disease he must go much farther. He must understand how under the influence of a certain cause or causes a pathological process has been started in the valves and has led to a certain alteration in structure, called a lesion. That this lesion is the result of an inflammation in a tissue of a certain anatomical structure, and that in consequence of it the structure of the valves has become so altered that they can no longer perform their physiological function. His knowledge of the normal circulation tells him that the aortic valves should close slightly after systole, and how this is brought about, that the blood pressure in the arteries rises at each systole and slowly falls, the arteries emptying into the capillaries. It is only by comparing the normal structure with the abnormal, the normal function with the abnormal, that he is enabled to understand how the abnormal sound is produced and what it means. He must go farther, he must understand what compensation there is, what other changes have taken place which have made it possible for the circulation to continue in spite of such an abnormal condition. He finds that the heart is hypertrophied and dilated, and that at once brings him to the question of why and how this takes place. He must understand what effect this condition has had on the blood pressure, and to do this he may resort to experiment. What effect has this abnormal condition of the circulation had on the general blood-supply of organs and their nutrition. In certain cases he finds that in individuals with this lesion, the skin of the ankle pits on pressure; that the character of the urine is changed. He may recognize by a closer observation of all the clinical phenomena that in certain cases the active process by which the lesion is produced is still in progress, while in others the lesion is completed. In connection with the cause comes the action of bacteria. If he understands the disease it is necessary that he recall all that he knows of physics, anatomy, physiology and pathological anatomy — all these bear on the case — as soon as he begins to study the lesion and the effect of this in producing the abnormal function. Or he finds at the clinic that a patient presents himself with a swelling at a certain part of the body. He endeavors to distinguish by palpation whether the swelling is due to an exudation in the interstices of the tissue, or to the dilatation of an artery or to a new formation of tissue. He cannot learn this by being told that an exudation gives a certain sensation to the hand, an aneurysm another, a neoplasm another. He must know why this is the case, and the "why" again recalls all his previous knowledge. If the swelling be due to a neoplasm, he must know not its name but its character, why in the one case a simple excision is all that is necessary, and in another that the tissue must be removed from far around the tumor together with all the lymph glands connected with the part in which it originated.

Pathology serves this most important purpose, that it serves to connect the so-called theoretical branches of medicine with the so-called practical. The student gets a broader point of view, and when this is once acquired it serves him as a basis for his reasoning powers. Moreover, the student learns in the study of pathology the methods of investigation of disease. If he is to practise his profession in any other way than as a day-laborer, he will constantly meet cases which present to him new features. He must know how to make a post-mortem examination himself, and must know how to appreciate the relation between the anatomical lesions and symptoms. He must learn to investigate the causes of the conditions which he has found. If he is to become a teacher in any department of medicine, it is necessary that he should acquire the broader point of view, and the methods of reasoning which come from research combining clinical phenomena and anatomical changes. With regard to how the student shall be taught pathology, there are many questions to be considered. Laboratory instruction combined with experiments and demonstrations should form the basis of his instruction. He should be taught first those general pathological processes on which anatomical alterations depend and their causes, how the anatomical structure of an organ may modify the character of the lesion. Lectures are necessary to amplify what he has learned in the laboratory. Demonstrations should have the end of showing him what changes are produced in man by such processes. If possible, he should study with the demonstration the microscopic changes which have produced the gross appearance. In his laboratory course the student should thoroughly study one disease. He should inoculate an animal, study the clinical course of the disease, the lesions and their mode of production, and the relation of the lesions to the clinical phenomena. In an ideal course on pathology the student should have the opportunity for pathological work throughout his third and fourth year, when clinical instruction is given the most attention. He should during this time have a place in the laboratory where he can under some supervision carry on more or less independent work. He should have the opportunity to make for himself examinations of sputum, urine, blood, etc. Having followed a case through its clinical course and through the autopsy, he should have the opportunity to study for himself the lesions in connection with the clinical phenomena. It is only in this way and by keeping constantly in his mind the connection between the lesion and the clinical phenomena of disease that the student appreciates that pathology is not the study of macro- or micro-scopic changes in organs, but of life under abnormal conditions.

Original Articles.

REMARKS ON THE PATHOLOGY OF EPITHELIOMA OF THE UTERUS WITH REFERENCE TO OPERATIVE INTERERENCE.

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,

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Epithelioma of the cervix presents several anatomical types which are due to the fact that the cervix is lined by two different types of mucous membrane; one being the pavement epithelium which is in the vaginal portion, while the second is the cylindrical epithelium, found in the cervical canal. Two classifications may be made: the first is based on the histological structure of the neoplasm, and the second is based on its anatomical form. The first of these is the least useful, surgically speaking, because it gives only a slight idea as to the nature of the affection. Pavement-cell epithelioma develops on the cervix and easily invades the vagina and the bladder; its evolution is perhaps a trifle less rapid than that of cylindrical-cell epithelioma, although on that point there is nothing exact.

The cylindrical-cell epithelioma, on the contrary, is more malignant, but its seat in the beginning, which is in the centre of the cervix, will necessitate its destroying the uterine neck almost entirely before it can reach the vagina or the parametrium, and consequently this fact demonstrates why the disease may be present for some little time and still be in a proper condition for a radical operation.

We will only consider the various anatomical types which have been established from clinical observation, and at a period when the neoplasm is still in a state of only slight advancement, because towards the end of its evolution the invasion of the neighboring organs causes it to lose its principal characters.

There are three types, namely, the vegetating type, ulcerating type, and lastly, the interstitial type. We will also rapidly review the different varieties which are very infrequently met with, and which belong both to the cervix and to other neighboring organs, such as the corpus uteri and the vagina; but the clinical symptomatology, which is very characteristic, assigns them a separate place in the history of epithelioma of the uterus. As De Sinety states in his article in the "Dictionaire Encyclopedique," all the anatomical varieties of uterine cancer are similar both as to their progress and their gravity. Nevertheless, two principal factors appear to contribute to increase or to diminish the progress of the neoplasm, and its generalization. On the one hand, we must consider the invading growth, and on the other, the tissues which are invaded, and which will react against this invasion in a different manner, according to their anatomical structures.

The anatomical element of the neoplasm has a more or less considerable proliferating power, according to its age, and whether it is going towards the adult type, or whether it remains in the embryonic condition. Clinical observation shows that in the larger number of cases certain forms have a slower evolution than others; for example, the cavernous form has a far more rapid progress than the vegetating type.

We will first consider the vegetating type. It begins in two ways, either producing papillary productions at once which form on the surface of the cervix, or by a hollow irregular ulcer, with raised infiltrated borders, which is very difficult to distinguish from a benign ulceration of the cervix. No matter what may have been the manner of the commencement of the epithelioma, it ends by the formation of a papillary fungus production, which bleeds on the slightest contact, and whose volume may increase to such an extent that it may fill the vaginal cavity.

The cervix on which the neoplasm is implanted may be only partially invaded, but more commonly both lips are infiltrated and the orifice of the cervix is hidden in the midst of the neoplasm. At length a time comes when the cul-de-sacs are invaded, and when this has taken place the disease will invade the periuterine tissues with rapidity.

This form seems generally to have a less rapid progress than that which will next be described, due perhaps to the fact that it has less tendency, at least in the beginning, to invade the deeper structures, and it would appear that the epithelial proliferation has a tendency to extend *outwards* rather than *inwards* The general condition of the patient is less rapidly affected, perhaps for the reason that kidney lesions are less rapid to appear, and that the absorption of septic products is less easy than when we have the irregular cavities which we find in the ulcerating type of epithelioma.

The vegetating type is one of the forms of epithelioma in which the surgeon has to operate very frequently, and where we expect to obtain very excellent results. For example, Terrier, in a series of 1 hysterectomies performed for cancer, operated on fou cases of the vegetating type. The results that he obtained were as follows: One patient had a recur rence of the growth immediately, but nevertheless, lived for fourteen months, and the case was unfavorable because the left cul-de-sac was invaded at the time of the operation. The second case lived fifteen months. The third case lived two years, while the fourth one was alive three years and five months after the operation.

The writer operated on a case of the vegetating type of epithelioma of the cervix, and which was limited to the latter organ, in August, 1895; the patient was seen two months ago and found in perfect health, and no recurrence at the site of the operation, which was a vaginal hysterectomy. A second vaginal hysterectomy was performed for this type of epithelioma in the fall of 1896 by the writer, on a patient aged twenty-nine years. This patient, who was seen within the last six weeks, is in a flourishing condition, and no local return of the trouble.

Certain reported cases would appear to demonstrate that the disease may be less malignant than is usually admitted.

Richelot related the cases of two women who presented a vegetating epithelioma of the cervix, and whose lesions were in reality far less than would have been supposed by an examination. In both patients the relapse was expected to be rapid and fatal, so that for one of them a simple, palliative operation was proposed but vaginal hysterectomy was done at the patient's urgent request, and nevertheless the recurrence did not occur for six months in the first and two months in the second.

The writer has operated on several cases of the vegetating type of epithelioma, in which he did not feel justified in performing a vaginal operation, that is to say, hysterectomy, because the broad ligaments were already invaded by the neoplasm, and he simply resorted to the free use of the curette, scissors and Paquelin thermo-cautery, removing as much of the cervix and interior of the corpus uteri as was possible. One patient survived seventeen months, a second patient thirteen months and six days, a third patient eight months and a half, while the fourth is still living, although the operation was performed nearly seven months ago.

From these facts it would appear to the writer that in the vegetating form of epithelioma of the cervix, which has already extended too far to justify vaginal hysterectomy, a free removal of the growth is the proper measure, because the patients will have a far easier and much less painful death, if during the remainder of their lives they keep the vaginal canal in a condition of relative cleanliness, by the use of daily vaginal injections of some reliable antiseptic.

It is very evident that in many cases in which the vegetations on the cervix have reached very large proportions, still the penetration of the neoplasm into the depth of the tissues is not always in relation to the size of the cervical neoformation. Consequently the surgeon is justified in operating on these cases no matter what size the cervical neoplasm may be, but on the condition that the vaginal cul-de-sacs and parametrium are free from the neoplastic infiltration. Vaginal hysterectomy, and for that matter an abdominal hysterectomy, does not always give a perfect result as regards the recurrence of the growth, but as vaginal hysterectomy is both a simple and benign operation in properly selected cases, it is the one, according to the writer, that should always be selected.

Considering now the cavernous type, it may be said that this is found in epithelioma which makes its appearance in the mucous membrane, which is in the first place infiltrated by the neoplastic-cell elements, and later on ulceration takes place. The neoplasm then penetrates into the subjacent tissues, and will then produce circulatory troubles, such as hemorrhage, which is the result of the loss of tissue from ulcerative process. Ulceration thus produced extends in depth, and after having destroyed the cervix is not long in invading the bladder, rectum and broad ligaments.

In the form of epithelioma which we are now considering, the neoplasm extends in two different directions; namely, towards the corpus uteri and the periphery of the cervix. The vagina, on the contrary, is only involved at quite a late date, and we will meet with epithelioma which have entirely destroyed the cervix although this destruction is not visible by vaginal examination.

The cavernous type of epithelioma is usually made up of cylindrical cells, at least that has been the experience of the writer. Its progress is rapid, and a fact which is the most unfavorable for the patient is that it is usually insidious in its development, so that when these unfortunate subjects come to consult the surgeon the cervix will be found destroyed, and in many cases the bladder or rectum is already involved. At any rate we believe that this is the type of epithelioma in which operative interference is rendered extremely delicate because the uterus cannot be lowered by the forceps, and also because we cannot get a solid catch upon it on account of the friability of the tissues. If a cervix, which is the seat of this type of epithelioma, is seized by the forceps, and even only very slight traction be made, it will tear, and this applies also to the dissection, necessary in vaginal or abdominal hysterectomy, and consequently either operation is extremely risky.

This is a point which should never be forgotten by the surgeon, because in operating on such cases he will probably make a very incomplete dissection of the mass, and will surely leave pieces of the neoplasm in the wound, which will become the starting point of a recurrence almost immediately after the operation has been completed.

The question arises, Does this anatomical type of epithelioma have any particular indications as regards operation? And in reply we would say that interference should be based on the extent of the destruction of the cervix, which will be made out by dilating the cervical canal in the first place, and then afterwards examining the interior of the uterus with the finger. If the ulceration is not very deep, and if we may still expect an easy dissection of the mass; if we find no thickness in the parametrium, which would lead us to suppose that the neoplasm had extended upwards, we may still conscientiously operate, on the condition that the uterus is *movable* and that the *vaginal walls are elastic and supple.* On the contrary, when there only remains a thin shell of tissue, which represents the cervix, we should abstain, because in this case the invasion of the growth has extended deeply into the surrounding tissues, and when we are dealing with this variety of epithelioma we should consequently interfere with extreme prudence, and only so after we have employed all the means of exploration which are commonly used, and if there is the slightest doubt as to a deep extension of the growth, it is the writer's opinion that we should abstain from any radical operation.

Tillaux believes that in the ulcerating form of epithelioma practically nothing is gained by operation, while surgical interference is followed by unexpected success in cases of the vegetating type. The interstitial or parenchymatous form is met with the most infrequently of all types of epithelioma of the uterus. It begins by ulcerated foci which are found in the interior of the cervix, and which send out prolongations in every direction.

This manner of growth is extremely unfortunate, because the physician when consulted finds much difficulty in ascertaining the condition of the parametrium because the cervix is found very lumpy, but — are these lumps situated in the interior of the cervix, or are they seated in the cellular tissue which is adjusted to the cervix? This is just the point that is often very difficult to decide upon, and this type of epithelioma may be combined with the preceding types, more especially the vegetating form.

The diffusion of the neoplastic prolongations in all directions renders this type of epithelioma rapidly inoperable, and when a cervix is found infiltrated throughout with an irregular and lumpy surface, the writer considers that palliative treatment is the only one of avail as the neoplastic infiltration has extended beyond the limits reached by the knife.

Besides the anatomical forms of cervical cancer that have been mentioned, we would draw attention to other more infrequent varieties, which are not limited to the cervix, and a few words regarding them may not be out of place here.

In the first place we have the primary vaginal epithelioma, which is very infrequent, and in this case the neoplasm arises in most instances in the posterior cul-de-sac and invades both the cervix and the neighboring parts of the vagina, producing very extensive ulcerations.

The question of vaginal hysterectomy will not be often raised in this form, because the extension of the neoplasm is more especially in the vagina, which is nearly always greatly invaded when the patient consults the surgeon, and usually amputation of the cervix is the only operative interference indicated. Although the uterus is only slightly invaded by the neoplastic infiltration, hysterectomy would give no result because the lesion is more especially located in the vaginal walls.

The last type to which we would call attention is the epithelioma of the isthmus, which has recently been studied by Kaminer. This form of epithelioma is, so to speak, situated in both the cervix and the corpus uteri, and gives rise to symptoms which are quite characteristic. The commencement is in most cases very sudden, and combined by intense expulsive pains, which gradually increase with the expulsion of the neoformed mass, and after a certain time an abundant, fetid, glairy mass is expelled, after which the patient is much relieved. These symptoms are quite sufficient to put the surgeon on the track of a diagnosis.

The seat of the lesion facilitates the retention of the uterine secretion, and explains the dilatation of the uterus, and the symptoms that are present. This form of epithelioma should be treated by hysterectomy. *A priori* the lesion being situated in the centre of the uterus, is situated at some distance from the neighboring organs, which it will only attack after a certain lapse of time, and consequently a complete vaginal hysterectomy will in a large majority of cases be followed by a complete success, as the utmost limits of the neoplasm will have been included in the operation.

The painful symptoms to which this form of epithelioma gives rise will allow us to make an early diagnosis and operate in favorable conditions.

Kaminer relates two cases of this form of neoplasm. Both patients underwent hysterectomy, with the following results: in the first case the disease reappeared one year after the operation, and death occurred twelve months later, while in the second case a recurrence took place five months after the operation.

The writer has mentioned vaginal hysterectomy, but not with the desire to bring about a discussion relative to the abdominal and vaginal routes, but he personally considers the vaginal method the proper one when a radical operation is indicated in cases of epithelioma of the uterus.

In closing this paper, the writer would say that there is one condition to which he would take exception as regards operative interference, and that is when we can detect only a few isolated hard lumps of metastatic deposits in the parametrium, the uterus being free and the vaginal walls exempt from any trace of neoplastic invasion. In such cases an attempt at a radical operation may be reasonably tried, and under favorable circumstances these enlarged, infiltrated lymphatic glands may be extirpated along with the uterus; but we consider, as has been stated, that the vaginal or abdominal methods are out of the question and it is in such cases that Kraske's operation has its indications.

We are fully aware that many surgeons have condemned this method, particularly at the fifth German Gynecological Congress, held in 1893; but there can be no doubt, to those familiar with this operation, that it gives a most perfect view of the field in which we are working, and for this very reason all diseased structures can be removed. Moreover, the vessels are easily ligated and an important point is, that we can see and dissect out the ureters without detriment to them. Then, too, in Kraske's operation peritoneal infection from the neoplasm is to be less feared than in the vaginal and consequently in this respect is far superior to the abdominal route.

We admit that the Kraske is a difficult and long operation, but its results are good when applied to pathological conditions as above indicated.

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A CONSIDERATION OF THE PROFESSOR GÆRTNER-MOTHER-MILK.[1]

BY JOHN LOVETT MORSE, A.M., M.D.,

Physician to Out-Patients at the City Hospital and at the Infants' Hospital, Boston; Assistant in Clinical Medicine, Harvard Medical School.

THIS latest addition to the innumerable lists of the so-called infant foods has been used in Germany since 1894, but was not introduced into this country until 1897, when a factory for its production was established in Orange County, New York.

The method of its preparation, as described by Gærtner, is as follows: Equal parts of cows' milk and sterilized water are placed in a Pfauhauser centrifuge, which makes from 4,000 to 8,000 revolutions per minute. This separator consists essentially of a steel drum which revolves on its axis. The mixture is separated into a lighter inner portion (the "fat milk") and a heavier outer portion (the "skim milk"). These are then drawn off separately in equal portions. It is evident that the percentages of fat, sugar, proteids and ash in the mixture of milk and water put in the centrifuge are just half those of the original milk. It is claimed that by the process of centrifugalization practically all of the fat is driven into the inner portion, while the other constituents remain, as before, evenly distributed throughout the mixture; that is, the inner layer, or "fat milk," contains all but one-tenth or two-tenths per cent. of the fat and half the proteids, sugar and salts of the milk, while the outer layer, or "skim milk," contains only one-tenth or two-tenths per cent. of the fat and half the proteids, sugar and salts of the milk. The outer layer also contains the extraneous matter. The above statements must be, I think, accepted as essentially correct.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, January 19, 1898.

The inner layer, or "fat milk," forms the basis of the food. It is claimed that the percentages of fat and proteids thus obtained are identical with those in healthy human milk. As the percentage of sugar is much lower than that in human milk, enough milk-sugar is added to give the proper proportion. As the reaction of this food is alkaline, while that of cows' milk is acid, an alkali must also be added. Nothing is said about this, however, and I do not know the nature of the alkali. The food is sterilized and sold in "hermetically sealed" tin cans containing a third of a litre, or about ten ounces.

The following are some of the claims made for this food: "It is identical in appearance, taste and analysis with healthy breast milk."

"The fat is not separated from the cows' milk, but remains in its original natural emulsion."

"It is thoroughly sterilized and will remain pure and sweet for an indefinite time in almost any temperature."

"It is cheap relatively to its value as a food, and there is no waste in using it."

To substantiate the claim that the analysis of the Gærtner-Mother-Milk is identical with that of healthy breast milk the following table is given —

	Fat.	Casein.	Salts.	Sugar.
Human milk	3.10	1.55	.25	6.20
Gærtner milk	3.10	1.55	.25	6.20

This can be accepted only as a correct comparison of certain human milks with certain samples of Gærtner milk, and not as a general rule. It is evident from the process of manufacture that the percentages of fat and proteids in the "Mother-Milk" must vary directly with those of the cows' milk used. The percentages of these substances in cows' milk are not constant, however, but vary. The average analyses as given by various authors are as follows:

	Fat.	Proteids.
Rotch	4.00	4.00
Holt	3.50	4.00
Baginsky	3.40	3.50
Professor Gærtner-Mother-Milk circular	2.50	3.60

In making comparisons, Gærtner seems to have as a rule adopted Baginsky's formula, probably because it contains lower proteids. The percentages of fat and proteid in the Gærtner-Mother-Milk cannot, therefore, be constant. That this is so is shown by various published analyses.

	Fat.	Proteids.
Professor Gærtner-Mother-Milk circular	3.10	1.55
Professor Gærtner-Mother-Milk circular	3.10	1.70
Escherich (average of 24 exams.) . .	3.00	1.76
Poole	3.05	2.09

In the comparative table of the Professor Gærtner-Mother-Milk circular the percentages of human milk are given as if constant: fat, 3.10; proteids, 1.55. This is not so, however, as the figures below show:

	Fat.	Proteids.
Professor Gærtner-Mother-Milk circular	3.10	1.55
Professor Gærtner-Mother-Milk circular	3.10	1.70
Holt	4.00	1.50
Rotch	3.00–4.00	1.00–2.00
Adriance	3.83	.83–1.70
Pfeiffer	3.10	1.94

For purposes of comparison Gærtner seems to have followed Pfeiffer, probably because he gives low fat. It is evident, therefore, from the above tables that while the proportions of fat and proteids in various specimens of Gærtner-Mother-Milk are the same as those in various specimens of human milk, the percentage of fat is, on the whole, lower and that of the proteids higher than in human milk. The food is unsatisfactory, however, because it is inconstant and because there is no means of knowing the composition of any individual specimen. Moreover, it is insusceptible of modification to suit individual cases. These are very serious defects.

The statement is made that "the fat is not separated from the cows' milk but remains in its original natural emulsion." I am not prepared to contradict this. Poole, however, states that "when cold, part of the fat separates out, forming a layer on top of the liquid." The directions on the can — "Place the can in hot water from three to five minutes and shake well before opening it" — seem to verify this statement.

There is no doubt, I think, that the milk "will remain pure and sweet for an indefinite time in almost any temperature." This can be attained in one of two ways — by the addition of chemicals or by sterilization. It is claimed that nothing is added to the milk, but that "it is thoroughly sterilized." Sterilization to fulfil the above conditions must be at 212° on at least two successive days. Sterilization at this temperature is supposed to cause chemical changes in the proteids which render them less suitable for the infant digestion. It also deprives the milk of the quality commonly known as "freshness," and thus places it in the class of foods whose use is at times associated with scurvy.

The retail price given in the company's circular is fifteen cents a can or $1.50 a dozen. The retail price given me at Weeks & Potter's, the Boston agents, was twenty-five cents a can or $2.50 a dozen. A can holds about ten ounces. A baby a month old would use about two cans a day, costing twenty-five cents or more a day; and one eight months old, five cans a day, costing sixty cents or more a day. At this rate it is certainly not a cheap food but a rather expensive one. The average cost of a properly modified milk from a milk laboratory is no greater, and that of modified milk prepared at home much less. These milks, moreover, can be varied to suit the age and individual.

CONCLUSIONS.

The Professor Gærtner-Mother-Milk contains only the constituents of cows' milk. These constituents are present in approximately the same proportions as in human milk. The proportions, however, are not constant and are unknown to the consumer. These proportions are insusceptible of modification. It is not a fresh food. It costs as much or more than modified milk which is freshly prepared and whose proportions can be varied.

REFERENCES.

Adriance. Archives of Pediatrics, 1897, xiv, 22.
Baginsky. Lehrbuch d. Kinderkrankh., 1896.
Escherich. Wiener med. Woch., 1894, xliv, 1864.
Fischer and Poole. New York Medical Record, 1897, lii, 839.
Gærtner. Wiener med. Woch., 1894, xliv, 1870.
Holt. Diseases of Infancy and Childhood.
Pfeiffer. Quoted by Baginsky.
Rotch. Pediatrics.

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Clinical Department.

PULMONARY TUBERCULOSIS TREATED WITH KOCH'S NEW TUBERCULIN.

BY C. D. NELSON, M.D., GREELEY, COL.

On July 21st last I began the use of Koch's new tuberculin (T. R.) on two cases. The intervals between the doses were those recommended by Koch. The first dose was one five-hundredth of a milligramme solid substance, as recommended by Koch. The increase in dose was such that the third dose was twice the first, the fourth twice the second, and so on.

Case I. Physician, aged thirty-one, sent West in 1892 by Dr. F. C. Shattuck for pulmonary tuberculosis, bad prognosis given.

Examination by Dr. Jesse Hawes, July 21, 1898. A little active trouble at left apex; about half of the left lung and two-thirds of right still good; expectoration about one ounce in twenty-four hours; tubercle bacilli fairly numerous.

On August 20th, after a month of treatment, when the individual dose had risen to one-fourth of a milligramme and the whole amount given was .85 mg., blood was noticed in the expectoration.

August 22d. Expectoration considerably increased, still a little blood.

August 23d. Slight hemorrhage, a half ounce.

August 24th. Hemorrhage, two ounces.

August 28th. Hemorrhage, four to six ounces.

September 3d. Expectoration rather more purulent; no blood.

About this time there was evident improvement in the patient's strength, appetite and spirits; weight increasing.

September 14th. Chest examined by Dr. Hawes. He reports condition decidedly improved.

A dose of 15 mg. solid substance was reached October 17th. As this produced quite a reaction, with rise of temperature and prostration, the dose was dropped to 10 mg. Doses of this size were given till December 8th, when the supply gave out, and I was advised that no more was to be had. As the strength and spirits were improving and the cough diminishing, it had been intended to go on longer with the treatment.

Case II. Miss D., aged 29, came West in September, 1895. In November, 1896, I found numerous tubercle bacilli in her expectoration. The chest signs rather indefinite.

Two days after beginning the use of the tuberculin I went over her chest. Inspiration rather harsh over left front; few sub-crepitant râles in right axilla; nothing else found. No cough for five weeks.

The tuberculin was used in this case more with the hope of killing off the bacilli that might be present than with the expectation of improving her strength or general condition. The dosage in this case was the same as in Case I, except that it was run right on up to 20 mg. and stopped. When the doses got up between one-half and one milligramme, her cough came back, but soon subsided. There was no hemorrhage. The last dose (20 mg.) gave a decided reaction; prostration, chills and vomiting followed the next day by a temperature going up to 100.5°. The temperature soon came down. The prostration lasted three or four days.

After about a month of treatment she began to feel better, as did Case I. After two months of treatment she declared she felt better than she had for four years.

The injections were always somewhat painful in both cases — at times distressingly so. After some of the injections, especially as the doses grew larger, a lump would form where the needle was introduced. Some of these would not be wholly gone in a month. There were no abscesses. In both cases the morning temperature was quite low, as a rule. A temperature of 96° F. was fairly common. The thermometer used had a Kew verification. In Case I the morning temperature was 95° on two occasions. On both these days he went on about his duties as usual.

At present the two cases are in about the same condition as at the conclusion of treatment. Case I still coughs, and his expectoration contains numerous tubercle bacilli.

It may be said in conclusion that "T. R." seemed to help these cases, though it did not do all that was hoped for.

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POST-OPERATIVE NEURASTHENIA.[1]

BY S. A. LORD, M.D., BOSTON.

The following cases, from Dr. Putnam's clinic at the Massachusetts General Hospital, seem worth reporting briefly. They illustrate the fact that very unpleasant nervous conditions can arise after justifiable operative procedures.

Case I is that of M. P., aged twenty-nine, married. She is an American and by occupation a type-writer. Four months ago she was operated upon by an expert gynecologist. He did a ventro-fixation to relieve the principal symptom, that of pain in the back, and in the left hip and thigh. Suppuration occurred and there remains a small sinus.

The above-mentioned pain has disappeared since the operation. There exists, however, besides annoying stretching and tugging sensations in the region of the scar, a whole group of extremely distressing neurasthenic manifestations.

The patient is now subject to attacks of severe dizziness, beginning with a sensation as of a blow received in the head, after which the patient falls, at other times the premonitory symptom is the feeling of a "great wave coming from the stomach and then spreading all over her."

She is troubled with nausea, with feelings of intense oppression and suffocation, and her sleep is poor. These and other less marked but still very harassing phenomena of semi-hysterical character combine to make a clinical picture, which is that of a miserable woman.

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[1] Read before the Clinical Section of the Suffolk District Medical Society, January 19, 1898.

CASE II is that of F. H., aged thirty, married. She is an American. She came to the nerve room complaining of general weakness, "dizziness and fulness" in the head and a host of other symptoms of the neurasthenic type. She is decidedly hypochondriacal, and has one or two odd ideas regarding the presumed entrance of a pin into her head and the existence of a "clot on the brain,"— these worrying opinions having close association with various peculiar and more or less exactly localized cephalic sensations of pressure and the like.

The expression of the face and the whole attitude of the patient is that of hopelessness and of unwillingness to admit that improvement in her own condition is possible.

Her troubles date from a gynecological examination two months before entrance. This apparently was made with due care — the patient was assured that nothing serious was the matter, and no especial discomfort was experienced, nevertheless, she was much frightened — so she said — both in anticipation and at the time of the examination. She had previously been told by her friends that she "might be injured." This examination was made on account of the patient's sterility. She denies, however, any especial worry because of this sterility, and will not admit that she is a nervous woman.

A liability to occasional headache is acknowledged, though; and the patient's statements incline the hearer to believe her of neuropathic tendency.

Careful questioning seems to leave no doubt that in these cases the operative procedures may be regarded as exciting causes at least.

The statement of the woman first mentioned, namely, that she far preferred the pain of the period before operation to her present state of nervous breakdown, is not needed to convince us of the reality of this suffering.

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Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 23, p. 536.)

OSTEOPLASTIC CLOSURE OF BONE CAVITIES.

OLIER [24] speaks of the great difficulty experienced in the healing of wounds and the filling in of cavities produced by the removal of diseased spongy tissues from bones, especially the long bones, and, after studying the divers phases of the question, comes to the following conclusions:

(1) Cavities in bones, whether abnormal, accidental, pathological, or following operations, fill up slowly, especially when they are deep, on account of the rigidity of their walls, which do not retract. They cannot be filled by the granulations of medullary origin which form on their walls, at least when the subjects are not young and in a plastic condition. In tuberculous cases the difficulty is always very great.

(2) In the long bones, as the tibia, after removal of the medullary substance, the repair is so tedious that it seems almost impossible to heal them. Of the short bones, the calcaneum is especially exposed to this slow repair where it has been reduced to but a thin wall.

(3) The method to employ in healing these cavities is to remove or make movable one of the walls to permit, in the first case, the periosteum to reach the opposite wall, and, in the second, to place the osseous walls in contact.

(4) When one of the bony walls is removed, the corresponding periosteum and soft tissues which cover it are pressed into the centre of the cavity and come in contact with the opposite wall. The strength of the bone is momentarily decreased by this procedure. but the formation of osseous tissue on the inner surface of the periosteum finally gives the necessary solidity. This is particularly true in cases of hypertrophy of the bone from osteomyelitis.

(5) Outside of these cases, where hypertrophy has taken place it is better not to sacrifice the bone, but to form a flap which shall, according to the case, approach or be fixed to the opposite wall by metallic sutures. As soon as the flap has been detached the cicatrization of the wound may be left to the granulations, for while they are without effect upon rigid walls, they act through the cicatricial contraction upon the movable wall. This release of one wall may be effected in many cases at the time the bone is operated upon and the cavity cleared. This precaution prevents the necessity of a secondary intervention.

(6) The lateral flap is the easiest and most generally applicable. Many forms of flaps may be required, as cases differ. One may have recourse to flap taken from other parts of the same bone or from neighboring bones, and changed by gliding or by partial torsion of the periosteal pedicle. This flap should always remain connected with the bone from which it was removed by periosteum and the soft parts, and as well nourished as possible to lessen the chances of necrosis of the flap. Where the bone is superficial the flap should be, as far as possible, osteocutaneous.

(7) Bone-grafts, homoplastic and heteroplastic, may be employed, but only exceptionally, where the means to repair the loss of bone substance cannot be found in the bone itself or any of the adjacent bones.

(8) In certain cases where the cavities are intraosseous, with very thin walls in an atonic condition, it is best to proceed immediately to a resection of their entire thickness or to the total ablation of the bone, if it is a bone which is of but secondary importance to the solidity of the part.

OSTEOPLASTIC SPLITTING OF BONES.

Cramer [25] states that Bardenheuer has further developed the method reported by him in 1894 of a partial section in the long axis of various bones for the obliteration of defects. In his new method the bones of the metatarsus were split lengthwise to fill up the gap in an adjoining metatarsal. A good result was obtained in five cases. The method was extended still further on the metacarpus. In four cases a metacarpal bone having been split lengthwise, one-half was bent over, overcoming the deformity resulting from the extirpation of a neighboring metacarpus. In these cases, also, the results were very satisfactory. Section of the bone is easily performed with a fine sharp chisel, the bone being left intact at one of the joint surfaces. The displaced half is made somewhat thicker than the remaining one. Necrosis of the dislocated bony fragment was never observed.

In the case of deformity following the loss of the second metatarsal and of the proximal two-thirds of the first metatarsal. the third metatarsal bone with the adjoining external cuneiform was bodily separated as far as the region of the metatarso-phalangeal joint, at which point the metatarsal remained attached to the neighboring soft parts. Both bones were then dislocated, bringing the external cuneiform in front of the middle cuneiform.

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[24] Rev. de Chir., 1897, No. 4; American Journal of the Medical Sciences, August, 1897, p. 229.

[25] Verhandlungen der deutschen Gesselschaft für Chirurgie, XXV Congress, 1896; Annals of Surgery, May, 1897, page 665.

The remaining stump of the first metatarsal was refreshed, and fastened to the dislocated third metatarsal. Again the result was perfectly satisfactory. The principle was further developed in cases where the proximal phalanx together with its metatarsal or metacarpal bone was wanting, by splitting the corresponding adjoining bones and bodily transposing them. The process was similarly employed in defects of the radius.

RADICAL CURE OF PERFORATING ULCER OF THE EXTREMITY.

Chipault[26] reports seven attempts to cure perforating ulcer of the foot by stretching of the plantar nerves, with only one failure. All of the patients were laborers, and the ulcerations were deep, and in some instances associated with osseous lesions. All were in bad hygienic condition. In every case the nerve was stretched either under the internal malleolus, or external malleolus or at the border of the Achilles tendon; in a word, at a moderate distance from the trophic ulceration. At the same time that the nerve was stretched, the ulcer was thoroughly curetted, necrotic bone removed, and the thickened edges of the ulcer excised, thus transforming a round infected ulceration into an oval wound, whose edges were sutured together. In this manner the most obstinate cases may be successfully treated.

TEMPORARY INTRA-ABDOMINAL COMPRESSION OF THE AORTA ABOVE ITS BIFURCATION IN OPERATIONS FOR PELVIC AND ABDOMINAL TUMORS.

In connection with the details of a successful operation for double malignant ovarian tumors, with many adhesions, Lennander[27] describes a method of digital intra-abdominal compression of the aorta which he employed with very gratifying results. The deductions which he draws from this case are the following:

(1) A wide compression on the aorta above its bifurcation makes the entire true pelvis practically bloodless.

(2) If the common iliac artery is compressed on the vertebræ or the os sacrum above the sacro-iliac synchondrosis, the half of the pelvis is rendered nearly bloodless.

(3) The compression was employed for three-quarters of an hour in this instance, with no serious effects; it should not be necessary longer.

(4) When the compression ceases, a rapid lowering of the heart's action, due to vasomotor dilatation, should be guarded against by a normal salt solution, intravenous injection.

(5) In resections of the spleen or the extirpation of a fixed spleen, the arteria linealis at the upper end of the spleen may be compressed against the vertebræ.

(6) In severe and difficult operations upon the kidney, where the peritoneal cavity is necessarily opened, the compression of the renal vessels against the vertebræ will be of service.

The author adds a foot-note of the fact, just discovered by him, that Senn had previously suggested intra-abdominal compression of the aorta in military surgery.

DIRECT INTRA-ABDOMINAL FINGER-COMPRESSION OF THE COMMON ILIAC ARTERY DURING AMPUTATION AT THE HIP-JOINT.

McBurney[28] in an article on this subject states that loss of blood during the performance of amputation at the hip-joint is of especial importance because almost all of the cases in whom this operation is indicated belong to one or two classes: (1) those suffering from extensive, often long-continued, disease, and who are therefore feeble and anemic; (2) traumatic cases, weakened by the shock of the traumatism, and usually anemic from considerable blood loss. Therefore, in amputation at the hip-joint every precaution should be taken against hemorrhage and against sepsis.

He states that in the last three of his cases he has adopted a method which is simple and effectual, and all three patients have recovered.

First, as much blood as could be safely returned to the body from the limb to be amputated, by means of position or elastic bandage, was so returned. Then an incision was made through the abdominal wall about one and a half inches internal to the anterior spine of the ilium.

In the last two cases this incision was made by separating the aponeurotic and muscular fibres according to the plan suggested by the author in operating for removal of the appendix in the interval between attacks. This, of course, eliminates the possibility of subsequent hernia. Through this incision an assistant passed his index-finger and readily reached and compressed the common iliac artery.

Entire absence of blood-current beyond the point of compression was readily maintained throughout the amputation which followed. The operative field was entirely free from bandage or appliance of any kind, the opportunity to maintain complete asepsis was therefore free from complication, and the amputation was made without other loss of blood than that which took place from the vessels of the limb below the point of amputation. The author deems the method commendable on account of its simplicity, its certainty, its aseptic character, and because it can be applied to cases which require that the deeper tissues should be severed at an unusually high level.

THE OPERATIVE TREATMENT OF IRREDUCIBLE SUBCUTANEOUS FRACTURES.

Ransohoff[29] in an article on this subject believes that in certain cases an interference before union had resulted would be preferable to the certainty of deformity, and reports seven cases which have come under his observation in which the fracture was exposed and directly treated.

The author states that his experience or what he has gleaned from literature does not warrant him in coming to conclusions that are final. Nevertheless, he believes that it would be justifiable to submit in a tentative way the following postulates:

(1) The conversion of a simple fracture is justifiable when other means to secure the best end results fail.

(2) In fractures of the diaphysis of the tibia,

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[26] La Presse Méd., May 29, 1897; Medical News, August 14, 1897, p. 209.

[27] Cent. f. Gynak., No. 17, 1897; American Journal of the Medical Sciences, February, 1898, p. 216.

[28] Annals of Surgery, May, 1897, p. 610.

[29] American Journal of the Medical Sciences, October, 1897, p. 417.

femur, humerus, and clavicle in which insurmountable longitudinal displacement or axial rotation has taken place, immediate operation or mediate operation before definite union has occurred is indicated.

(3) In epiphyseal separations, when reduction cannot be otherwise effected, an early operation is justified.

(4) Fractures complicated with dislocations irreducible by other methods warrant operative interference.

(5) The involvement of a joint, except probably in the case of knee and hip, do not, *per se*, militate against operation if this is otherwise indicated.

(6) If extensive comminution is present, as in compression or crushed fracture, operation is contraindicated.

(7) Special precautions against infection must be taken, in connection with which should be borne in mind the dangers of too firmly closing a wound and the advantage of temporary tamponade and secondary suture.

(8) Reckless and indiscriminate resort to the operative relief of deformity in recent simple fractures is to be condemned, since there would be few fields of surgery, in the event of an unsuccessful intervention, in which the contrast could be greater between the good intended and the harm done.

THE TREATMENT OF FRACTURE OF THE CLAVICLE BY INCISION AND SUTURE.

Spencer,[30] in an article on this subject, gives an account of an operation performed by Dr. Hearn (Dr. Spencer assisting) at a clinic in the Jefferson Medical College Hospital in the summer of 1896. An incision, three inches in length, was carried directly to the bone and in the direction of its long axis. By exposing the part our attention was first directed to a piece of thin bone, which had been broken off from the posterior inferior surface of the inner fragment and was free in the wound. It was shaped like a right-angled triangle; the hypothenuse measured one-half inch; the base and perpendicular each measured about three-eighths of an inch; in thickness it measured one-eighth of an inch. This piece was removed. Another fragment of the bone, which was a little larger than the one just spoken of, was found to be separated from the posterior superior surface of the outer fragment, though attached to it by the periosteum. This piece was replaced and held in position by throwing a ligature of kangarootendon around the outer fragment, including the detached piece of bone, and tying. In this case, the subclavius muscle was found to be well up between the fragments. The inner end of the outer fragment was long, ragged and very oblique, and was caught in the few remaining fibres of the subclavius muscle, which fortunately kept the sharp end of the bone from coming in contact with the subclavian and axillary vessels. Fresh lacerations of these fibres showed that the fragment was gradually working its way through, and in a short time either direct puncture, pressure or ulceration of one of the vessels would have ensued. This fragment was brought up and the ragged point cut away, after which both fragments were brought together and the periosteum was sutured with fine catgut. The skin-wound was closed with Halsted's subcuticular suture and the arm was dressed in the Velpeau position, with a light plaster-of-Paris dressing. His highest temperature was 99° F., which was on the night of the operation. It dropped to normal the next day and remained normal. In three weeks there was good bony union; no pain or deformity.

THE DISINFECTION OF HANDS.

This subject, which is of such great importance in clinical surgery, has been carefully studied by Weir[31] whose studies lead him to the following conclusions:

(1) That the solutions of corrosive sublimate are unreliable.

(2) That such disinfection is far best applied, and in the order named, by the use of nascent chlorine, alcohol, or potassium permanganate.

(3) That chlorine is satisfactorily evolved by the conjoined use of moistened chemical chlorinated lime and crystalized sodium carbonate.

(4) That of these three procedures the chlorine treatment is least hurtful to the hands, alcohol the most trying.

The author has devised a simple, easy and inexpensive yet efficient method of obtaining the sterilization by nascent chlorine.

After the usual scrubbing with soap and water, and the use of green soap, and cleaning the periungual spaces, one or more large crystals of carbonate of sodium (washing soda) are taken in one hand and covered with about a tablespoonful of bleaching powder (chlorinated lime), and enough water is added to make a thin paste, which at first feels warm, and from which fresh chlorine gas comes. This is rubbed for two or three minutes over the hands, nails and forearms until a creamy paste is formed or until the sodic crystals impart a cool sensation or until the rough grains of bleaching powder have mostly disappeared, when the hands are washed in sterile water.

A NEW INSTRUMENT FOR TREPHINING.

Dahlgren[32] describes an ingenious instrument which he has devised, which has the essentials of simplicity and efficiency combined. After a small trephine opening has been made and the dura mater pushed inward with a probe, it cuts a linear channel through the skull in any direction the operator may desire. It is especially adapted to the formation of the skin-periosteum bone-flap employed in Wagner's method of cranial resection.

The instrument consists of a bone forceps whose jaws do not cross, but separate beyond the point of articulation. One arm carries a sharp hook which articulates at the extremity of the jaw and passes through between the two cutting prongs of the other jaw. The bone is grasped and cut through by the hook while pressed against the outer surface of the other jaw. By means of a set screw the instrument can be accurately adjusted to the thickness of the bone to be cut through.

SILVER WIRE AS A SUTURE IN SURGERY.

Dr. B. Crede, attending surgeon to the Carola Hospital of Dresden, in an address delivered before the National Surgical Society of Germany, at its twenty-fifth annual convention, held at Berlin on May 28, 1896, discussed silver and its salts, the citrate and lactate, which he termed the itrol and actol, and pronounced them the most powerful of all the surgical antiseptics yet discovered.[33] It appears that his interest in silver as an antiseptic grew out of the observations of his father, the elder Crede, on the value of the nitrate of silver in the treatment of inflammatory affections of the eyelids of infants. Nitrate of silver was not a success as a surgical dressing, however, on account of its chemical instability and its corrosive action on mucous membranes. While visiting the Johns Hopkins Hospital, in Baltimore, Dr. Crede was impressed with the use of silver foil as employed by Dr. Halsted, in affording an antiseptic covering for small or closed wounds. His next experiment therefore, was made with metallic silver, using it as an antiseptic dressing for wounds. When applied to a sterile wound, he found that it remained unchanged, was non-irritating, and formed a thoroughly aseptic dressing. On the other hand, when applied to an infected wound, the products of bacterial life oxidized the surface of the silver, and, entering into combination with the argentic oxide, formed argentic albuminates, which had powerful antiseptic properties. Careful analysis developed the fact that it was lactic acid which was developed in the microbic secretions, and that when this combined with the silver oxide there was developed a lactate of silver, and in this resided the antiseptic properties.

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[30] American Journal of Medical Sciences, April, 1897, p. 445.

[31] Medical Record, April 3, 1897; Americal Journal of the Medical Sciences, September, 1897, p 350.

[32] Cent. f Chir., 1896, No. 10; American Journal of the Medical Sciences, August, 1897, p 233

[33] Medical News, May 29, 1897, p. 706.

In this discovery lies the explanation of the value of silver wire as a suture. In aseptic, sterile wounds it is non-irritating and remains unchanged. In infected wounds it supplies in itself the base of a powerful antiseptic, combining with lactic acid, and forming thus in the tissues the lactate of silver.

A CHEAP AND SERVICEABLE SURGICAL SUTURE.

Gubaroff[84] describes a new method for preparing ordinary linen thread for surgical use in such a manner that it does not kink, twist or knot, and is readily rendered aseptic.

The thread is deprived of its fat by boiling in caustic soda, then washed in water and sterilized, and laid for a few days in alcohol. It is then placed in a five-per-cent. celloidin solution (Schering), with equal parts of alcohol and ether; from this solution it is laid out and allowed to dry while stretched. The threads contract and are shining, do not absorb or twist, and may be readily threaded. The sutures may be sterilized, but cannot be kept in alcohol, though they may be placed in bichloride or carbolic solutions. Sublimate (1 to 1,000) may be added to the celloidin solution, making it antiseptic.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. THE SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

Regular meeting, Wednesday, January 26, 1898, Dr. Twombly in the chair.

Dr. Wm. M. Conant read a paper on

TWO TWISTED PEDICLED OVARIAN CYSTS, WITH COMPLICATIONS.

Dr. Marcy: I came in too late to hear the first of the paper but the subject is always an interesting one. I am reminded since listening, of two cases of twisted pedicle worth putting on record as a contribution to this subject.

The first, a woman of perhaps sixty-five, with a very large ovarian cystoma, for which she refused operation. She had been several times to see me, declared she was perfectly comfortable and well, and would not have anything done. Later on the tumor began to shrink, and she thought the abdomen was distinctly smaller. Intense pain, with chills, suddenly supervened. The fourth day I saw her in New Hampshire. She was very ill, had a high temperature and was looking extremely bad. The abdomen was opened. Already plastic lymph had been thrown out in certain parts about a thoroughly necrosed cyst, and the line of demarkation was clear close to the uterus. The pedicle was sutured and the tumor removed. Its weight was about thirty pounds. She made an easy recovery and continues well.

The second case was interesting because of the clinical history. Age about thirty-five, married, in good general health. For some time had noticed a rapidly enlarging abdomen. The patient went to the Massachusetts Hospital and was examined at the clinic. She said she was examined by at least a dozen people. The abdomen presented a movable tumor, symmetrical, about the size of pregnancy at term. On the way home in the train she was seized with very severe pain, went to bed, the next day had a chill, and the fourth day I saw her and operated. She was then in extremely bad condition — nausea, vomiting, high fever, small rapid pulse, etc. A tumor of fifteen pounds in weight was necrotic, with a distinct line of demarkation. In this case, as in the first, it was a double twist. She believed the rotation was caused by the examination at the clinic, as she was well except the discomfort of her condition until she went to the hospital.

I believe twists of the ovarian pedicle are not seen as often as in earlier years. Cases such as the last described by Dr. Conant are rare. Twists of pedicled small cystoma are not likely to occur. In the older days my friend Dr. Kimball met with twisted pedicles oftener than at present, because the tumors were always left until the conditions were extreme, and then there were greater chances for rotation. I have never seen a cyst so small as the last one reported where there was a twist of the pedicle.

Dr. Cumston: I had one case when I was assistant almost exactly like the first case reported by Dr. Conant, except that the patient was not pregnant. She was sent to the hospital by a country physician, and the diagnosis was probable intestinal obstruction. I cannot detail this case as I have forgotten much in the patient's history; but I do remember that it was referred to in a clinical lecture of mine which appeared in the "International Clinics." She stayed in the hospital several days under observation. On Sunday afternoon I was called by the nurse to see this patient, and found her in a state of collapse. On making an incision the first thing we saw in the wound we took to be, as did Dr. Conant, a large distended gangrenous gut and regretted we had delayed operating. When we rolled it out, however, it was an ovarian cyst as large as a child's head at term. It was black. We have seen one other case. A patient came to the dispensary who had been seen at the City Hospital some months previously, where the diagnosis of ovarian cyst had been made. It was right-sided, and she came to the dispensary with fever, pain in the iliac fossa on the right side. On palpation we found a mass which felt rather pasty, and I made the diagnosis of possible appendicitis; she had colicky pains and diarrhea. We operated next day. It was the beginning of torsion; it was about half-way round, not a full twist.

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[84] Cent. f. Chir., October 31, 1896; American Journal of the Medical Sciences, February, 1898, p. 225.

The diagnosis of torsion of the pedicle in ovarian cysts is certainly very obscure in a great many cases. A large number have been reported by writers who really see a very great number of patients in the course of a month. We find that Labbé, of Paris, has indicated a diagnostic sign which possibly may be of some value to remember; namely, in two cases Labbé found an intense systolic murmur on auscultation over the pedicle and there was an undulation *en masse* in the tumor which corresponded to the influx of blood from the general circulation. Another point occurs to me, and that is the malignant degeneration of these cysts. We have seen several cases of malignant degeneration of ovarian cysts in which the diagnosis of chronic twisted pedicle had been made, and Olshausen, of Berlin, and many other prominent men have made it on several occasions and we think it is well to bear the question of malignant degeneration in mind when considering the question of chronic torsion of the pedicle, for in the cases referred to by Dr. Conant, he was dealing with the acute type, and consequently cachexia was not present.

Dr. Cobb: It was my privilege to see Dr. Conant's second case at his first visit and to assist him at the operation. I think most of us are led to believe that torsion of the pedicle in ovarian cyst causes very acute symptoms, that peritonitis follows very rapidly; the pain is acute and sudden; vomiting and all the symptoms of shock are present. I do not think that any one would have been justified in suspecting twist of the pedicle in the second case. It was for all the world a classical case of pelvic abscess from some cause. The woman had been sick for four or five weeks before she was operated, and had had no sudden or very severe pain attended with collapse and shock and vomiting; on the other hand, there was a history of possible septic infection of the uterus or irregular menstruation. The examination pointed to pyosalpinx or appendicitis. It was a very instructive case to me for those reasons.

Dr. C. G. Cumston read some

REMARKS ON THE PATHOLOGY OF EPITHELIOMA OF THE UTERUS, WITH REFERENCE TO OPERATIVE INTERFERENCE.[1]

Dr. Marcy: I am sure in the main I quite agree with the position the reader has taken. In the class of cases where the uterus is freely movable, uninvolved except the cervical portion, vaginal hysterectomy is an easy operation; but unfortunately that is the class of cases that comes only to the observer, as a rule, who has his own clinic, that is to say, patients who come to him as the family physician. Unfortunately in the clinics of a large city the great majority of cases are too far advanced to give the best results. The rank and file of the profession are trained to recognize the disease earlier than formerly, but cancer of the uterus is in its earlier stages often difficult to determine, and every effort should be made to establish an early diagnosis.

There is another class of conditions where we may discuss the advantages between the vaginal and abdominal route. In illustration is a case in my hospital at this moment. I removed the uterus about three weeks since because of a comparatively limited disease of the cervix. One of the most difficult cases I have operated on by the vaginal route; and why? An old pelvic inflammation which bound the uterus firmly. It would have been less difficult to attack it from the other side. I saw a patient yesterday, not quite well, where the abdominal route was undoubtedly the only one any one would advise. There was a cyst in the right broad ligament, and a small fibroid tumor in the fundus, with a pronounced cervical epithelioma, which fortunately could be removed and leave a healthy border of tissues about it.

The following is a case of the class of proliferating papillomatous type of growth, which is worth putting on record. A patient of twenty-eight, married several years, in excellent general condition, never pregnant, brought by her physician two years ago. The vaginal vault was filled with the growth. Fortunately the vaginal mucous membrane was not invaded. We removed the uterus, and the operation was not very difficult. Ten days later she had intestinal obstruction. I opened the abdomen at midnight, and freed a loop of small intestine adherent in the pelvis. She made an easy convalescence. One year later I dissected out a recurrent mass in the cicatrix of the vaginal vault — the first of this sort I have seen that did not return quickly after its removal. Six weeks ago she was again sent to me with intestinal obstruction. We removed five inches of the large intestine just above the sigmoid flexure, joined with a Murphy button and she was doing well until the end of the third day, when acute intestinal obstruction supervened, and again I opened the abdomen at midnight and freed an adherent loop of small intestine in the pelvis; but unfortunately, forty-eight hours after, death followed. The condition of the growth in the intestine rather surprised me. The growth had invaded the muscular coat of the intestine for about two inches in length and was covered by healthy peritoneum. The lumen was the size of the little finger. The autopsy showed that there was no return of the disease in the vaginal vault, and that the pelvic glands were not involved.

Hysterectomy for the removal of malignant disease is a very large subject. I think it must be left in a general way to the judgment of the competent operator as to the route he will take. In the majority of instances, if he sees his patient early, epithelioma of the cervix should be removed by vaginal hysterectomy rather than by the abdominal route — not because it is better surgery; because blind surgery is, as a rule, bad surgery — but because usually it can be pretty safely done, and the recovery is so much more satisfactory than when the abdomen has been opened. After vaginal hysterectomy of the ordinary type you may be sure you have a small risk of death following, whereas in the abdominal route, although the cases often seem as if they were more easily cared for and the result more satisfactory, the danger is certainly greater.

Dr. Cumston: I must take issue with Dr. Marcy on the question of vaginal hysterectomy. I cannot allow it to be said that vaginal hysterectomy is a blind operation. Personally I can see just as well when I am doing a vaginal operation by the French method with the French instruments as I can when I am doing an abdominal hysterectomy, and I feel sure that with the proper valves, with skilled assistants —

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[1] See page 581 of the Journal.

like those no doubt, Dr. Marcy has — he would find that vaginal hysterectomy was as open an operation as the abdominal route. I feel, that as I am doing both abdominal and vaginal operations, although few in number, I am not too narrow-minded in the opinions I uphold.

Secondly, my great objection to the abdominal route in removing an epitheliomatous uterus is the great ease with which we inoculate the peritoneal cavity with the growth. I have seen one case, and I think two, where the wound became the seat of carcinoma, the abdominal incision became the seat of carcinoma; and with all the care that an operator may exercise in removing that cancerous mass through the abdominal opening, he is very apt to run a great risk from either inoculating the peritoneal cavity, which is almost inevitable, or else the incision in the skin. I wish to agree with Dr. Marcy when it comes to removing a carcinomatous uterus with complications in the adnexa. The operation of choice is the abdominal route; we could not do otherwise; it would make a vaginal hysterectomy altogether too complicated to remove the diseased organs in that way. I do think, as Dr. Marcy has said, that the general practitioner is getting to recognize malignant growths of the uterus earlier than I suppose they did formerly, but it, nevertheless, remains a very sad fact that a large number of cases still comes to the surgeon that are past the period when we can positively say a radical operation is going to save them.

Dr. Twombly: I think that we feel, as gynecologists, that if we can substitute vaginal hysterectomy for an abdominal operation, that cases will come to us, and we can tell them that the operation is not as severe as it would be if they had to have their abdomen opened. They will oftentimes submit to an operation by the vaginal route, because there is no scar and no disfigurement of the person, when they would not submit to the abdominal operation. This fact must be taken into consideration.

Dr. Cumston: I am glad you brought that question up. Women do not like to have scars on their abdomen; that was one of the conditions brought out when vaginal hysterectomy by the French method was being discussed here some two years ago, and it was laughed at in this very room, sir; and I am very certain that there are a large number that would consent to operation when you can assure them that no abdominal scar will be seen and when they know they are not obliged to have their abdomen opened.

Dr. Marcy: When there is little hope of cure of the disease, the surgeon prolongs life and adds greatly to the comfort of the patient by using the curette freely and thoroughly cauterizing the cavity. Dr. Sims used escharotics freely, especially chloride of zinc. I prefer to pack the cavity with a thin layer of wet cotton and to this apply the cautery. By it steam is freely generated, and I think the heat penetrates the parts more deeply and with greater safety.

The War affects Dispensary Practice. — Dispensary practice in New York has been affected by the war, according to the *Medical Record*. In a down-town district a falling off in attendance at one of the dispensaries was noted for a few days, which could not be accounted for until it was found there was a "run" on a neighboring bank and the patients were busy drawing out their deposits.

AMERICAN MEDICAL ASSOCIATION.

Forty-ninth Annual Meeting, Denver, Col., June 7–10, 1898.

FIRST DAY. — GENERAL SESSION.

The Association met in Broadway Theatre on its forty-ninth session; and in the absence of the President, **Surgeon-General Dr. Geo. M. Sternberg**, of Washington, D. C., the meeting was called to order by the First Vice-President, **Dr. Joseph M. Mathews**, of Louisville, Ky.

Prayer was offered by **Rev. W. F. McDowell**.

Eloquent addresses of welcome were delivered by **Dr. J. W. Graham**, of Denver, on behalf of the local profession; on behalf of the State, by **Governor Alva Adams**, and on behalf of Denver and its citizens, by **Mayor W. S. McMurray**.

ADDRESS OF THE PRESIDENT.

This was read by **Colonel A. W. Woodhull**, of Denver, in the absence of the author.

At the outset Dr. Sternberg expressed his high appreciation of the honor conferred upon him and his thanks for the same.

He congratulated the Association upon the favorable prospects for a pleasant and profitable meeting in the beautiful and hospitable city of Denver.

The Association, as the representative body of American physicians, would no doubt continue to increase in membership and in influence. The day was perhaps not far distant when no reputable physician would be willing to confess that he did not belong to the American Medical Association, and when no progressive physician could afford to do without the *Journal*. And in order that every physician of good professional standing may enjoy the privileges of membership, he thought it desirable that permanent members should be elected, upon application, without reference to their membership in State, county or district medical societies, when they present satisfactory evidence that they are graduates in medicine, of reputable standing in the profession, and are willing to subscribe to the Code of Ethics of the American Medical Association. In other words, he would not exclude a reputable physician from membership because the State, county or district medical society to which he belonged declined to adopt the Code of Ethics. A liberal and progressive spirit would do much towards promoting the growth and influence of the Association. The medical profession in this country had suffered more in his opinion from the ignorance of some of its members who hold diplomas from regular schools of medicine than from the attacks of those who were called irregulars or quacks. Scientific medicine, being founded upon demonstrable truths, must in the end maintain itself and secure the confidence of the people.

Positive denials of the value of the well-established achievements of scientific medicine were often made, unfortunately too often by men who were authorized to attach the letters "M.D." to their signatures. This led to the frequent repetition of the old question, "Who shall decide when doctors disagree?" No matter how well a fact may be established by repeated experiments or by the common experience of the profession, some doctor may be found who, through ignorance or that obliquity of mental vision which characterizes the crank, will deny its truth. Then, there are doctors who deny the value of vaccination, others who fail to recognize any value in results obtained by experiments on the lower animals, others who deny the etiological rôle of well-known pathogenic bacteria, etc. As a result, the anti-vaccination and anti-vivisection societies were able to fortify their position by quoting the opinions of medical men of more or less repute. But opinions are of no value when opposed to evidences, and it seems to Dr. Sternberg that those familiar with the evidence would do well to give to the public concise and comprehensible statements, suitable for publication in newspapers and popular magazines, setting forth the facts and the evidence upon which these facts are accepted by well-informed physicians. But in doing so great care should be taken not to make any assertions that are not based upon reliable data.

As was to have been expected, the x-ray has already been made a source of revenue by more than one pseudo-scientist. The following account of the *modus operandi* of its supposed therapeutic action has recently been published in the newspapers:

"After the Crookes tube is excited by the coil the magnetic lines of force are projected down in the same manner as they pass off from a magnet, and traversing the intervening spaces, pass through the body down to the floor, and back to the coil and tube again, completing the circuit.

"The x-ray is electrostatic in character and of a very high potential. With every discharge from the Crookes tube oxygen is liberated in the body, as well as the surrounding atmosphere, which, combining with nascent oxygen, forms ozone. It is due to the electrolysis produced in the body that we are able to destroy the bacilli in contagious disease, ozone being the most powerful germicide known."

In commenting upon the above, Dr. Sternberg first remarked that he did not fully understand why the magnetic lines of force were reflected back by the floor, completing the circuit. Inasmuch as the x-rays pass through wood, this mysterious action of the floor appears to call for some further explanation. He passed by the ingenious explanation of the formation of ozone, as a result of the action of the x-ray, and called attention to the mistaken statement that ozone "is the most powerful germicide known."

The experiments of Frænkel show that the aërobic bacteria grow abundantly in the presence of pure oxygen, and some species even more so than in ordinary air. It was formerly supposed that ozone would prove to be a most valuable agent for disinfecting purposes, but recent experiments show that it is not so active a germicide as was anticipated, and that from a practical point of view it has comparatively little value.

Lukaschewitsch found that one gramme in a space of a cubic metre failed to kill anthrax spores in twenty-four hours. The cholera sporule in a moist state was killed in this time by the same amount, but fifteen hours' exposure failed to destroy it. Ozone for these experiments was developed by means of electricity.

Wyssokowicz found that the presence of ozone in a culture medium restrained the development of the anthrax bacillus, the bacillus of typhoid fever, and others tested, but concludes that this is rather due to the oxidation of bases contained in the nutrient medium than to direct action upon the pathogenic bacteria.

The conclusions reached by Nissen, from his own experiments and a careful consideration of those previously made by others, is that ozone is of no practical value as a germicide in therapeutics or disinfection.

Dr. Sternberg said that unfortunately lack of information relating to the definite results of scientific investigations was not confined to the non-medical members of the community.

With the progress of scientific medicine we have improved methods of teaching, and it is now generally recognized that reading medical books and listening to lectures are not a sufficient preparation for the practice of medicine, any more than the reading of books on navigation would be for the responsible position of captain of an ocean steamer. It is for this reason that we insist upon the study of anatomy in the dissecting room, the teaching of methods of diagnosis and treatment at the bedside, and of chemistry, physiology and pathology in the laboratory. The painstaking work and attention to details required of students engaged in chemical, physiological, bacteriological or histological studies, and the failure in their attempts to repeat an experiment or demonstration if through haste or carelessness they neglect any step in the necessary technical process, constitute an invaluable lesson. Indeed, the scientific medicine of the present day can only be taught by such methods; and the scientific physician of the future must make his way to fame and fortune by travelling this somewhat difficult and time-consuming road.

Reference was made to Pasteur's treatment of hydrophobia. This, in his opinion, was one of the great and well-established achievements of scientific medicine. Scientific medicine must be founded upon an exact knowledge of the structure and functions of the human body in a healthy condition and of the changes in structure and function which result from various diseased processes; of the causes, natural history and regional distribution of the diseases which afflict mankind and the lower animals; of the toxic action of various substances from the animal and vegetable kingdoms, and of the use of these and of other non-toxic substances, physical agents, etc., in the treatment of disease and of the prevention of disease by disinfection, quarantine, protective inoculations, etc.

Dr. Sternberg mentioned the investigations of Löffler and Frosch, published in a recent number of the *Centralblatt f. Bakteriologie*, relative to the etiology of foot and mouth disease of cattle, and cited briefly the results obtained by these investigators.

Recently several additions had been made to the list of specific therapeutic agents, and there was good reason to believe that further discoveries in this direction would be made as the result of investigations now being conducted in pathological laboratories in various parts of the world. Among the most important recent discoveries in this department of scientific medicine, he mentioned the use of thyroid extract for the cure of myxedema and the antitoxin of diphtheria. The discovery of the diphtheria antitoxin promised to be as important for therapeutics as the discovery of the anthrax bacillus was for etiology, and will no doubt henceforth be regarded as one of the most notable achievements of the century. While the practical results of this discovery had been notably in the case of diphtheria, some success had been attained in the specific treatment of tetanus, streptococcus infection, pneumonia and even in tuberculosis.

A recent discovery of considerable importance from several points of view was the so-called Widal reaction.

The curative action of thyroid extract in myxedema was well established, and some success appears to have been attained in the treatment of Addison's disease by an extract from the suprarenal bodies. The active substance in the thyroid has been called iodothyrin. According to Professor Chittenden, this substance is a "non-proteid cleavage product of a more complex body, naturally present in the gland and characterized by containing both iodine and phosphorus." He considers it pretty thoroughly established that iodothyrin "possesses all of the peculiarities associated with thyroid therapy."

The speaker next directed attention to prophylaxis, saying that here the progress of medical science had been even more prolific in practical results. Where thousands had been saved by the timely administration of suitable medicines, or by a skilfully performed operation on the part of the surgeon, tens of thousands had been saved by preventive medicine. Preventive medicine was to-day established upon a strictly scientific foundation.

The mortality from tuberculosis was constantly diminishing in our large cities, and the complete destruction of the infectious sputa of those suffering from pulmonary tuberculosis would no doubt go a long way towards the extermination of this fatal disease.

Finally, there was no room for creeds and pathies in medicine, no more than astronomy, geology or botany. Every man was entitled to his own opinions upon any settled problem; but if he entertained an opinion in conflict with ascertained facts, he simply showed his ignorance. There was no restriction placed upon any physician who graduates from a regular school as to the mode of treatment he should pursue in a given case. But if his patient dies of diphtheria because of his failure to have administered the proper remedy, or if he recklessly infects a wound with dirty fingers or instruments, or transfers pathogenic streptococci from a case of phlegmonous erysipelas to the interior of the uterus of a puerperal woman, it would appear that the courts should have something to say as to his fitness to practise medicine. There was, however, nothing in the Code of Ethics which should prevent him from associating with reputable practitioners of medicine; but no matter where or when he obtained his medical degree, he could scarcely be said to belong to the modern school of scientific medicine. We must not fail to recognize, however, that the progress of knowledge has been so rapid, that it is impossible for a busy practitioner to keep pace with it, and that even the requirement now generally adopted by our leading medical schools, for a four years' course of study, is inadequate for the attainment of such a degree of professional knowledge and practical skill in diagnosis and therapeutics as is desirable for one who intends to practise scientific medicine.

Secretary Atkinson was instructed to telegraph the thanks of the Association to Dr. Sternberg for his instructive and able address.

REPORT OF RUSH MONUMENT FUND.

This was read by Dr. A. L. GIHON. Of the amount pledged the last year by various State Societies at the Philadelphia meeting, only $162 has been paid during the past twelve months. Colorado announced that it had $2,000 to add to the fund; the New York State Medical Association $2,000, and the Trustees of the Medical Society of the State of Pennsylvania, to whom was referred the report of Rush Monument Committee, recommended to make good the pledge made at Philadelphia, that the sum of $2,000 be appropriated to the fund, and that the amount be held in trust by the Board of Trustees of this Society until a contract for the erection of said monument is accepted. When these sums shall have been paid the fund would amount to $10,424.44, and there were still over forty States and Territories to be heard from. The committee nominated for the position of Treasurer Dr. Holton, of Vermont. The report closed with a resolution asking that necessary travelling expenses incurred by the treasurer of the Rush Monument Committee, and those of the chairman or secretary of the Committee, be paid by the treasurer of the Association.

After the reading of the report, Dr. Gordon, of Maine, said that the Maine Medical Association had appropriated $100 toward the fund; Dr. Porter, of Indiana, had secured $500 from the Indiana State Medical Society; Dr. Cole, of California, for that State, $110; after which the report of the committee was accepted.

REPORT OF TREASURER.

By DR. HENRY P. NEWMAN, of Chicago. He congratulated the Association upon its constantly increasing growth and prosperity. The year which closed January 1, 1898, added 1,500 new members, and during the same time the Association had dropped for non-payment of dues only 75 members. Receipts during the time while he had had the honor of being treasurer had increased from $12,695.58, in 1894, to $32,200, in 1897. Balance on hand, January 1, 1898, was $14,092.85, with a sinking fund of $3,000.

Report was accepted.

REPORT OF SECRETARY.

This was read by Dr. Atkinson, of Philadelphia. He stated that, in accordance with a resolution adopted at the last meeting, he issued a circular letter to each State and Territorial medical society, notifying them of action taken relative to funds for the Rush Monument, and the desire to raise a fund of $100,000 for that purpose. Replies were received from several, that a special committee had been appointed to take charge of the matter, and it was expected that such committee would report at this meeting.

In accordance with the By-Laws, the Secretary notified all in arrears for three years, and in many instances the arrears were paid.

On motion, report was accepted.

(To be continued.)

A BONE-SETTING STORY. — A story of bone-setting is that of the Scotch laddie, Jock by name, who, after being carried by his mother, as an unwilling patient, to the bone man to get his leg set, was asked if the manipulation had hurt him. "No," said Jock, "it dinna hurt me." — "I told you it wadna be painful," said his mother. — "Ah," replied Jock, "nae wonder. You see, mither, I just let him fumble wi' tha sound leg!" — *Medical Press and Circular.*

Recent Literature.

The Diseases and Injuries of the Conjunctiva, especially the So-called "Granulated Lids." By John H. Thompson, M.D. Pp. 216. Kansas City: Hudson-Kimberly Publishing Co. 1897.

This little book deals with a subject which has been equally well presented in many of the special text-books of to-day. The aim has evidently been to divest the text as much as possible of technical terms and to so describe the different pathological processes of this membrane which "are not understood by the majority of physicians" in such simple language that they may "be prepared for every patient." The various methods of treatment recommended are those in general use, and if at all complicated are gone into with great minuteness. The expression "Granulated Lids" might better have been omitted from the title-page.

W. D. H.

Lectures on the Malarial Fevers. By William Sydney Thayer, M.D., Associate Professor of Medicine, Johns Hopkins University. New York: D. Appleton & Co. 1897.

Those already acquainted with Dr. Thayer's previously published work on malarial fever, will welcome the appearance of this volume, the best treatise on the subject with which we are acquainted, and those who do not already know his previous monographs should get the present book and study it; such study they will find both pleasing and remunerative.

Atlas of Methods of Clinical Investigation. With an Epitome of Clinical Diagnosis and of Special Pathology and Treatment of Internal Diseases. By Dr. Christfried Jakob. Authorized Translation from the German. Edited by Augustus A. Eshner, M.D. With 182 colored illustrations upon 68 plates, and 64 illustrations in the text. Philadelphia: W. B. Saunders. 1898.

This is a medical hand-atlas. The title-page sufficiently describes this book, a small octavo of 250 pp. The design is to teach by pictures rather than by text; in other words, text is added to the pictures instead of the pictures being added to the text. The lithographic plates are very good, and both plates and text seem to be accurate.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D. In Twenty Volumes. Volume XIII, Infectious Diseases. New York: William Wood & Co. 1898.

The first division of this volume, on "Ptomains, Toxins, and Leucomains," is by Dr. Vaughn, of Ann Arbor, than whom there is hardly any one in this country more competent to deal with these subjects.

The second division, on Infection and Immunity, is from the pen of Dr. Ernst, of the Harvard Medical School. The subjects embraced under this head are among the most important in modern medicine and cover the field of the greatest progress of the last twenty or twenty-five years. Dr. Ernst recognizes the extent of the field and the necessary limitations of allotted space. He has made a good selection of the material at his disposal and a good presentation of: "first, the experiments leading to our present ideas upon infection, and the methods by which it may occur; and second, the consideration of immunity (*a*) natural and (*b*) acquired."

Water-Borne Diseases are discussed by the late Mr. Ernest Hart and Dr. Solomon C. Smith, of London. Mr. Hart's active and constant interest in the sources and means of prevention of these diseases — especially cholera and typhoid fever — is well known, and Dr. Smith's collaboration, as the editor of *Hospital*, especially at a time when Mr. Hart's health was insecure, is natural. Malaria, dysentery, diarrhea and yellow fever are included under this head.

The Duration of the Periods of Incubation and Infectiousness in Acute Specific Diseases is treated by Dr. Dawson Williams, of the East London Hospital for Children, in a short chapter of twenty pages.

Dr. John Moore, of Dublin, presents a long and thorough chapter on Small-pox. Professor Brouardel, of Paris, contributes an article on Vaccina, and Dr. Jules Comby, of the Hôpital des Enfants, Paris, closes the volume with a chapter on Mumps.

This volume, of 621 pages, is one of the shorter, but one of the most interesting of the series.

Egbert's Hygiene and Sanitation. A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene in the Medico Chirurgical College of Philadelphia. In one handsome 12mo volume of 360 pages, with 63 engravings. Philadelphia and New York: Lea Brothers & Co.

This Manual is decidedly one of the best American works of its class which has yet appeared. The subject matter is well arranged; care has been taken that each topic should be clearly treated, and that the facts presented should be in harmony with the rapid progress of medical science. The illustrations have been selected with special reference to the text, and are all excellent.

The topics treated are as follows: Bacteriology, the Air, Ventilation and Heating, Water, Food, Stimulants and Beverages, Personal Hygiene, School Hygiene, Disinfection, Removal and Disposal of Sewage, Vital Statistics; Examination of Air, Food and Water.

The chapter upon water is treated with special fulness and accuracy. The book may safely be adopted as an excellent text-book for colleges and higher schools.

Brief Essays on Orthopedic Surgery. By Newton M. Shaffer. New York: D. Appleton & Co.

This monograph has especial interest. It may be of great value in the future history of the contest between the general practitioner and the specialist. Dr. Shaffer has devoted himself so strenuously to the development of his specialty, that he naturally has its interests at heart; he, perhaps, is over-anxious as to its future, fearing lest if the lines are not sharply drawn, it be absorbed in the larger work of general surgery to the detriment of the thoroughness of the work of this important special branch, which, however, judging from its literature and the *Transactions* of its Association, seems well able to care for itself.

The question involves a consideration of the whole matter of the relation of the specialties to general medicine, and is one which will probably settle itself by usage regardless of the arguments of disputants.

The writer is a well-known leader in his specialty, and states his opinions independently and clearly.

THE BOSTON

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PRESIDENT ELIOT'S SPEECH AT THE MASSACHUSETTS MEDICAL SOCIETY.

At the last annual meeting of the Massachusetts Medical Society, President Eliot, as is his custom, gave the members much food for thought in his after-dinner remarks. He directed attention to what is of vital importance to the profession at large, and to each individual member of it, namely, the possibility of improvement in medical teaching. That there has been a greater change in medical instruction during the last few years than in almost any other line is sufficiently self-evident. We have, in great measure, passed the age of empiricism and are at least entering on a career of exact observation in the interpretation of the problems which medicine offers for solution. As a natural consequence of this tendency, the laboratory has come to supersede the didactic lecture to a continually greater extent. These facts President Eliot pointed out, and insisted that future growth lay along the line of more detailed observation, as brought about by the use of the microscope, a point of view with which no liberal-minded man, who has the smallest conception of the meaning of progress, will be disposed to disagree.

Acknowledging this general fact, we may well ask ourselves, Must the so-called didactic lecture go, and all our lecture-rooms be forthwith converted into laboratories? or has the lecture without demonstration still a place to fill? This matter came up for discussion at the last meeting of the German Congress for Internal Medicine, and somewhat different opinions were held by those who spoke. Von Ziemssen maintained that a full course of didactic lectures, covering the field of special pathology and therapeutics, was desirable, on the ground that a text-book could never replace the personality of the lecturer and the impressiveness of the spoken word. This, we may say in passing, must depend wholly upon the lecturer, who only too often is neither magnetic nor impressive, but merely soporific in his effect upon his auditors. It is said that Billroth even could not attract students by merely didactic lectures. Von Jaksch partially agreed with von Ziemssen, but thought that clinical and didactic lectures should be incorporated; that purely didactic lectures had had their day, and that every medical lecture now must be a demonstration. Schultze thought that didactic lectures were no longer practical.

In Germany, therefore, we may see that the trend of opinion is decidedly away from the unmodified lecture. The same is certainly true with us. Each year in our better medical schools sees a diminution in the number of lectures and a decided increase in the number of hours devoted to the laboratory. We certainly hope with President Eliot that this good work may go on, but we still think there is a distinct, if subordinate, place for the lecture, and, in one sense, a place of growing importance. It is a common experience with teachers in so rapidly expanding a science as medicine to find that their students are often dazed by the very completeness and detail of their text-books. They find themselves quite lost in the maze of facts presented to them, and altogether unable to discriminate the essential from the unessential. Just here the didactic lecturer is of incalculable service. He is supposed to be, and certainly should be, a master of his subject. His experience from long familiarity with his special field makes him a competent leader. His function is therefore clear, namely, to guide his students in their own work, to single out of the vast array of facts those which are important, and to impress upon the student the significance of the relations of his subject, in other words, to discriminate for him, since he is not yet ready to discriminate for himself. In this way we are convinced a teacher is of service. He has become in a very special sense a director of minds less trained than his own, and thereby fulfils a function which is more and more needed. The young student absolutely requires, for example, some one to lead him through the mazes of the nervous system or of the blood diseases. It is wholly unfair to demand of him a comprehensive knowledge of these and many other subjects from his too voluminous text-books. In our opinion the didactic lecture fills this want; the teacher is now a director, rather than an actual repository of knowledge.

President Eliot, finally, dwelt at considerable length on the need of devoted laboratory workers, who were willing to serve their fellow-men through individual research with small hope of financial reward. He expressed the hope that many men of independent means would come to realize the necessity of such work, and would devote themselves to it regardless of its remuneration, with the added implication that those less fortunate in this world's goods would have to seek their sustenance elsewhere. This somewhat ideal point of view seems to us to have several fallacies. In the first place it has never worked to any extent in practice. Our successful laboratory workers are not and have not been men of independent means, and it is altogether unlikely that they will be more in the future than they have been in the past. To succeed in a laboratory investigation, to accomplish anything really great in the progress of scientific medicine, means a peculiar capacity, which is all too rare, and which, when found, must be encouraged at all hazards. Such a genius for investigation may occur among the sons of the rich, but how often do we find in such cases that the ardor of research is weakened by the other temptations which money brings, and the promise of accomplishment thereby cut off before it has really developed. This is natural and to be expected so long as the public recognition of such service is not forthcoming. It is much easier to lead a regiment than to sit at a laboratory desk, because the one brings recognition and the other does not. Our point, therefore, is that whether a man be rich or poor, his services must, as human nature is now constituted, be materially recognized. If a man be quite independent of any additional income, his self-respect should demand that he be rewarded for his services, and the dignity of his service depends, in good measure, upon such reward. Good work, of whatever sort, the world over, has its corresponding remuneration, and the accident of wealth seems to us to have nothing to do with the real question at issue. Naturally the rich man is more than welcomed into the paths of research, but he should enter them on exactly the same terms as his poorer brother.

The real evil of the situation, we are convinced, lies not in the fact that the rich man is not inclined to enter the self-sacrificing pursuit of original research, but that the poor man is so often forced out of it by the niggardliness of his remuneration. How often do we hear the struggling student bewail his lot, that he is unable to go on with his favorite research because there is no adequate money reward. What we unquestionably need is a public spirit which will recognize the value of research, and will then reward it according to its worth. When society has so far progressed in intelligence that it can always say to the faithful worker, "Your material wants will be amply provided for if your work warrants," we may look for the dawning of an era of enthusiastic investigation. President Eliot's implication, as suggested in his speech, would seem to us to interpose a certain barrier to the accomplishment of this end. We do not want men, whether rich or poor, to work for nothing, but we do want all men to be rewarded in just proportion to their services to society. It does not in the least detract from the dignity of work that it should be rewarded, and it certainly is an essential and proper stimulus. As a faithful laboratory student of many years' standing said to us a few weeks ago, "I know I could do better work if I got more than a hundred and fifty dollars a year."

Laboratory men have, at least, an advantage over the average young lawyers, as referred to by Mr. Chaplin at this same dinner, in that they have plenty of congenial work. The remuneration may be meagre, but they do not have to foment occupation.

THE THERAPEUTICS OF LITERATURE.

NEARLY every physician has the opportunity in his daily work to see the very striking effects of mind over matter; but it is given to the men who deal largely with nervous invalids to estimate the true importance of *printed* matter over mind. As an example, it takes usually but a very few minutes' conversation with the victim of onanistic tendencies who haunts the nervous clinics of our hospitals to elicit the fact that he is under the fearful spell of one of those *chefs d'œuvres* of pamphlet literature that are scattered broadcast by the various institutes which manufacture manhood for the masses. From the pathogenic suggestiveness of these villainous confections of broken type and tired woodcuts upon paper which is unfit even for shaving purposes, to that of the *éditions de luxe* of the septic novelists, with their handmade paper, deckle edges and illuminated type, the gradation is not so steep as might appear at first sight; and it behooves us in our treatment of nervously exhausted patients to select their mental pabulum with as much care as we do their physical.

It should be our first duty to place the works of the so-called medical realists — and especially of those with ultra-alienistic tendencies — at the very head of the *index expurgatorius*. No phobia in the entire category peculiar to the neurasthenic is apt to be so dominant and so persistent as the phobia of insanity, and it requires no effort on our part to imagine the effect produced upon the wretched victim of this phobia by the ravings of the ideal lunatic of the novelist. The latter is never content to portray the commonplace paralytic dement, in whose feeling of expansion and well-being the poor depressed neurasthenic might find a crumb of comfort, nor the well-behaved paranoiac whose crankiness has definite limitations. The lunacy of the medical realist's lunatic knows no bounds, and the prognosis is always hopeless in the extreme. As to the alleged causes of this mental alienation, we cannot better qualify their absurdity than by saying that they are even more absurd than some of those which appear in the annual reports of certain asylums; unrequited love, for instance, being equally responsible for dementia precox and the most violent manias.

Equally pernicious are the "problem" novels, dealing with subjects which may be classed under the general headings of Sex and Soul. Those of the first class are usually either the products of high-grade moral imbeciles or represent the pot-boiling efforts of struggling married authors with large families, and have an especially injurious effect upon hysterical patients with weakened powers of inhibition; those of the second, in which the writer's doubts and fears as to an hereafter are spread over four or five hundred pages of tiresome drool, are not calculated to soothe the mind of the depressed slave of a despotic nervous system, for in them his tortured soul finds no gleam of hope in the possibility of a future existence, *minus* an inquisitorial nervous organization.

What the jaded neurasthenic needs are stories with plenty of ozone in them and a thrill of out-door life that will make his chest expand in sympathetic emulation, just as we grow hungry and find our salivary glands excreting at the perusal of a mere description of a Dickens Christmas dinner. Even modern literature, in spite of its strong tendency toward coprolalia and verbigeration, abounds in tales of marked therapeutic value. In Stevenson the invalid may, in fancy, find for himself an abundance of adventurous healthful travels. He may journey leisurely inland with a donkey, or, on shipboard, feel the dash of the spray in his face and the roll of the vessel under foot. If he be but a poor seaman, and find inland waters more to his taste, he can make his way by canoe from Antwerp to Précy and intersperse the journey with sight-seeing on *terra firma.* Tiring of the Continent, he can forsake his cicerone at Précy and, in a twinkling, join forces with Jerome and his three jolly fellows in their merry holiday trip up the Thames; or if, now, a land trip appeal more strongly to him, he has but to mount his fancy upon the "Wheels of Chance" and follow Wells's heroic draper's clerk on his week's bicycle outing through rural England.

We sketch these few itineraries in barest outline, the therapeutic list is too extensive for us to attempt an enumeration. A well-known neurologist in speaking to his students some time ago on the treatment of neurasthenia, emphasized the fact that a large element of a physician's success in the treatment of this unfortunately only too common condition, would depend upon his being both a good cook and a *gourmet.* We desire to express our hearty endorsal of this sentiment, and extend the suggestion to the preparation of mental food, thereby laying upon the physician the additional necessity of being at the same time a literary *gourmet* and a censor; for with such an accomplishment he has a tremendously effective agent at his command with which to eradicate that evil most deadly to the neurasthenic's peace of mind, the evil of morbid introspection.

As a final piece of advice — and this we wish to whisper in the doctor's private ear — we would suggest, when the patient has regained his normal balance of nervous and mental activity, and the crucial moment is approaching for the presentation of the bill, that there is no better method of preparing the way than by putting into his hands Maclaren's "Doctor of the Old School." To the many who have experienced that acute softening of the heart which a reading of this touching biography invariably produces, the wisdom of such a procedure will at once be apparent.

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A MASSACHUSETTS HOSPITAL SHIP.

The steamer *Marmion,* formerly engaged in the fruit trade between Boston and Jamaica, has been secured by the Massachusetts Volunteer Aid Association, and is being fitted out as a hospital ship at the Atlantic Works, East Boston. It is designed to send this floating hospital, under the Red Cross, to Cuban waters, or wherever she may be most needed, to aid in caring for and transporting sick and wounded soldiers. The vessel is of 800 tons and is in many ways well suited to the purpose. The normal capacity as a hospital would be for about a hundred patients, although in emergencies this number might be somewhat increased. She will be thoroughly equipped as a hospital ship. There will be installed a distilling plant furnishing 2,400 gallons of water an hour, an ice machine with a capacity of 400 tons, and a refrigerating plant.

The name of the vessel will be changed to the *Bay State.* An appropriation of $50,000 for the purchase of the vessel by the State has been recommended by the Governor, and a resolve to that effect has been introduced in the Senate.

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MEDICAL NOTES.

The Chicago Society of Internal Medicine. — A new medical society has been organized in Chicago, the Chicago Society of Internal Medicine, which will probably become in the near future the Section of Internal Medicine of the Chicago Medical Society, but with autonomy as to internal management. Dr. John A. Robison is President, and Dr. Edward F. Wells, Secretary of the Society.

A Serious Accident to a Surgeon. — We learn from the *Medical Record* of a very serious and strange accident which befell Dr. Simmons, surgeon to the New York Polyclinic Hospital, while operating there about a week ago. According to the account given in the daily papers, Dr. Simmons was amputating the leg of a man who had been injured in a cable-car accident. A number of students were watching the operation, and the leg was hanging only by the soft parts, when Dr. Simmons took up the knife to sever the leg from the body. The assistant who had hold of the leg suddenly slipped and fell against Dr. Simmons. His weight pushed the knife against the left wrist of the surgeon, and the hand was nearly cut off. The loss of blood was excessive and Dr. Simmons is now reported to be in a very serious condition.

The Hospital Train. — The first hospital train of the war will be in service on the Southern Railway to Tampa in a few days. It consists of two dining-cars, ten sleepers and a baggage-car. The sleepers are so arranged as to be able to accommodate 500 men at once, if necessary. One car is arranged as an operating-room, with medicine-chests and stores convenient. The war committee of the National Association of D. A. R. will provide delicacies for the hospitals. It will be used at Tampa as a stationary hospital for the sick and wounded, until it is thought best to go North with the patients. It is expected that this railway-hospital will be of great benefit in carrying the wounded away from Florida. It will carry 20 members of the United States army hospital corps, who will act as nurses, a hospital steward, cooks and the other attendants of a modern hospital. This will undoubtedly be the most completely equipped hospital train that has ever been put in service.

BOSTON.

The Board of Registration vs. A Magnetic Healer. — The Board of Registration in Medicine has just secured the conviction in the Superior Court of Charles S. Dennis, a magnetic healer doing business at 354 Columbus Avenue, Boston. Dennis was fined in the lower court a few weeks ago, but appealed. His defence was that, notwithstanding he displayed the sign "Dr.", he did not in his treatment of the sick use or prescribe any medicine, and therefore was not a doctor of medicine within the meaning of the law. The jury thought otherwise, and a verdict of guilty was entered.

Acute Infectious Diseases in Boston. — During the week ending at noon, June 22, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 16, scarlet fever 4, measles 70, typhoid fever 5.

NEW YORK.

The Consolidation of Bellevue and the University. — The consolidation of Bellevue Hospital Medical College with the medical department of the University of the City of New York, in accordance with the announcement recently made at the University School's Commencement, was definitely consummated on June 17th at the office of William H. Wheelock, President of the Board of Trustees of the University. As previously stated, the consolidated school will be known as the University and Bellevue Medical College, and Dr. Edward G. Janeway, who some years ago resigned the chair of Medicine in the Bellevue School, will be Dean of the Faculty.

The Annex to the New York Hospital. — Plans have just been filed by the architects for the new annex to the New York Hospital. The building will occupy the site of the old Thorn mansion, on 16th Street, in which the hospital library was kept up to the time of its transfer to the Academy of Medicine. It is to be nine stories in height and cost $300,000. In addition, the hospital authorities contemplate the erection of a six-story ambulance and laundry building and a two-story Governors' building, as well as a number of alterations and repairs in the present hospital buildings, involving in all an expenditure of about $500,000.

Gift of a Hospital to the Red Cross Society. — David H. King, Jr., of New York, has generously offered his commodious winter residence on Jekyl Island, off the coast of Georgia, to the Red Cross Society as a military and naval hospital, which he engages also to maintain, as long as it may be required for the purpose, entirely at his own expense. On June 17th Secretary Faure, of the Red Cross Relief Committee, reported that the Committee had completed arrangements for the purchase, as a hospital boat, of the yacht *Admiral*, owned by Mr. Comstock, of Boston.

Suicide of a Patient at a Hospital. — During the night of June 16th, Joseph Denn, a patient thirty-eight years of age, who had been taken to the Brooklyn Hospital that afternoon suffering from appendicitis, jumped from the window of the ward on the third floor, to which he had been assigned, and was instantly killed. It is believed by the authorities that fear of an operation was the motive that induced the suicide.

Death at the Age of One Hundred and One Years. — Mrs. Mary Ann Cobb, a native of Virginia, died at the residence of her son in this city, at the age of one hundred and one. She was born on June 1, 1797, and was the daughter of James Wade, who fought through the American Revolution and survived for many years afterwards. Mrs. Cobb removed to the North after the late war, and always enjoyed excellent health until two months before her death.

Death of Dr. Gilbert. — Dr. Porteous C. Gilbert, a well-known practitioner of Saratoga Springs, died at his residence there on June 11th, at the age of fifty-seven. He studied medicine before the Civil War, but served from 1861 to 1863 as a Captain in the Fiftieth Infantry Regiment, New York Volunteers. In 1863 he was appointed a surgeon in the army. At the time of his death he was pension examiner of Post James B. McHearn, Grand Army of the Republic.

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Miscellany.

A BOSTON CITY HOSPITAL OUTING.

The staff of the Boston City Hospital held an outing on the afternoon of June 16th, at the Riverside Recreation Grounds. About ninety persons, representing the visiting and resident staffs and present and past house-officers, were present.

The afternoon was devoted to a series of athletic events. The officers in charge of the games were — Judge, Dr. W. T. Councilman; Umpire, Dr. G. H. M. Rowe; Referee, Dr. H. L. Burrell; Starter, Dr. J. B. Blake; Scorer, Dr. F. B. Mallory; Announcer, Dr. J. C. Munro; Clerk of the Course, Dr. R. M. Pearce; Time-Keepers, Drs. J. L. Morse and C. G. Dewey.

The results in the field and track events were as follows:

1. One-hundred-yard Dash. Won by Symser. Magrath and Lund were tied for second place. Time 11¼ seconds.
2. Running Broad Jump. 1, Lund; 2, Morrissey; 3, Nichols. Distance 16 ft. 2 in.
3. Running High Jump. 1, Morrissey; 2, Kingsford; Magrath and Lund tied for third place. Height 4 ft. 6 in.
4. Putting the Twelve-pound Shot. 1, Starbird; 2, Morrissey; 3, Blake, J. B. Distance 35 ft. 10 in.
5. Three-legged Race. 1, Lund and Burke, M. F.; 2, Bacon and Carroll; 3, Hurd and Hartwell.
6. Canoe Race. 1, Hartwell; 2, Strong; 3, Mann.
7. Tub Race. 1, Magrath. The others were not "in it" or the tubs after the start.

8. Swimming Race. 1, Paul; 2, Truesdale; 3, Starbird.

9. Relay Race. Won by the Pathological team, the "Phagocytes," composed of Bottomley, Kingsford, Magrath and Strong. This was the principal event of the day. The Surgical Side and the South Department each had a team on the track, the former consisting of Brown, Morrissey, Willis and Eddy; and the latter of Smyser, Bacon, Carroll and Cushman. The Pathological team appeared for this event in original costumes consisting of short pink skirts over their running trunks, and other pink and blue decorations. Their first man took the lead at the start and the other men held it to the finish.

Other events were a Canoe Tilt, won by Weil and Cronin, and an impromptu Shot Put between Drs. Councilman and Rowe, in which the latter won.

A prize was awarded to the winner of each event. A prize for the individual scoring the largest number of points was won by Morrissey (Surgical) who made 11 points, while Lund (Surgical) and Magrath (Pathological) were tied for second place with 7½ points each. The prize for the department making the highest score was won by the Surgical Department, 38½ points. The scores of the other departments were: Pathological, 18½ points; Graduate, 12; South Department, 5; Medical, 3.

In the evening the company paddled up the river, in war canoes, and had supper on the banks.

The outing was planned by two committees, one on arrangements, composed of Drs. H. A. Barnes, W. A. Hartwell and L. W. Strong, and one on athletics composed of Drs. J. B. Blake, M. F. Cronin, C. S. Catlin and R. M. Pearce.

It was the universal opinion of the men present that the outing should be held annually.

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THE FORAMEN OF WINSLOW.

Desirous of aiding as far as possible all medical students who are now about undergoing the severe trials of memory known as first- and second-year examinations in anatomy, we publish the following poetic and at the same time accurate description of an important and difficult anatomical region, one in fact which may be described as the central point about which abdominal anatomy is grouped, or as the key to the situation. With regard to this fact, the following dictum has been attributed to Hippocrates: "The way to *learn* anatomy is to begin at the foramen of Winslow (Οὐίνσλω) and work outward."

Combining, as they do, accurate anatomical description with the true lyric touch, these verses, which have lately been discovered unsigned among some old papers, have by some been attributed to our own poet and anatomist, Oliver Wendell Holmes, although this theory of their authorship has not been fully confirmed.

The Foramen's Lament.

I'm a poor abused foramen,
After Winslow I am named,
As a sticker and a poser
I am most unjustly famed.
For the students all neglecting,
Often fail in their detecting,
While my owner they're dissecting,
Then most roundly am I blamed.

I'm a poor abused foramen;
And in front of me is tucked,
The communis choledochus, which
Is nothing but a duct.
Farther front the duodenum —
Hepatic artery between 'em —
And the portal vein, you've seen 'em —
But if not, your surely plucked.

I'm a poor abused foramen;
And I'm bounded on the back
By the lower vena cava,
For I'm just before its track.
The right crus of the diaphragm
Then helps show you where I am
As I guide you from the greater,
Over to the lesser sac.

I'm but a poor foramen,
And the lobe Spigelii
Is kind enough to locate so's
To form the top of me;
The vessel that I've named before
Is kind enough to form the floor,
Just he alone and nothing more
Hepatic artery is he.

Now gentle reader listen,
Have I not good cause for sadness?
My descriptions never tally, and
They drive me most to madness
As I read the verbal photographs
That pass from book to book,
And make me out the darndest thing
That ever looked a look.
I know I don't deserve it,
I'm a simple little hole,
And the thought of these descriptions
Harrows up my very soul.

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Obituary.

JOHN BLAIR GIBBS, M.D.

Dr. John Blair Gibbs, who was killed while in active service at Guantanamo on June 11th, and was the first medical officer to lose his life in the present war, was a well-known and highly esteemed member of the profession in New York. He had attained an enviable position as a surgeon and pathologist, and gave up a large and lucrative practice to enter the service of his country. He came of good old Revolutionary stock, and his father, Major Gibbs, of the Seventh United States Cavalry, who had served with gallantry through the Mexican and Civil wars, was killed with Custer at the battle of the Little Big Horn. At the time of his death he was a major-general by brevet.

Dr. Gibbs was born in Richmond, Va., thirty-nine years ago, and was graduated from Rutgers College, New Brunswick, N. J., in 1878. He pursued his medical studies first at the University of Virginia, and afterwards at the College of Physicians and Surgeons, New York, from which he was graduated in 1882. In 1884, after having served for eighteen months as interne at Bellevue Hospital, he went abroad and studied for nearly two years in London and Vienna. On his return to New York he became associated with Dr. Charles Kelley, with whom he remained until 1894, when he formed a partnership with Dr. Parker Syms. When war with Spain was declared he immediately applied for a position in the naval medical service, to which his fondness for yachting inclined him rather than to the army. He was appointed acting assistant surgeon, United States Navy, with the rank of ensign, on May 3d, and passed the requisite examination before the Board of Examiners at the Brooklyn Navy Yard with high honors.

At the time he volunteered Dr. Gibbs was assistant attending surgeon at Roosevelt Hospital, an instructor at the Post-Graduate Medical School, and first assistant surgeon to the Lebanon Hospital in the Borough of the Bronx. At a special meeting of the board of trustees of the latter institution, held June 19th, resolutions lamenting his untimely death were adopted.

Correspondence.

THE BOSTON FLOATING HOSPITAL.

Boston, June 20, 1898.

Mr. Editor: — The work of the Boston Floating Hospital has been carried on during the past four summer seasons in July and August. The idea comes from New York, where a similar hospital has been in existence for many years, being carried on in connection with a seaside hospital by St. John's Guild. For three seasons, one trip per week at first, two later, were made. An excursion barge (the *Clifford*) was chartered for the day, and the sick children were cared for in hammocks and cots. Patients were admitted by means of cards signed by physicians and stating the diagnosis, thus guarding against contagious disease. The mother was, of course, admitted with the child and one well child, if under six years of age, was also taken, if the mother declared that she had no means of providing for its care otherwise. The barge left the wharf at 9 A. M., returning at 4 P. M. Facilities of all kinds were lacking. System or order was impossible. Scientific work was prospective only. In spite of all this, an apparent beneficial result was observed in a sufficiently large percentage of cases to constitute a reason for further prosecuting the work.

During the winter of 1896–97 an appeal for funds was made and responded to so generously that the Board of Managers, which had its origin at this time, was enabled to purchase the barge at an expense of $3,500, and also to fit her up as a hospital at a further cost of $2,500. During the season of 1897 a permanent consulting and visiting staff was organized and the position of house-officer (with a salary) was established. Two wards of twelve cribs each were laid out, the one for the sickest children being entirely shut in from the weather. The middle deck was surrounded with an adjustable awning. Four trips per week were made. During this season careful medical records were kept and much pains were taken to ascertain the results of treatment. For the details, the reader is referred to the annual report of the hospital.

The nursing has been for the two years past under the charge of an experienced graduate, and, during the last season, five paid assistants. The hospital has also been very much aided by the many graduate nurses who have done volunteer work.

During last season, as might be expected, patients were encountered who were too ill to be sent home, and these were kept aboard, some for several days. The boat was moored for the night at the end of the long wharf near the East Boston dry dock. It was found that the conditions here were so favorable to patients that the management has this year decided to institute a *permanent* hospital on the boat. It is believed that this will add very greatly to the value of the work. The boat will be moored at night at the East Boston pier mentioned and will make its trips as usual with the day patients on board in addition to those who are continuously in the hospital. The mothers will be allowed to remain on board with permanent patients; but inasmuch as they will have opportunity to go to and from their homes, they will be given only one meal daily on the hospital.

Trips of the hospital will be more frequent during the coming season than previously, namely, every week-day during July and August.

With reference to the financial outlay required, it is estimated that $6,000 will approximately cover the expenses of this year.

The number of sick children that can be accommodated on a trip is 150 comfortably, and by some crowding 200.

It will thus be seen that a very large number of patients may, during the season, receive the hospital care. Last year 782 new cases were treated.

An important part of the hospital is its value as an educator. As a measure in the line of preventive medicine it is of essential value to train the mother in the art of caring for her child. It has been noticed that many mothers profit by the object-lesson that they receive while on the hospital, especially in the matters of cleanliness and regularity. The distribution of printed cards is carried out, and probably does some good. This year it is proposed to give demonstrations to a small number of women at a time, of the method of preparing sterilized food for their children. Printed directions (afterward given to the women) will be exactly followed, and it is hoped that some impression may be made.

Samuel Breck, M.D.,
Visiting Physician to the Hospital.

RECORD OF MORTALITY

For the Week ending Saturday, June 11, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York	3,438,899	1068	362	9.36	11.34	2.34	1.89	1.80
Chicago	1,619.226	—	—	—	—	—	—	—
Philadelphia	1,214,256	—	—	—	—	—	—	—
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	181	53	12.60	8.25	3 85	3.30	.55
Boston	517,732	146	37	8.28	15.18	.69	2.07	.69
Cincinnati	405,000	93	—	4.32	16.20	1.08	1.08	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	—	—	—	—	—	—	—
Washington	277,000	80	26	19 55	18.30	8 75	1.25	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	49	15	10.20	10.20	2.04	2.04	—
Worcester	105,050	31	13	9.69	3.23	3.23	—	—
Fall River	95,919	32	11	9.39	19.78	6.26	—	—
Nashville	87,754	29	10	34 48	3.45	—	27.60	—
Lowell	87,193	26	11	3.85	19.25	3.85	—	—
Cambridge	86,812	14	3	—	35.70	—	—	—
Lynn	65,220	20	6	—	—	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
New Bedford	62,416	16	5	12.50	—	6.25	6.25	—
Somerville	57,977	13	2	—	12.58	—	—	—
Lawrence	55,510	14	7	—	7.14	—	—	—
Springfield	54,790	11	4	—	27.27	—	—	—
Holyoke	42,364	13	9	20.37	6.79	13.58	6.79	—
Salem	36,062	4	0	—	25.00	—	—	—
Brockton	35,853	—	—	—	—	—	—	—
Malden	32,894	7	2	28.56	14.28	14.28	14.28	—
Chelsea	32,716	11	0	9.09	18.18	—	9.09	—
Haverhill	31,406	13	1	6.79	6.79	—	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	11	3	—	9.09	—	—	—
Taunton	27,812	9	3	—	—	—	—	—
Quincy	22,562	2	1	—	—	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	2	0	—	50.00	—	—	—
Everett	21,575	—	—	—	—	—	—	—
North Adams	19,135	3	1	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Chicopee	17,368	2	1	—	—	—	—	—
Brookline	16,164	—	—	—	—	—	—	—
Medford	15,832	3	2	33.33	—	—	53.33	—

Deaths reported 1,922: under five years of age 593; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 213, consumption 242, acute lung diseases 219, diarrheal diseases 53, diphtheria and croup 45, measles 22, whooping-cough 22, cerebro-spinal meningitis 20, scarlet fever 18, typhoid fever 18, erysipelas 5.

From whooping-cough New York 16, Boston 2, Baltimore, Providence, Nashville and Lynn 1 each. From cerebro-spinal meningitis New York 7, Baltimore 3, Washington, Providence and Worcester 2 each, Nashville, Lynn and Holyoke 1 each. From scarlet fever New York 16, Baltimore and Fall River 1 each. From typhoid fever New York 5, Boston and Washington 4 each, Baltimore 3, Cincinnati 2. From erysipelas New York 3, Baltimore and Washington 2 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending June 4th, the death-rate was 16.8. Deaths reported 3,611; acute diseases of the respiratory organs (London) 226, measles 136, whooping-cough 110, diphtheria 54, diarrhea 44, scarlet fever 32, fever 13.

The death-rates ranged from 9.9 in Derby to 24.6 in Sunderland; Birmingham 18.3, Bradford 14.7, Cardiff 15.5, Gateshead 23.1, Huddersfield 14.3, Hull 13.4, Leeds 19.5, Leicester 12.2, Liverpool 22.7, London 16.1, Manchester 20.3, Newcastle-on-Tyne 24.3, Nottingham 16.6, Portsmouth 15.9, Swansea 14.3, West Ham 11.5.

METEOROLOGICAL RECORD

For the week ending June 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....5	30.22	52	55	50	92	97	94	N.E.	E.	12	9	O.	O.	.02
M...6	30.18	55	59	51	82	93	88	E.	E.	6	4	F.	O.	
T....7	30.15	69	80	58	84	91	88	W.	E.	5	5	C.	O.	
W...8	29.96	70	84	56	83	81	82	S E.	S.W.	4	16	C.	O.	
T....9	29.82	76	87	66	77	59	68	W.	N.W.	6	10	F.	F.	.01
F...10	30.12	65	72	58	67	62	64	N.E.	S.W.	14	10	F.	O.	
S...11	30.06	66	74	58	68	80	70	S.W.	S.W.	9	12	O.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 11, 1898, TO JUNE 17, 1898.

Captain Henry S. T. Harris, assistant surgeon, now on duty with Cavalry Division, Tampa, Fla., will report for duty to Major-General Fitzhugh Lee, U. S. V., commanding 7th Army Corps, Jacksonville, Fla.

Captain Henry B. Shaw, assistant surgeon, now on duty at the General Hospital, Key West, Fla., is ordered to duty at Key West Barracks, Fla.

Captain Paul Clendenin, assistant surgeon, now at Key West Barracks, ordered to Jacksonville, Fla., for duty with 7th Army Corps.

Captain Adrian S. Polhemus, assistant surgeon, will proceed from Fort Wingate, N. M., to Chickamauga National Park, Ga., and report for duty with 3d Army Corps.

Captain Charles B. Ewing, assistant surgeon, now on duty with Cavalry Division, Tampa, Fla., will report to Major-General James F. Wade, U. S. V., commanding 3d Army Corps, Chickamauga National Park, for duty at Camp George H. Thomas, Ga.

Acting Assistant Surgeon George B. Lee, U. S. A., will proceed to Jacksonville, Fla., and report to Major-General Fitzhugh Lee, U. S. V., commanding 7th Army Corps, for duty.

Acting Assistant Surgeon Medwin Leale, U. S. A., is assigned to duty with squadron of New York Cavalry Volunteers at Camp Alger, Va.

Captain John L. Phillips, assistant surgeon, having reported to the Surgeon-General of the Army, is ordered to Camp Alger, Falls Church, Va., for duty with 2d Army Corps.

The order assigning Captain Ogden Rafferty, assistant surgeon, to duty in General Hospital, Key West, Fla., is revoked, and he will proceed to Falls Church, Va., and report to Major-General William M. Graham, U. S. V., for duty.

First-Lieut. Carl R. Darnall, assistant surgeon, will proceed to Tampa, Fla., and report to Major-General William R. Shafter, U. S. V., commanding 5th Army Corps, for duty.

Acting Assistant Surgeon S. M. Gonzalez, U. S. A., will proceed to Tampa, Fla., and report for duty with Cavalry Division.

BOOKS AND PAMPHLETS RECEIVED.

Diet for Consumptives. By Reynold W. Wilcox, M.D., New York. Reprint. 1898.

The Surgery of the Gall-Bladder and its Ducts. By H. O. Walker, M.D. Reprint. 1898.

A New and Successful Treatment of Certain Forms of Headache. By E. Larue Vansant, M.D., Philadelphia. Reprint. 1898.

A Case of Partial Dislocation of the Occipito-Atloidean Articulation. By J. N. Hall, M.D., and H. L. Taylor, M.D., Denver, Col.

Proceedings of the New York Pathological Society for the Year 1896. Organized in 1844, Incorporated in 1886. Printed for the Society. 1897.

Transactions of the American Pediatric Society, Ninth Session, held in Washington, D. C., May 4, 5 and 6, 1897. Edited by Floyd M. Crandall, M.D. Volume IX.

The Methodist-Episcopal Hospital Reports. Volume I, 1887, 1897. Edited by Lewis Stephen Pilcher, M.D., Glentworth Reeve Butler, M.D. New York: Published by the Hospital. 1898.

Aortic Stenosis with Mitral Regurgitation; a Clinical Lecture. Detection of Fœtal Heart Murmur *in Gravida*, with Report of a Case. Displacement of the Heart in Lung Disease. By J. N. Hall, M.D., Denver, Col. Reprints. 1898.

Outlines of Practical Hygiene. By C. Gilman Currier, M.D., Associate of the American Society of Civil Engineers; Fellow of the New York Academy of Medicine; Member of the New York Pathological Society, etc. Third edition, revised and enlarged. New York: E. B. Treat & Co. 1898.

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger, Ober medicinalrat and Professor. Volume II. Urinary Apparatus, Sexual Organs, Nervous System and Bones. With 63 colored figures upon 52 plates and 17 illustrations in the text. New York: William Wood & Co. 1898.

Diseases of the Stomach, a Text-Book for Practitioners and Students. By Max Einhorn, M.D., Adjunct Professor in Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Dispensary. Second revised edition. New York: William Wood & Co. 1898.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Professor of Anatomy, Physiology and Hygiene in Temple College; Member of the Academy of Natural Sciences of Philadelphia, etc. Illustrated with 63 engravings. Philadelphia: Lea Brothers & Co. 1898.

Modern Gynecology, a Treatise on Diseases of Women, comprising the Results of the latest Investigations and Treatment in this Branch of Medical Science. By Charles H. Bushong, M.D., Assistant Gynecologist to the Demilt Dispensary, New York; formerly Attending Physician to the Northern Dispensary, New York. Illustrated. Second edition. Enlarged. New York: E. B. Treat & Co. 1898.

Atlas and Abstract of the Diseases of the Larynx. By Dr. L. Grünwald, of Münich. Authorized translation from the German. Edited by Charles P. Grayson, M.D., Lecturer on Laryngology and Rhinology in the University of Pennsylvania; Physician in charge of the Nose and Throat Department, Hospital of the University of Pennsylvania. With 107 colored figures on 44 plates. Philadelphia: W. B. Saunders. 1898.

Brief Essays on Orthopedic Surgery, Including a Consideration of its Relation to General Surgery, Its Future Demands, and Its Operative as well as Its Mechanical Aspects, with Remarks on Specialism. By Newton M. Shaffer, M.D., Surgeon in Chief to the New York Orthopedic Dispensary and Hospital; Clinical Professor of Orthopedic Surgery, University of New York City (Medical Department); Consulting Orthopedic Surgeon to St. Luke's and the Presbyterian Hospitals, New York, etc. New York: D. Appleton & Co. 1898.

Zur Aufklärung der Rolle, welche stechende Insekten bei der Verbreitung von Infektionskrankheiten spielen. Infektionsversuche an Mäusen mittels mit Milzbrand, Hühnercholera und Mäuseseptikämie infizierter Wanzen und Flöhe. [Aus dem hygienischen Institut Berlin.] Von George H. F. Nuttall, Dr. med. et phil. ehem Dozenten der Hygiene an der Johns Hopkins Universität, Baltimore, dermal. Assistent am hygienischen Institut in Berlin. Abdruck aus dem Centralblatt f. Bakteriologie, Parasitenkunde u. Infektionskrankheiten, Erste Abt., xxiii Bd., No. 15, 1898.

Atlas of Legal Medicine. By Dr. E. Von Hofmann, Professor of Legal Medicine and Director of the Medico-Legal Institute of Vienna. Authorized translation from the German. Edited by Frederick Peterson, M.D., Clinical Professor of Mental Diseases in the Woman's Medical College, New York; Chief of Clinic, Nervous Department, College of Physicians and Surgeons, New York. Assisted by Aloysius O. J. Kelly, M.D., Instructor in Physical Diagnosis, University of Pennsylvania; Adjunct Professor of Pathology, Philadelphia Polyclinic, etc. Fifty-six plates in colors, and 193 illustrations in black. Philadelphia: W. B. Saunders. 1898.

Original Articles.

THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION ON INFANTILE SCURVY IN NORTH AMERICA.[1]

J. P. CROZER GRIFFITH, M.D., CHARLES G. JENNINGS, M.D., JOHN LOVETT MORSE, M.D., COMMITTEE.

THE subject of infantile scurvy has so recently come into prominence, and still presents so many mooted questions, especially regarding its etiology, that it was the decision of the American Pediatric Society a year ago to undertake a collective investigation of the matter, based upon the cases occurring in America. This seemed particularly needed, as no other such study upon a large number of cases has yet been made in any country.

The committee, which is now making its report, was accordingly appointed. It has been dilligently at work during nearly a year, and has used every means in its power to reach reports of cases of the disease. A list as accurate as possible was prepared of all the medical journals of North America, and a notice of the proposed investigation was sent to each, inviting correspondence on the part of all readers. Letters were sent to the secretaries of the country societies in a large number of the States of the Union, requesting that notice be given at the meetings. Letters were also addressed to the professors of diseases of children in all the regular medical colleges of the United States. The "Index Medicus" was searched for the names of those who had published reports of cases, and letters were addressed to all of them, as indeed to all physicians of whom even the rumor had come of probable cases under their charge. Circulars were printed containing questions to be answered, and were sent to all the members of the American Pediatric Society, to all physicians applying for them, and finally wherever there seemed any chance of getting a response.

The questions contained in the circular requested information on the following points: Whether the case was seen in hospital or private practice; the race, sex, and age; the hygienic surroundings, family history, and previous illnesses; full details of feeding from birth, and the influence which the food appeared to have had upon the development of the disease; the symptoms in detail, with special reference to pain and its location, apparent paralysis or inability to move, swellings, fractures, hemorrhages, the condition of the gums, the presence of fever, the condition of the urine and bowels, the presence of anemia or malnutrition and of rickets or any other complicating diseases, and the character of the first symptom to develop; the treatment in detail, with duration of illness, and the time before decided improvement was discovered; the direct cause of death in fatal cases, and the *post-mortem* findings; and finally, whether the case had been published previously.

The committee has been surprised and pleased at the large number of replies received. There are other cases of which it has knowledge of which no reports could be obtained, and undoubtedly many more whose existence was not discovered. But in all the committee has collected 379 cases seen by 138 observers. Some of the cases are very incompletely reported, but in the majority of instances the answers are for the most part satisfactory. No cases needed to be excluded as instances of mistaken diagnosis, although a very few were somewhat doubtful.

The topics covered by the questions can best be taken up for the most part seriatim, stating merely what the reports state, without vouching for the correctness of opinions.

RACE. — The race to which the subjects of the disease belong is stated in 372 cases. It is not given with definiteness sufficiently often to allow of an analysis further than to say that there were 367 white, 4 black, and 1 Chinese.

SEX. — Sex shows out of 372 cases, 189 male, that is, 51 per cent.; and 183 female, that is, 49 per cent.; a difference not decided enough to indicate that sex is an etiological factor. In the remaining cases the sex is not mentioned.

AGE. — Age is a very important matter. Although strictly speaking, the age of the cases of infantile scurvy should be limited to those under two years, the committee has ventured to include a few in children slightly or decidedly older than this; since the etiology and symptoms are not different in any respect. Question IV on the circular reads, "Age when Seen with Scurvy," while XIV reads, "Duration of Illness before Treatment was Commenced." By combining the answers to these two questions, the age at which the illness developed could be determined in most instances. Reliable information was given in 359 cases; in the remaining number the age was unknown or was not stated. The accompanying tabular arrangement shows the number of cases developing at different ages:

AGE WHEN SCURVY DEVELOPED.

Age.	Cases.	Per ct.	Age.	Cases.	Per ct.
3 wks.	1	.27	16 mos.	7	1.70
1½ mos.	1	.27	17 "	6	1.67
2 "	3	.83	18 "	7	1.70
3 "	2	.55	19 "	4	1.11
4 "	9	2.50	20 "	2	.55
5 "	5	1.40	22 "	1	.27
6 "	13	3.62	23 "	1	.27
7 "	33	9.19	2 yrs.	2	.55
8 "	41	11.42	2 yrs., 3 mos.	1	.27
9 "	47	13.09	2 " 6 "	1	.27
10 "	51	14.20	2 " 7 "	1	.27
11 "	26	7.24	2 " 8 "	1	.27
12 "	25	7.00	3 " 6 "	1	.27
13 "	25	7.00	4 " 2 "	1	.27
14 "	22	6.12	6 "	1	.27
15 "	17	4.73	9 "	1	.27

It will be seen that the disease is most apt to develop between the ages of seven and fourteen months, inclusive. The youngest case was that reported by Dr. A. Matheson of Neillsville, Wis. This was a child of four weeks who had already been ill five days when first seen. The child was fed at the breast. Its hygienic surroundings were poor. The disease exhibited perfectly typical symptoms and ended fatally.

The oldest child, reported by Dr. J. H. Fruitnight, was one of nine years, and was also a typical case, rapidly recovering under dietetic treatment. The cause appeared to be improper diet.

SOCIAL POSITION. — Of 379 cases it is interesting to note that 83 per cent. occurred in private practice, and only 17 per cent. in hospital practice. Although no absolute class distinctions can be based on these figures, yet they point very positively to the greater tendency of the disease to occur among the rich or the well-to-do. This tendency is still further illustrated by the statements of the writers regarding the *hygienic surroundings* of the cases. In 303 cases these are described as good, and often the statement is volunteered that they were of the very best. In five they were doubtful, and in only 40 are they described as bad. The figures of the report would therefore seem to indicate that the influence of bad hygienic conditions upon the etiology of the disease is extremely limited.

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[1] Reported at the Tenth Annual Meeting, Cincinnati, June 2, 1898.

Previous Health. — Out of 285 cases suitable for study, it is distinctly stated in 167 that the previous health had been good. In 118 the child had suffered from various diseased conditions, which may be enumerated as follows:

Bronchitis, 5; chicken-pox, 1; constipation, 1; convulsions, 3; cretinism, 1; diarrheal conditions, 45; eczema, 1; furunculosis, 1; indigestion, 22; influenza, 6; malaria, 1; measles, 7; pneumonia, 5; rheumatism, 1; scurvy (previous attack), 1; scrofulous diathesis, 1; typhoid fever, 1; whooping cough, 2.

It is evident that the occurrence of most of these diseases can only be considered as accidental. There is a striking preponderance of instances of digestive disturbance. This probably is an indication that the faulty diet which occasioned the scurvy produced the indigestion also. It is no proof that the digestive disease itself bore any etiological relation to the constitutional affection. This is clearly the view of the correspondents, for, in answer to the question of the circular, a belief in any other cause than diet is expressed in only 24 instances.

Rickets, anemia, and malnutrition are not mentioned in the foregoing list. They will be referred to later.

Attention may be called to the instance of a second attack of scurvy reported by Dr. L. E. Holt. The child was eighteen months of age at the time of the second attack, the previous one having developed four months before. The first attack followed the use of Mellin's food and sterilized milk. Recovery followed in a week upon a diet of sterilized milk and beef juice, no fruit juice being given. The second attack followed the use of Reed & Carnrick's soluble food. The patient in this attack was in a wretched condition and died in eight days.

The case of scurvy developing in a cretin, reported by Dr. A. Caillé, is also interesting. The child was a typical cretin of fourteen months. Scurvy followed the use of condensed milk. Recovery was very prompt under the administration of sterilized milk, fruit juice and cereals.

Family History. — This, too, appears to exert little or no influence. In 129 cases the family history is stated to have been good, and in 97 it is negative. In 74 the following diseases are mentioned in the family:

Alcoholism, 2; anemia, 2; asthma, 1; carcinoma, 1; caries of spine, 1; diarrhea, 1; eczema, 1; gout, 2; neurotic tendency, 6; paresis, 1; pneumonia, 1; rheumatism, 16; sciatica, 1; scurvy, 1; syphilis, 7; tuberculosis, 29; uricacidemia, 1.

Diet. — The most important etiological factor, according to general opinion, is a dietetic one. Consequently, the committee has paid particular attention to this point. When correspondents did not make the matter quite clear in their answers, personal letters were addressed to them, asking for further information. A large number of such letters have been written, and replies received in most instances. Full details were asked regarding diet from birth onward, and the question of food used at the time the scurvy developed, or so shortly before that it might seem to be associated with it, was particularly emphasized. The question was also asked, whether in the opinion of each correspondent there was reason to believe that the disease depended on the nature of the food used. An affirmative answer was received in 275 cases; negative, and the disease attributed to other causes, in 24. The committee is not in a position to judge of the correctness of this view, nor can it claim that the disease *did* arise in any instance as the result of the diet employed. It would make merely the following statements of the food employed at or shortly before the symptoms of scurvy were observed according to the reporters' replies.

Any accurate percentage analysis of the report is impossible, both because the correspondents have not always stated the exact nature of the food, and because in very many instances more than one form of food was given. Perhaps the following summary of some of the main divisions may be of value, remembering, however, that cases are repeatedly counted twice; for example, one case may be counted in the condensed milk class and again in the sterilized milk division.

FOOD USED AT OR SHORTLY BEFORE SCURVY DEVELOPED.

Number of cases in which the character of the food is specified, 356.

Food given as follows:

Breast Milk. — Alone, 10; with raw milk and amylaceæ 1; with sterilized milk and amylaceæ, 1; total, 12.

Raw Milk. — Alone, 4; with breast milk and amylaceæ, 1; total, 5.

Milk (nothing said about heating). — Alone, 8; peptonized, 4; with amylaceæ, 4; total, 16.

Sterilized Milk. — Alone, 68; with proprietary foods, 21; with amylaceæ, 8; peptonized, 10; total, 107.

Pasteurized Milk. — Alone, 16; with proprietary foods, 2; with amylaceæ, 1; peptonized, 1; total, 20.

Peptonized Milk. — Nothing further stated, 3; sterilized, 8; Pasteurized, 1; with proprietary foods, 1; with amylaceæ, 1; total, 14.

Amylaceous Food (not proprietary). — Alone, 6; with breast milk, 3; with milk, 5; with sterilized milk, 8; with Pasteurized milk, 1; with peptonized milk, 1; total, 24 (9 of these were oatmeal).

Table Food. — Nothing else mentioned, 11; with condensed milk, 1; total, 12.

Mellin's Food. — Nothing further stated, 42; with condensed milk, 22; with sterilized milk, 16; with Pasteurized milk, 2; with other proprietary food, 1; total, 83.

Malted Milk. — Nothing further stated, 44; with cream, 1; with amylaceæ, 1; with other proprietary foods, 2; total, 48.

Condensed Milk. — Alone, 32; with milk, 1; with cream, 1; with other proprietary foods, 3; with table food, 1; total, 38.

Reed & Carnrick's Soluble Food. — 13.

Imperial Granum. — 6.

Liebig's Food. — Alone, 1; with condensed milk 1; total, 2.

Lactated Food. — Alone, 3; with condensed milk, 1; total, 4.

Nestlé's Food. — Alone, 1; with sterilized peptonized milk, 1; total, 2.

Among other articles of diet mentioned by correspondents, each in one instance, are: Gardner's food, Robinson's barley, Ridge's food, Brush's food, animal broths, Bartlett's pepsinated food, Lactopræparata with malted milk.

There are a number of instances in which the writers mention "proprietary foods" without further designation. In all 214 cases (60 per cent.) were fed on proprietary foods.

The effect of dietetic treatment has such an important bearing upon the etiological influence of diet that the whole matter will be discussed more fully under Treatment.

Symptoms. — The symptoms in infantile scurvy are so typical and well known that they would appear to need little further study. Nevertheless, the attention which has been directed to them by the questions of the circular has not been without fruit.

First Symptom to Develop, and Order and Time of Other Symptoms. — In response to this question the answers have not been altogether satisfactory. Undoubtedly in a large number such early symptoms as anemia and malnutrition were overlooked or were not included by the readers as symptoms of the disease. Then in a large number, perhaps the majority, of cases, answers have not made it quite clear whether the correspondent intended that a certain number of symptoms developed in the order in which the names are written, or whether they all were noticed at one time. Presuming that the first is the writer's intention, we make the following statement of the first symptom seen, basing this on 327 cases. The order of symptoms is too complicated and too uncertain to warrant a statistical arrangement.

First Symptoms Seen. — Pain and tenderness, 145; affection of gums, 42; interference with motion, 36; anemia, 27; cutaneous hemorrhages, 22; swellings, 16; restlessness, 6; anorexia, 5; debility, 5; diarrhea, 5; constipation, 2; hemorrhage from nose, 1; hemorrhage from mouth, 1; hemorrhage from rectum, 1; hematuria, 3; "hematoma of tongue," 1; irritability, 3; vomiting, 1; fever, 1; opisthotonos, 1; sweating, 1.

Pain on Motion or Handling. — Pain is clearly a very prominent symptom of the disease. Generally it is evident only when the child is moved, or tries to move itself. Sometimes it is so intense that the approach of any one to the bedside is sufficient to cause the child to scream out through fear of being touched. Pain is reported present in 314 instances. In most of the remaining, no answer was made, and it is probable that the symptom could not have been a prominent one. The locality of the pain in the cases where there were accurate details was as follows:

Legs, 120; legs and arms, 25; legs and one arm, 11; legs and body, 4; one leg, 13; one leg and one arm, 1; one arm, 1; back, 1; back and legs, 1; back and leg, 1; back and thighs, 1; thighs, 1; hips and thigh, 1; one thigh, 2; one hip, 2; knees, 1; knees and ankles, 2; knees, ankles and shoulders, 1; knees, ankles and wrists, 2; knees and arms, 1; one knee, 1; one ankle, 1; ankles, 1; ankles and feet, 1; ankles and elbows, 1; elbow, 1.

Pain when at Rest. — In 91 cases pain seems to have been present, even when the child was still; while in 134 it is definitely stated as absent under this condition.

Interference with Motion. — The symptom variously described as *paralysis*, *pseudo-paralysis* and *disability* or *unwillingness to move* is reported frequently. It probably depends in every instance upon pain, since there is no evidence that actual paralysis occurs in the disease. In 319 cases interference with motion of this nature existed.

Rigidity is described as present in 96 cases and absent in 106. It is due to pain in most instances, but perhaps in others may have been occasioned or increased by the presence of swelling.

The parts of the body in which motion has been interfered with in any way in the cases reported, and the locality mentioned in detail, may be enumerated as follows:

Legs, 159; legs and arms, 55; legs and one arm, 14; legs and one hand, 2; one arm, 3; legs and thighs, 1; thighs, 3; one leg and one arm, 1; one leg, 27; one thigh, 2; hips, 1; one hip, 2; one hip and thigh, 1; one hip and knee, 3; hip, leg and shoulder, 1; hip, elbow and shoulder, 1; one knee, 4; one ankle, 2; ankles, knees, hand and wrist, 1.

Position of the Limbs. — To a question regarding the position of the limbs, about which Barlowe speaks so definitely, there have been replies in 205 cases. In 17 of these the position was normal. In the balance we find the position of the limbs as follows:

Flexed, 152; extended, 23; flexed and abducted, 1; flexed and adducted, 1; flexed and everted, 1; abducted, 1; everted, 3; everted and extended, 2; toes extended, 1; feet extended, 3.

Weakness of the Back. — The occurrence of weakness of the back, a symptom which Barlowe says is marked, is mentioned as present in 97 of the cases reported to the committee and as absent in 108. In the remaining nothing is said of it.

Depression of the Sternum. — This condition is likewise emphasized by Barlowe as being sometimes striking and characteristic. It is mentioned in 34 cases, but said to be absent in 170 others. It is not certain in the cases of the report how frequently the condition had developed acutely as a result of scurvy and how often it had already been produced by a previously existing rachitis.

Swellings. — The effort has been made by analyzing the cases collected to determine the position of local swellings, whether these were situated in the joints or the shafts of the limbs, in the soft tissues or in the bones, and whether any redness was present. The answers are not clear in every instance, and are frequently somewhat contradictory, partly, perhaps, from failure of the observer to understand the question, and partly from lack of careful discrimination between subperiosteal and other effusions, and between effusion into a joint and that about it. The great irregularity also of the distribution of the swelling renders an accurate tabular arrangement too complicated. Remembering that in many cases more than one part of the body was involved and that the figures given do not mean that only the portion mentioned is affected in these cases, the following division may be made:

Joints (or probably oftener about joints) involved in 165 cases. Location given in 101, namely: knees, 73; ankles, 28; wrists, 12; hand, 1; elbow, 3; shoulder, 5; hip, 6.

Shafts of limbs involved in 179 cases. Location given in 123, namely: thighs, 59; legs (below knee), 61; "legs" (not further stated), 11; forearm, 5; upper arm, 4; "arm," 5; ribs, 1; scapula, 1; ilium, 1.

The gross results of the answers regarding the tissues in which the swelling occurred give: swelling in soft tissues, 97; swelling, subperiosteal, 114; swelling in both situations, 16.

In 69 cases the swollen parts were reddened also. It is stated that there was no redness in 121. A more general swelling, to be classified rather as edema, is described in 68 cases and stated to be absent in 98.

In regard to the swelling or protrusion of one or both eyes which has been described by writers, the symptom is said to have been absent in 110 cases and is reported present in 49. In nine of these swelling only is mentioned, in 18 protrusion only, and in 22 both are referred to.

Gums. — The condition of the gums and mouth is one of extreme interest. In 16 cases it is distinctly stated that the gums were entirely unaffected, while in 313 they were diseased. The degree of involvement varies from slight swelling to great sponginess and even ulceration. The degree and form of the affection in the cases suitable for study may be seen in the following table:

Swelling: absent, 14; present, 293.
Sponginess: absent, 27; present, 249.
Discoloration: absent, 23; present, 259.
Bleeding: absent, 64; present, 188.
Ulceration: absent, 101; present, 91.

The relation of the affection of the gums to the presence of teeth is of much interest. In nearly all the cases of scurvy in this report teeth were present, but what influence this has is not quite clear, since experience teaches that curiously it is usually the gums of the upper jaw which are most affected, although the lower teeth naturally are the first cut. Statistics on the portion of the gums involved were not furnished sufficiently to allow of conclusions; but regarding the teeth it is to be noted that of 359 cases suitable for comparison, teeth had already appeared in 314 instances, that is, 87.5 per cent.; while in only 45 cases, that is, 12.5 per cent., were there no teeth. In studying more carefully these 45 cases of scurvy without teeth, we may make the following analysis:

No teeth: gums normal, 21 cases.
No teeth: gums affected, 24 cases.

The conditions present in the latter group were as follows:

Swelling, 19 cases; sponginess, 14 cases; bleeding, 5 cases; discoloration, 17 cases; ulceration, 4 cases.

This is a proof that affection of the gums may occur equally well when there are no teeth as when teeth have developed. The fact that in the great majority of cases of infantile scurvy the presence of teeth and the affection of the gums is associated depends merely on the fact that the disease generally develops at an age when teeth naturally have been cut.

Cutaneous Hemorrhages. — These have occurred with frequency in the cases reported. Accurate data are given in 353 cases. Of these, cutaneous hemorrhage is reported present in 182 and absent in 171. There is much doubt about the accuracy of the writers in their classification of the hemorrhages according to size, and to the proper use by them of the descriptive names employed, inasmuch as the question on this point did not specify clearly. In 99 instances the presence of "ecchymoses" is mentioned. In 83 "purpuric eruption" is reported and in 37 "petechiæ." In 13 the nature of the lesion is not specified.

Hemorrhage from Mucous Membranes. — Data are available in 361 cases. Of these there were no hemorrhages from any mucous membrane in 196, while in 164 they occurred. In 93 cases there was hemorrhage from the mouth. This includes the cases where bleeding from the gums is described by writers. In 33 cases there was bleeding from the nose; in 2 from the stomach, and in 37 from the bowels. Cases of hematuria are not included here, and will be referred to later.

Fractures. — Fractures in infantile scurvy are usually separations of the epiphyses merely. Even this would seem to be rare, for fracture of any kind is mentioned in only 9 of our cases. In 342 it is distinctly stated to have been absent, and in the remaining the question is not answered.

Fever. — Probably in the majority of the cases of the disease upon which this report is based no temperature record has been made. In 93 cases it is stated that there was no fever; in 182 it was present and in the remaining no answer is given. In the cases where present it is described as slight in 116 instances, moderate in 23, high in 8, and irregular in 6. Clearly, fever is not a prominent symptom of the disease, and probably often, when present, depends on accidental causes.

Bowel Movements. — The following conditions are mentioned: bowels regular, 74; bowels irregular, 15; constipation, 126; diarrhea, 65; bloody diarrhea, 12.

Urine. — Judging from the number of instances in which no answers have been returned, no examination of the urine has been made in most of the cases. It is reported as examined for albumin in 163 cases; in 33 of these albuminuria is reported and in 130 it was absent. Tube casts were present in 13 instances, absent in 13, and no observation reported in the others.

Properly speaking the occurrence of hematuria should be discussed under the title of hemorrhage. It is mentioned as present in 22 cases only. Of other abnormal conditions of the urine the following may be mentioned: Urine very acid, 1; urine scanty, 9; urine suppressed, 1; urine increased in quantity, 3; glycosuria, 1; hemoglobinuria, 1; pus (from cystitis), 1; phosphates increased, 1; chlorides increased, 1.

Anemia, Malnutrition. — These conditions, already referred to as often the earliest symptoms of infantile scurvy, may have been the first evidences of the disease in many of the cases on which this report is based. In other cases they must be regarded as complicating affections only. Answers are not full enough to allow of satisfactory conclusions on this point.

Anemia is said to have been present in 254 cases, as follows: anemia present (without specifying degree), 47; slight, 66; moderate, 32; marked, 109.

Blood examinations were made in 15 cases, and the conditions noted as follows: The percentage of hemoglobin was much reduced in all the cases, 8 in number, in which an examination was made, some being as low as 35 per cent. Of the seven cases in which the red blood corpuscles were counted, all showed a reduction except 2. In these 2 the number was normal or nearly so, but the hemogloblin was 50 and 35 per cent., respectively. Leucocytosis was present in 5 cases. Poikilocytosis in 2. In only one instance was there a differential count of the leucocytes made.

Of 217 cases in which the question is answered, emaciation is recorded in 167 and is said to have been absent in 50.

Malnutrition was observed in 178 cases out of 216, in which replies were made as follows; malnutrition present (without specifying degree), 108; slight, 20; moderate, 7; marked, 43.

Rickets. — Infantile scurvy has so often been described as "scurvy rickets" and "acute rickets," that the investigation of the actual relationship of the two diseases was one of the matters to which the committee directed especial attention. The questions upon the circular read as follows: (*a*) "Any symptoms of rickets present? (*b*) Slight or well marked? (*c*) What relation in time of development did they bear to the scurvy?" Satisfactory answers were received in 340 cases; in 152 of these (45 per cent.) there were symptoms of rickets present, slight in 72, marked in 64, and the degree not mentioned in 16. In the remaining cases (55 per cent.) rickets is definitely stated to have been absent. With regard to the relation in time of development, it is stated in 50 cases that the rickets was first present; in 14 that it developed with the scurvy, and in 2 after it. There does not seem to be evidence as far as this investigation teaches that the association of rickets and scurvy is at all intimate. Very possibly the same defect in diet which produced the one produced the other also, but the rapid recovery under treatment which the scurvy underwent did not apply to the rickets. This seems to indicate only accidental association of the two diseases; certainly not any causal relation between them.

Other Complicating Conditions. — A variety of affections are mentioned complicating scurvy in a number of cases as follows:

Bronchitis, 5; cretinism, 1; enlargement of inguinal glands, 1; "cerebral symptoms," 1; convulsions, 1; pneumonia, 2; boils, 1; irritability, 1; vomiting, 4; eczema, 2; enuresis, 1; sweating of the head, 1; tympanites, 1; caput medusæ, 1; diaphoresis, 1; pertussis, 2; insomnia, 1; anorexia, 2; post nasal discharge, 1; measles, 1; restlessness, 1; phimosis, 1; indigestion, 2; laryngismus stridulus, 1; cystitis, 1.

(To be continued.)

MAJOR AMPUTATIONS AT THE MASSACHUSETTS GENERAL HOSPITAL.

A Study of the Mortality from 1822 to 1896.

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The major amputations done at the Massachusetts General Hospital from 1822 to 1870 were compiled by Dr. James R. Chadwick in elaborate and carefully prepared tables, and were published in May, 1871.

It was found that during the first period, the preantiseptic period, 699 amputations of the limbs had been done. The mortality percentage for this period has been recorded in the table following:

Mortality Percentages for the First Period, 1822-1870.

1. Amputation at the Shoulder-Joint.	
Traumatic, primary	53.33
Pathological	27.27
2. Amputation of the Arm.	
Traumatic, primary	19.44
Traumatic, secondary	....
Pathological	12.50
3. Amputation of the Forearm.	
Traumatic, primary	24.13
Traumatic, secondary	....
Pathological	14.81
4. Amputation of the Thigh.	
Traumatic, primary	42.37
Traumatic, secondary	60.00
Pathological	20.98
5. Amputation at the Knee-Joint.	
Traumatic, primary	60.00
Traumatic, secondary	....
Pathological	36.36
6. Amputation of the Leg.	
Traumatic, primary	34.37
Traumatic, secondary	36.41
Pathological	12.60

At the Massachusetts General Hospital, between the years 1870 and 1890, the second period, for a space of twenty years 657 major amputations have been performed.

Through imperfections in the records two cases are not complete enough to include in this report.

The anatomical groups of cases are subdivided into those cases operated upon for disease and for traumatism, that is, pathological and traumatic groups, and this last group is further divided into primary and secondary classes, according as the amputation was done within or after the twenty-four hours immediately following the accident.

After a careful analysis of these groups of cases, I have determined the average mortality in each, and the causes of death in so far as the records would allow.

There was one amputation at the hip-joint during this period, with recovery. There has been one amputation at the elbow-joint, which died. There have been four amputations at the ankle-joint and four amputations at the wrist-joint, with no mortality. There have been 38 cases of partial amputation of the foot. There have been 77 amputations of fingers and toes.

These cases mentioned above are not included in the estimates of mortality of the major amputations given below.

AMPUTATIONS AT THE SHOULDER-JOINT.

Traumatic, Primary. — Recovered, 7 cases; died, 7; total, 14. Mortality, 50 per cent. Causes of death: from shock, 6 cases; internal hemorrhage, 1. The accidents necessitating these amputations were crushes, which in almost every instance caused extensive injury to the parts adjacent to the shoulder and arm; hence the great shock, which caused death.

Pathological. — Recovered, 3 cases; died, 0; total, 3.

AMPUTATIONS OF THE UPPER ARM.

Traumatic, Primary. — Recovered, 36 cases; died, 5; total, 41. Mortality, 12.19 per cent. Causes of death: from shock, 4 cases; hemorrhage, 1.

Pathological. — Recovered, 26 cases; died, 5; total, 31. Mortality, 16.12 per cent. Causes of death: from shock, 3 cases; record incomplete, 2.

AMPUTATIONS OF THE FOREARM.

Traumatic, Primary. — Recovered, 37 cases; died, 11; total, 48. Mortality, 22.99 per cent. Causes of death: from shock, 5 cases; secondary hemorrhage, 2; ether, 1 (the autopsy showed no lesion to account for death); sepsis, 2; fracture of base of the skull, 1.

Pathological. — Recovered, 22 cases; died, 3; total, 25. Mortality, 14 per cent. Causes of death: tetanus, 2 cases; uremia, 1.

AMPUTATIONS OF THE LEG.

Traumatic, Primary. — Recovered, 86 cases; died, 33; total, 119. Mortality, 27.73 per cent. Causes of death: from delirium tremens, 1 case; secondary hemorrhage, 1 case in 1877; fat embolus, 1; internal injuries, 1; carbolic-acid poisoning, 1; shock, 17; sepsis, 11 (two of these cases became septic from gangrene of the part. Eighty-eight of these cases were railroad accidents, and of these 88 cases, 23 died.

Traumatic, Secondary. — Recovered, 22 cases; died, 6; total, 28. Mortality, 21.43 per cent. Causes of death: from sepsis 4 cases; shock, 2.

Pathological. — Recovered, 100 cases; died, 16; total, 116. Mortality, 13.78 per cent. Six of these deaths occurred previous to 1879, and were due to sepsis. Seven of these deaths occurred in elderly people, the amputation being done in five cases for senile gangrene, in two cases for traumatic gangrene. One death was due to general tuberculosis; one death was due to exhaustion, four days after the operation; one death was due to pneumonia.

AMPUTATIONS AT THE KNEE-JOINT.

Pathological. — Recovered, 6 cases; died, 6; total, 12. Mortality, 50 per cent. Two deaths were from sepsis, prior to 1873. One death in 1879 was due to carbolic-acid poisoning. One death was due to tetanus, 1871. One death, the patient did not recover from ether, 1879. One death from secondary hemorrhage, 1872.

Traumatic, Primary. — Recovered, 4 cases; died, 6; total, 10. Mortality, 60 per cent. Causes of death: from sepsis, 2 cases; carbolic-acid poisoning, 1 case in 1879; tetanus, 1; ether, 1; secondary hemorrhage, 1.

Traumatic, Secondary. — Recovered, 10 cases; died, 12; total, 22. Mortality, 54.54 per cent.

AMPUTATIONS OF THE THIGH.

Traumatic, Primary. — Recovered, 32 cases; died, 29; total, 61. Mortality, 47.54 per cent. Forty-six of these cases were railroad accidents, of which 21 died and 25 recovered. Of the 29 deaths, 24 cases died of shock, 4 of sepsis, 1 of pneumonia.

Traumatic, Secondary. — Recovered, 5 cases; died, 2; total, 7. Mortality, 28.5 per cent. The injuries necessitating amputation of the thigh were so severe as to cause often multiple lesions. The combination of all these lesions caused great shock producing death in many cases.

Pathological. — Recovered, 56 cases; died, 17; total, 73. Mortality, 23.28 per cent. Eight deaths due to sepsis; 6 to shock; 2 to carbolic-acid poisoning; 1 to secondary hemorrhage.

MORTALITY PERCENTAGES FOR THE SECOND PERIOD, 1870–1890.

1. Amputation at the Shoulder-Joint.	
Traumatic, primary	50.
Pathological	0.
2. Amputation of the Arm.	
Traumatic, primary	12.19
Traumatic, secondary	....
Pathological	16.12
3. Amputation of the Forearm.	
Traumatic, primary	22.99
Traumatic, secondary	....
Pathological	14.00
4. Amputation of the Thigh.	
Traumatic, primary	47.54
Traumatic, secondary	28.05
Pathological	23.28
5. Amputation at the Knee-Joint.	
Traumatic, primary	60.00
Traumatic, secondary	....
Pathological	50.00
6. Amputation of the Leg.	
Traumatic, primary	27.73
Traumatic, secondary	21.43
Pathological	13.78

During the years from January, 1885, to December, 1896, the third period, there have been performed 670 amputations.

AMPUTATIONS AT THE SHOULDER-JOINT.

Traumatic, Primary. — Recovered, 13 cases; died, 6; total, 19. Mortality, 31.57 per cent. These cases all died from shock a few hours after amputation.

Traumatic, Secondary. — One case which died of shock.

Pathological. — Recovered, 2 cases; died, none. One of these cases was a sarcoma of the forearm and one case sarcoma of the humerus.

AMPUTATIONS OF THE UPPER ARM.

Traumatic, Primary. — Recovered, 42 cases; died, 12; total, 54. Mortality, 22.22 per cent.

Traumatic, Secondary. — Recovered, 9 cases; died, 2; total, 11. Mortality, 18.18 per cent.

Pathological. — Recovered, 16 cases; died, 2; total, 18. Mortality, 11.11 per cent. The cause of death in one case was sepsis. The diseases for which amputation was done were: Sarcoma, 6 cases; tuberculosis, 2; painful stump, 3 (one died); epithelioma, 2 (one died); paralysis, 2; gangrene, 3; total of 18 cases, 2 deaths.

AMPUTATIONS OF THE FOREARM.

Traumatic, Primary. — Recovered, 47 cases; died, 3; total, 50. Mortality, 6 per cent. The deaths were due to shock.

Traumatic, Secondary. — Recovered, 4 cases; total, 4.

Pathological. — Recovered, 32 cases; died, 3; total, 35. Mortality, 8.57 per cent. The diseases for which amputation was done were: sarcoma, 2 cases; carcinoma, 8 (1 died from exhaustion); tuberculosis, 14 (1 died from exhaustion); painful stump, 4; septic hand, 3; gangrene (traumatic and diabetic), 3; tetanus, 1 (died); total, 35; 3 deaths.

AMPUTATIONS OF THE LEG.

Traumatic, Primary. — Recovered, 158 cases; died, 25; total, 183. Mortality, 13.66 per cent.

Traumatic, Secondary. — Recovered, 13 cases; died, 1; total, 14. Mortality, 7.14 per cent.

Pathological. — Recovered, 102 cases; died, 16; total, 118. Mortality, 13.55 per cent. Diseases for which amputation was done and the cases died: compound fracture of the leg, 1 case; carcinoma of leg, 1; gangrene (traumatic 5, diabetic 4, senile 5), 14; total deaths, 16 cases.

AMPUTATIONS AT THE KNEE-JOINT.

Traumatic, Primary. — Recovered, 1 case; died, 1; total, 2. Mortality, 50 per cent.

Pathological. — Recovered, 3 cases. Diseases: elephantiasis, carcinoma, traumatic gangrene, one case each.

AMPUTATIONS OF THE THIGH.

Traumatic, Primary. — Recovered, 46 cases; died, 25; total, 71. Mortality, 35.21 per cent.

Traumatic, Secondary. — Recovered, 5 cases; died, 3; total, 8. Mortality, 37 per cent.

Pathological. — Recovered, 63 cases; died, 8; total, 71. Mortality, 17.55 per cent.

Diseases for which amputation was done: elephantiasis, painful stump, enchondroma, ununited fracture, cicatricial contraction, ulcer of the leg, carcinoma of leg, gangrene, diseases of hip, osteomyelites, sarcoma of tibia, sarcoma of femur, tubercular knee.

AMPUTATIONS AT THE HIP-JOINT.

Tuberculosis, 2 cases (1 recovered, 1 died); myxoma, 1; ostemalacia, 1; traumatic, primary, 2 (died). Total hip amptuation 6 (3 recovered, 3 died).

SUMMARY OF THIRD PERIOD.

Shoulder-Joint	22 cases.
Upper Arm	83 “
Forearm	89 “
Leg	315 “
Knee-Joint	5 “
Thigh	150 “
Hip	6 “
Grand total,	670 cases.

MORTALITY PERCENTAGES FOR THE THIRD PERIOD, 1885–1896.

1. Amputation of the Shoulder-Joint.	
Traumatic, primary	31.57
Pathological	...
2. Amputation of the Arm.	
Traumatic, primary	22.22
Traumatic, secondary	18.18
Pathological	11.11
3. Amputation of the Forearm.	
Traumatic, primary	6.00
Traumatic, secondary	0.00
Pathological	8.57
4. Amputation of the Thigh.	
Traumatic, primary	35.21
Traumatic, secondary	37.00
Pathological	17.55
5. Amputation at the Knee-Joint.	
Traumatic, primary	50.00
Pathological	0.00
6. Amputation of the Leg.	
Traumatic, primary	13.66
Traumatic, secondary	7.14
Pathological	13.55

(1) The period from the founding of the hospital to 1870, represents the amputations done before antiseptics were generally used.

(2) The period from 1870 to 1890 represents the operations done while antiseptics were being introduced and had become established.

(3) The period from 1885 to 1896 represents the true antiseptic and aseptic period. The total amputations from the opening of the hospital cannot be estimated, for periods 2 and 3 overlap.

A glance at the following table, comparing the first and third periods, is very instructive. For some reason traumatic primary amputations of the arm present a higher mortality in the later period than in the first period. This is true of pathological amputations of the leg.

Table Comparing Mortality Percentages of Major Amputations done at the Massachusetts General Hospital.

	1821–1870	1870–1890	1885–1896
1. Amputation at the Shoulder-Joint.			
Traumatic, primary	53.33	50.00	31.57
Pathological	27.27	00.00	00.00
2. Amputation of the Arm.			
Traumatic, primary	19.44	12.19	22.22
Traumatic, secondary	....	...	18.18
Pathological	12.50	16.12	11.11
3. Amputation of the Forearm.			
Traumatic, primary	24.13	22.99	6.00
Traumatic, secondary	....	....	0.00
Pathological	14.81	14.00	8.57
4. Amputation of the Thigh.			
Traumatic, primary	42.37	47.54	35.21
Traumatic, secondary	60.00	28.50	37.00
Pathological	20.98	23.28	17.55
5. Amputation at the Knee-Joint.			
Traumatic, primary	60.00	60.00	50.00
Pathological	36.36	50.00	00.00
6. Amputation of the Leg.			
Traumatic, primary	34.37	27.73	13.66
Traumatic, secondary	36.41	21.43	7.14
Pathological	12.60	13.78	13.55

All other amputations show a noticeable diminution in the mortality percentage.

The factors contributing to the diminution in the mortality-rate are probably several: the strict adherence to antiseptic and aseptic surgical principles in operating; perfection in the technique of operating; an intelligent care of the patient from the time of the receipt of the injury; the absence of primary hemorrhage; the greater care in the first dressing exercised by the general practitioner who sees and sends many of these hospital cases to the hospital. All these factors play an important causative part when considered collectively in diminishing the mortality following major amputation.

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CÆSAREAN SECTION *VS.* SYMPHYSEOTOMY.[1]

BY G. H. WASHBURN, M.D.

It is interesting to take a glance at the history of these two operations, and note the improved results with the progress of aseptic surgery.

Cæsarean section was first done anciently, by the Romans, on the dead mother to save the child. It was not till 1500 that the operation is known to have been performed on the living subject. Then it was done by a German sow gelder on his wife. She had been in labor four days and was attended, we are told, by thirteen midwives and several lithotomists. No progress being made, the husband, after conference with his wife, went to the town fathers to secure their permission to operate. It was granted, and having sharpened the carving knife he invited the timid to withdraw. Most of the midwives retired. He then split open his spouse and delivered the baby. We are not told the subsequent treatment, but both mother and child recovered. This happy result, however, does not seem to have encouraged others, for it was thirty years or more before we have any record of a second.

The practice at first was to leave the uterus without any suture. As a result, deaths from hemorrhage were frequent, as well as deaths from sepsis.

The first real advance in operating was made by Porro, in 1876. He removed this source of danger by amputating the uterus and leaving the stump in the abdominal wound. The convalescence was very tedious, but there was no hemorrhage and less danger of sepsis.

It remained for Sänger, of Leipsic, in 1882, to inaugurate the method, which in its perfected form is used to-day. By this method there is no mutilation of the patient, there is no protracted convalescence, there is much less shock from the operation itself, and the mortality of mothers and children is now reduced to a very small percentage.

The first symphyseotomy on the living subject was done about a hundred and twenty years ago. Naples and Paris, Ferrara and Sigault, both claim the honor. Sigault's patient and child both lived, but the mother suffered for years from a vesico-vaginal fistula. Four succeeding operations were not as satisfactory in results, all the children and one mother dying.

From 1777 to 1800 the operation was done 34 times, nineteen of these being in France. The mortality, however, was so very great that the operation was abandoned. Its revival is due to Morisani, in Naples, in 1879. His limit of size of pelvis is two and five-eighths inches obstetrical conjugate. Below that, Cæsarean section. The operation is to be done at full term after labor has begun and dilatation well advanced.

The general statistics of the operation in the past ten years show a mortality of 14 per cent. of mothers and about 26 per cent. of children. If, however, we should accept Morisani's figures for his latter operations, we should have only 3.5 per cent. of maternal and 5.5 per cent. child mortality.

The dangers of symphyseotomy are hemorrhage; tears of urethra, bladder or vagina; septic infection; inflammation of joint; or failure of union. The danger in a Cæsarean section is from sepsis (and that is very small), and possibility of ventral hernia.

Statistics show a much smaller mortality for Cæsarean section, for both mother and child, than in symphyseotomy, barring the latest statistics of Morisani; and I presume that selected results in some one man's practice would be even better for Cæsarean section.

The difficulty of performing the operation is to be considered.

In Cæsarean section there are only soft parts to go through, all parts that are cut are exposed to view and any hemorrhage is easy to control. The operation is quickly finished. Few instruments are needed.

In symphyseotomy much of the cut part is out of sight. After the joint is severed, and the full three inches of separation of bone secured, you have still a difficult task before you to deliver the baby. Obstetrical forceps are usually needed, and serious tears of the soft parts are likely to result. The tissues severed are some of them those that are slow to unite. Convalescence is slow and tedious, the patient being obliged to lie in a sort of trough arrangement to insure constant approximation of the two parts of the symphysis.

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[1] Read before the Obstetrical Section of the Suffolk District Medical Society, March 23, 1898.

Special instruments are needed; for example, Galbiati knife and metal catheter. Care has to be exercised to prevent too great separation of pubic bone for fear of injury to sacro-iliac joint.

It has been urged that symphyseotomy is the operation to choose when labor has been protracted and many fruitless efforts made to deliver the child, but now we find the same precautions urged as for Cæsarean section. It should be an elective operation, done before there has been any manipulation of uterus or child. Only thus can the best results be obtained.

Much of the prejudice against the Cæsarean operation is owing to the statistics of the operation in former years. At the present day, with modern methods of abdominal operation, the risks are very small. The mortality percentage is five per cent. or less.

It is not necessary to have perfect surroundings in order to get good results, although, of course, the chances are better where the elective operation is done with proper facilities.

During the past summer I was called upon to do two Cæsarean operations in country tenements (reported at Boston Obstetrical Society). One of these cases was done at night by the light of one kerosene lamp and a candle, in a small crowded room, on a board stretched between two trunks and covered with a boiled sheet. Both cases had been in labor more than twenty-four hours, both had had more or less manipulation; both mothers recovered and both children lived.

The result was due to several things. The mothers were in fair condition. The scrubbing of abdomen was carefully done with soap and water and nail-brush, followed by permanganate and oxalic solutions, and these again by alcohol, ether and corrosive-sublimate solution. Instruments and hands prepared with the same scrupulous care. The sheets and towels used were boiled half an hour in the wash-boiler. The uterus was lifted out of the peritoneal cavity and carefully packed around with hot, sterile towels before opening. Placenta and membranes carefully stripped off and the inside of the uterus freely washed down through the vagina with very hot lysol solution. The uterus thoroughly sutured in two layers: a deep one through the muscular portion, the stitches about an inch apart; in superficial layer, a continuous suture through the scro-serous portion, making an absolutely tight closure. The uterus fully cleansed before being put back into the abdominal cavity. Immediate contraction assured by a dose of ergot hypodermically.

I may say here that this can be done without fear if the proper preparation of ergot is used. I have for some years used Tanret's solution of ergotinin, about five minims the dose. Recently I have been using a less expensive and more conveniently arranged preparation, ergot aseptic, put up by Parke, Davis & Co. in hermetically sealed half-drachm vials. The strength being double that of the ordinary fluid extract, each vial represents a dose. I have had no ergot abscesses from the use of this preparation, and it has worked very well.

The long abdominal scar is certainly a drawback; but both these women returned to hard work without any inconvenience from it. The convalescence was comfortable, and it was hard work to make them stay in bed long enough.

To my mind there is no more risk from sepsis in a Cæsarean section done with these precautions, than in a symphyseotomy.

To sum up:

(1) The operation of Cæsarean section is easier to perform.

(2) It is safer as far as hemorrhage goes or injury of adjacent parts, for example, tearing of urethra, vagina, etc.; *just as safe*, as far as sepsis is concerned (I refer of course to skilled operators); it has a less tedious convalescence, with no fear of a loose pelvis, but there is slight fear of ventral hernia.

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Clinical Department.

OMENTAL HERNIA OF THE LEFT LABIUM MAJUS; OPERATION, RECOVERY.

SERVICE OF DR. F. W. JOHNSON.
REPORTED BY DR. J. M. CROWLEY,
First Assistant, St. Elizabeth's Hospital.

"THE liabia majora of the female are analogous to the scrotum of the male; and the round ligaments, which are analogous to the spermatic cords, do not end in the mons veneris, but, passing downwards, enter the labia majora and distribute their filaments within the dartoid sacs, which extend like glove-fingers, downwards towards the fourchette."

Hernia of the labium major is sometimes described as inguinal labial hernia and consists of the passage of intestine, omentum, ovary, Fallopian tube, or uterus by the side of the round ligament into the labium major. Inguinal hernia, though less common in women than femoral, is not rare.

There is another form which is exceedingly rare. "It may occur in two ways: Firstly, the hernia may descend in front of the ligamentum latum, distending the vesiço-uterine fold of peritoneum, and passing down between the bladder and uterus along the vagina into the labium (vagino-labial hernia); or it may descend behind the ligamentum latum between the rectum and vagina, either into the labium or perineum.

"The diagnosis is of great importance, posterior labial hernia being especially liable to be mistaken for cysts of Bartholini's glands."

Winckle found six cases of labial hernia in 5,600 patients examined by him.

Strangulation of the intestine or omentum with the characteristic signs may occur.

Diagnosis. — If the patient bear down, the size of the tumor will often be increased. Often the hernia can be readily reduced by placing the patient in the knee-chest position, returning as soon as she assumes the upright position.

The detection of impulse upon coughing, and resonance on percussion, and the possibility of diminishing the volume of the tumor by taxis and position, aid very much in making a diagnosis.

Hydrocele of the round ligament which has extended into the labium is called a hydrocele of the labium, and presents a fluctuating tumor without redness or tenderness or other indications of inflammatory trouble and is dull on percussion and of translucent appearance.

The contents of a hydrocele cannot be returned into the abdominal cavity.

Treatment. — After reducing the hernia, a truss may be worn, or, as in this case, an operation can be done to prevent any return of the hernia. When the hernia is strangulated, an incision should be made down to the inguinal canal, and, if necessary, this incision can be continued down into the labium until the hernia is freed.

K. McG., twenty-five, single, entered the St. Elizabeth's Hospital, February, 1898. Always well and strong.

Present illness. About three years ago, while reaching up high to dust a shelf, felt and heard something give way, and felt a sharp pain in the left inguinal region. Four or five weeks later she noticed a small bunch about the size of a filbert in the left labium majus. It was soft, and could easily be "pushed back" so as not to be felt. It would, however, soon return. It slowly increased in size, until three weeks ago when it was as large as an English walnut.

During these three years she has had bearing down pains in her back and over her *right* side. These pains were increased by standing. Her chief comptaints were pain in the back and side. The bowels were constipated.

Examination disclosed a chronic endometritis and retroflexion. No tumor was found in the labium.

February 8th the uterus was curetted, and an Alexander-Adams operation was done. On reaching the external abdominal ring, the inguinal canal was found much dilated, and in it was a portion of the adherent omentum. The little finger could easily be run down into the labium in the canal made by the omentum. The adhesions were broken up, and after slitting up the aponeurosis, the omentum was tied off at the internal abdominal ring and dropped back into the abdominal cavity. The round ligament was then stripped of peritoneum, the sac ligated and the ligament drawn out. The ligament was fastened to the internal ring, cut off and the fascia sewed over the ring and stump. The inguinal canal was then obliterated with interrupted sutures. The round ligament on the right side was also shortened.

Convalescence was uninterrupted.

A CASE OF EXTRA-UTERINE PREGNANCY.[1]

BY F. W. JOHNSON, M.D., BOSTON.

The patient was sent into the St. Elizabeth's Hospital, Saturday night, February 26th, by Dr. C. M. Whitney, as an emergency case.

After hearing the history of the case through the telephone from my first assistant, I told him I thought it was a case of extra-uterine pregnancy, with rupture. After getting to the hospital and learning more of the history of the case, it seemed to me that tumor with twisted pedicle ought also to be considered.

The pulse was 120 and the temperature 100.5° F. Constant nausea with occasional vomiting was present. The bowels were constipated. The face was pale and suggested hemorrhage. The abdomen was enormously distended. On palpation, a tumor was found extending above the pubes and towards the right half-way to the umbilicus; this was found at the operation to be blood-clot. On the left was another tumor, *very* sensitive to palpation and the seat of constant pain. Above these two masses were the intestines, very much distended. The abdomen was larger than if she had been pregnant at term.

The vagina felt soft and velvety, just as it usually does during pregnancy. By vagina the two masses could be made out; and what was thought to be the uterus, pushed back and to the right, was found at the operation to be blood clot filling the Douglas cul-de-sac. Stimulants were given and turpentine stupes applied. A saturated solution of mag. sulph. was given in small doses.

Sunday (next day) the pulse and temperature had dropped, and she was feeling more comfortable. Still she looked like a very sick woman. During this day there was free catharsis, with some diminution in the size of the abdomen.

Monday morning Drs. W. L. Burrage and Sarah E. Palmer saw the patient with me. The temperature and pulse were about the same as on the previous day, but the nausea and vomiting had ceased. We could come to no definite conclusion, but thought the difficulty lay between extra-uterine pregnancy with rupture and commencing peritonitis, a tumor or tumors which were giving rise in some way to peritonitis, and systemic disturbance or a ruptured pus-tube. Whatever the cause, we agreed that her condition demanded immediate operation.

The pregnancy was found to have taken place in or near the fimbriated end of the left Fallopian tube. Running along the border of this tube, up into the left uterine horn, was this tumor which I show. About one quart and a pint of clotted and half-clotted blood was found in front of and behind the uterus, which was enlarged to about the size of a two months' pregnancy.

A mass as large as the fist was separated from slight adhesions behind the left broad ligament and from the Douglas cul-de-sac. This contained the fetus and placenta which I show.

Part of the left broad ligament, which formed part of the pedicle of this solid tumor, was clamped, cut, and sewed over and over with catgut. The abdominal cavity was washed out as thoroughly as the patient's condition would admit with normal salt solution. The right tube and ovary were not removed. They were normal, except for recent adhesions, which were separated. One twenty-fifth of a grain of strychnia was given subcutaneously three times; a quart of salt solution was put under the left breast; and a pint of salt solution was put in the abdominal cavity while the patient was on the table. No drainage was used. The foot of the bed was elevated eighteen inches.

The following is a brief history of the case as far as it relates to the ruptured extra-uterine pregnancy:

She is married, thirty-eight years of age. She was married when nineteen years of age and had a child a year later. Never pregnant again until this time. Her first husband died three years ago. One year ago she married her present husband.

Menstruation began at twelve. Always regular until December, 1897. Unwell at the regular time in December, but flowed less that usual. In January, at the time she should have been unwell, there was quite a severe hemorrhage from the rectum.

Tuesday, February 22d, she first had pain in the left ovarian region. This increased until Thursday night, the 24th, when it became excruciating and was followed by collapse.

Dr. Whitney found her Friday morning in a state of collapse, and as soon as practicable sent her into the hospital. Two weeks previous to her present illness, Dr. Whitney had found the solid tumor in the left side.

The pulse kept at about 140 during the whole operation.

She made a good recovery and has gone home.

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[1] Reported at the meeting of the Obstetrical Section of the Suffolk District Medical Society, March 23, 1898.

Dr. M. H. Bailey's report: "The macroscopic examination of the specimen shows a ruptured tube (which had contained a fetus of about three months) apparently attached to the uterus via the surface or deeper portion of a myo-fibroma, about the size of a large cocoanut. Everything was free without adhesions, the tumor being attached to the uterus by a small pedicle. The tumor, on section, shows the characteristics of a multiple edematous myo-fibroma, with hemorrhages in places. The ovary located between the tumor and the fetal expansion of the tube. The microscopic examination establishes the above diagnosis, except that no tube structure was found."

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Medical Progress.

ORTHOPEDIC REPORT.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

FORCIBLE CORRECTION OF THE DEFORMITY IN POTT'S DISEASE.

THIS has been occasionally attempted in the pre-anesthetic days, but Chipault within a few years recommended forcible rectification of deformity from caries in a child placed under anesthesia.[1] He finds, however, that a recurrence of the curve takes place, and advises wiring the spinous processes together as recommended by Hadea, or the use of a clamp resembling Malgaigne's hooks. Relapses have been reported by others.[2]

Calot claims unusual success in 204 cases, and no deaths at the time of the operation, though three deaths within three months.[3] He employs an unusual amount of force (40 to 80 kilogrammes), with forcible traction on the head, arms, feet, and correcting pressure upon the hump, the child being placed face downwards upon a resisting surface supporting the shoulders and hips; and in two cases he made a cuneiform resection of the projecting portion of the vertebræ.

Menard [4] and Regnault [5] claim that repair to a straightened spine may take place at other portions than the gap left after straightening, and Ducroquent shows radiographs of repairs of the gap.

Calot's favorable results have not been equalled by other surgeons.

Menard [7] reports death from rupture of an abscess.

Lorenz [8] reports the production of paralysis by forcible straightening, and Malherbe the fracture of a spine.[9]

Jonnesco [10] reports three deaths in thirteen reductions, one attributed to chloroform, and C. Willems, of Ghent, speaks of the dangers of chloroform in this procedure.[11]

Jonnesco,[12] instead of manual extension by assistants used by Calot, has used mechanical force by pulleys. Jeannel and Vulpius [13] also favor pulley traction. The amount of tension used has never been over 80 kilogrammes, and is usually from 45 to 50, according to Jonnesco. He avoids thick padding, and uses the simple undershirt. He uses for a table four rigid bars, supported by legs, and on this are placed two padded blocks of wood, one of which is fixed near the end of the table, and the other is movable. For the traction, he uses a head sling made of linen, and fastened to a cross bar, which is attached by a rope to the wall. For the pelvic traction, he uses a binder, which fastens around the pelvis, and in all cases he uses a dynamometer to record the amount of pull.

Traction is made first without manual pressure; and it is found that under this, the knuckle rapidly diminishes, but does not disappear. Pressure is made then, with the hand of the surgeon, over the deformity, one assistant raising the lower limbs, and another supporting the lumbar vertebræ. Under this, he finds the deformity can be rapidly corrected. Plaster is applied, taking in nearly the whole trunk, pelvis, and most of the head, using as little padding as possible. This is not done during etherization, as he considers this unadvisable.

He considers the indications for these are recent non-anchylosed cases, but has reduced anchylosed cases in adults without much difficulty. He does not think that as yet the limitations of the operation can be definitely fixed, but gives the following conclusions:

(1) Rapid reduction at one sitting is an excellent treatment for Pott's curvature.

(2) Direct pressure must be applied to the deformity, while extension and counter-extension are being used.

(3) Traction must be applied by means of pulleys.

(4) Traction ought be applied to the head and pelvis, and not to the superior extremities, as advised by Jeannel.

(5) As a rule, 45 to 50 kilogrammes of traction are all that should be used. In exceptional cases 80 kilogrammes may be required.

(6) Chloroform is dangerous, and ought only to be used during the operation, not while the dressings are being applied. In cases of recent deformity without anchylosis it may be possible to omit all anesthetics.

(7) With the exception of the dangers of anesthetics and broncho-pneumonia, the post-operative accidents are of but little importance.

(8) The method can be used in almost any case of kyphosis, but it gives the best results in recent cases in the young.

(9) All preliminary cutting operations are useless and dangerous.

Demicè [14] is opposed to this method, preferring more gradual means.

Monod [15] favors the procedure in early cases.

Pean has met with success in a severe case of five years' standing with paralysis, but thinks that subsequent fixation treatment for a long time is necessary.

Several instances of immediate recovery from paralysis are reported.

Jones and Tubby [16] report 11 cases, with partial rectification in five cases and complete in six.

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[1] Chipault: Mal de Pott, Paris, 1897, p. 2; Gaz. d'Hôp., 1897, 21, 197, 900; Poesse Méd. de Paris, 1897, 240.

[2] Vincent: Lyon Méd., 1897, 27, 323.

[3] Calot: Archives, Prov. de Chiv., 1897, vi, 65; Rev. de Ther. Méd. Chiv., 1897, lxiv, 573.

[4] Gaz. de Paris, 10, s. i, 231.

[5] Comptes Rendu de Soc. de Biol., 1897, 10, s. iv, 793.

[6] Twelfth International Congress, Section of Surgery.

[7] Gaz. Méd. de Paris, 1897, x, s. 1231.

[8] Deutsch. Med. Woch., 1897, 218.

[9] Ann. de Chir. et d' Ortho., July, 1897, 218.

[10] Gaz. d' Hôp., 1897, lxx, 656.

[11] Journal American Medical Association, 1897, p. 505.

[12] Tenth International Congress of Medicine at Moscow, August, 1897.

[13] Archiv. Povo. de Chir., 1897, vi, 383, and Münch. med. Woch., 1897, 36.

[14] Paris, Rurff et Cie, 1896.

[15] Bull de l'Academie de Méd. et Chir, Juni 8, 1897, p. 695.

[16] British Medical Journal.

Redard[17] recommends the operation for early cases; prefers to use narcosis.

Bilhaut[18] recommends the removal of projecting spines as a preliminary operation. Narcosis is employed. The method to be used in moderate cases. The plaster corset is to be split at the sides.

TREATMENT OF THE PARALYSIS OF POTT'S DISEASE BY OPERATION.

Diakonoff[19] describes this operation in three cases, two dying after the operation; in the third complete paralysis was present. An incision along the transverse processes of the second and third dorsal vertebræ was made. A pus cavity was discovered which connected with the spinal canal. Carious portions of bone were removed by curette and the spinal canal was reached. The dura was found intact. The cavity was drained and the wound sewed up. Twenty-three days after the operation, mobility of the paralyzed muscles was established, and a month later the patient was able to walk.

A CASE OF DISTORTION OF THE AORTA IN POTT'S DISEASE.

Dr. Thomas Dwight[20] gives a contribution to the deformity found in severe Pott's disease, which has already been described by Bouchacourt. The case was one of marked antro-posterior curve in the mid and lower dorsal region, with no sign outwardly of lateral deviation or twist of the column. The deformity of the aorta "resembled that of the fifth type described by Bouchacourt, or might be compared to a letter S lying on the side with the ends bent strongly back, so as to surround the prominence of the spine." The case is well illustrated and very accurately described, and is a distinct addition to the present knowledge of this, perhaps, rather rare deformity.

CUBITUS VALGUS AND CUBITUS VARUS.

Raffel[21] states that the deformities coexist most frequently with other rachitic lesions of the vertebral column, the pelvis, etc., with atrophy and arrested development of the skeleton. In general the deviation of the elbow is bilateral, and without doubt is developed in early infancy before the age of three years. According to Mikulicz it is exclusively seen in the curved forms of rickets, and is unnoticed in the midst of other accompanying deformities. It is certain that this is the case in a large majority of instances, but it is probable that the pathological attitude of the elbow can under exceptional conditions develop itself in second infancy or in adolescence. The deformity consists of an abnormal curvature of the humeral diaphysis. This is the only method of production as yet known of cubitus valgus; but this is not the case in cubitus varus, as there are anatomical specimens which prove that this may result from a curving of the diaphysis or an anomaly of the epiphysis. In some cases there is a double curve. The writer does not believe in the development of this deformity from muscular action. This, however, is the opinion held by Mikulicz and Nicoladoni in many instances.

GENU RECURVATUM.

Bilhaut[22] reports the case as congenital genu recurvatum, with absence of patella. The position of the patella showed a depression, and there was also a forward dislocation of the tibia. The leg was placed in the position of flexion, held by bandages. These were renewed every ten days for a while, and later the limb kept straight. Ten years afterwards the case was seen, and there was scarcely any trace of the original deformity.

The author claims that he regards this position of flexion the proper position in the treatment of this class of congenital deformity.

A STUDY OF THE CONGENITAL MALFORMATIONS OF THE KNEE.

Potel (Lille) has investigated 300 cases of congenital deformities of the knee-joint, and has classified them as follows: as defects of the femur, bifurcation of the lower epiphysis of the femur with alteration of the condyles, defects of the tibia, splitting of the upper epiphysis of the tibia, defects of the fibula, and defects of the tibia and fibula. These are chiefly cases of imperfect development. Distortions due to abnormalities of the muscles also occur, and among these are absence or atrophy of the patella with a backward curving at the knee, a lack of development of the quadriceps. If the defect takes place at the beginning of the third month of embryonic life, absence of the patella results; if after the third month, an atrophy of the patella or contracture of the quadriceps takes place which causes a genu recurvatum. A split of the patella, with a separate insertion of the vastus externus muscle, may take place. A congenital contracture of the flexor group may also take place, with a contracture of several of the muscles due to imperfect development of the embryonic nervous system. Abnormality of the ligaments may take place, with dislocation of the patella, genu valgum and genu varum, and also a dislocation at the knee-joint.

Little[23] reports three cases of absence or delayed development of the patella, and gives tables of 42 reported cases.

THE DISAPPEARANCE OF GENU VALGUM BY FLEXION.

Gerard[24] explains this phenomenon as attributable to several causes, chiefly in the movements at the knee and in the movements at the hip. In the movements of the knee there is a relaxation of the internal and external ligaments and an exaggeration of lateral movements. There is a diminution of the solidity of all the periarticular tissues. At the hip-joint the movements of external rotation and of abduction, which are made unconsciously, are influential in producing the change of the direction of the tibia.

SPONTANEOUS DISLOCATION OF THE HIP OCCURRING DURING THE COURSE OF ACUTE INFECTIOUS DISEASES.

Daniel N. Eisendrach[25] gives the report of an unusual case of this rather rare affection, and considers the different series of cases which have been reported. This accident in the course of acute diseases has been long recognized; first described by Lorinser in 1853.

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[17] International Congress, August 26, 1897.
[18] Annals of Surgery and Chir., July, 1897.
[19] Centralblatt für Kinderheilkund., 1896, p. 309.
[20] American Journal of Medical Sciences, January, 1897.
[21] Revue d'Orthopedie, 1897, No. 243.
[22] Ann. Chir. et Orth., September, 1897, p. 257.
[23] Lancet, September 25, 1897.
[24] Revue d'Orthopedie, March, 1897.
[25] Annals of Surgery, October, 1897, p. 448.

The early cases were reported first as having occurred in the course of typhoid, and later in scarlet fever. It has been pretty generally conceded that it has a mechanical origin, due to the stretching of a capsule by a large effusion, and that during some sudden movement the relaxed capsule allowed the dislocation of the joint. It was usually found after the recovery from the fever, and was supposed to have occurred some time during the acute condition attended by restlessness on the part of the patient. So far the cases have been reported as occurring either in typhoid fever, acute articular rheumatism or scarlet fever.

Franke, in an article upon the result of influenza upon bones and joints, has reported a case in which there was exudation in the ankle and knee, and this bears out the author's case. It was of a girl eleven years old, who was admitted to the hospital with a severe attack of influenza. During this attack she complained of severe pain in both hips. After recovery she walked with marked limp, which continued until her admission to the hospital five months later. At this time a diagnosis was made of spontaneous backward dislocation of the right femur occurring during an attack of influenza. A preliminary treatment was begun by the application of extension with the child in bed. Later, an operation was undertaken for the reduction of the dislocation, and the femur was found imbedded in fibrous tissues, adherent to the ileum; the two acetabula, true and false, formed a right angle with each other. There was but little left of the capsule, and this only upon the outer posterior aspect of the head. No ligamentum teres was seen. The true acetabulum was filled with inflammatory tissue, and after removing this, it was found that the cartilage was eroded in several places, but the joint cavity corresponded exactly to the size of the head, showing it to be a recent dislocation. There was no evidence of any tuberculosis. The head was brought into the acetabulum by traction, and the wound sutured. The case was one of special interest, as it enabled one to see the pathological result in a case of this sort soon after the original dislocation.

THE ETIOLOGY AND TREATMENT OF CONGENITAL DISLOCATION OF THE HIP-JOINT.

Heusner[26] summarizes the history of the various theories as to the origin of this deformity, without coming any nearer to a conclusion than previous writers, who, like Hippocrates, attributed the deformity to uterine pressure; or Malgaigne, who supposed that an early hydrops of the joint was the cause; or Dupuytren, who thought the femur had been placed in a position of exaggerated flexion; or Grawitz, who supposed a lack of proper development of the epiphysis; or Verneuil, who claimed that there was a paralysis of certain groups of muscles following birth, and who offered a prize of 3,000 francs for an undoubted case of genuine intra-uterine dislocation. Heusner, however, considers that true congential deformities have been proved, both clinically and in [illegible]

In regard to the treatment by the so-called bloodless method of reduction, the writer is of the opinion that sufficient experience has not been collected to enable us to determine as to the value of this method and the limits of its usefulness. He has devised apparatus for the use of considerable force for the purpose of the reduction of the deformity without incision. The apparatus consists of pulley traction in the long axis of the leg, with forced abduction and traction vertical to the direction of the leg, applied at the trochanter. Considerable force is used. He has discarded the use of plaster-of-Paris after the operation, except in unusual cases, though he applies stiffened bandages. As after-treatment, he uses an abduction apparatus.

CONGENITAL DEFECTS OF THE DIAPHYSIS OF THE FEMUR.

Lange[27] describes three cases of this unusual affection. The etiology is not known. An attempt at a diaphysis appears to be present, but the growth of it is hindered for some unknown reason. The treatment consists in arranging for as much use as can be made of the limb, and not in using it as the stump of an amputated thigh for the socket of an artificial limb, but as a support for the weight of the body.

FRACTURE OF NECK OF THE FEMUR IN CHILDHOOD.

Whitman[28] considers that the determining causes of the deformity of the neck are imperfect treatment, too early use of the limb during the stage of repair, and a sinking of the neck from the strain of locomotion. The writer claims that the statements usually made that fracture of the neck of the femur does not occur in childhood are erroneous.

METHODS OF DETECTING AND MEASURING ABDUCTION AND ADDUCTION OF THE THIGH.

Hoffman[29] describes a method of instantaneously detecting abduction and adduction by placing the two limbs together on the adducted side. The furrow at the bend of the thigh will be deeper and longer than the other. If it is abducted the furrow will be shallow. The genitals in the fold between the buttocks will always point toward the adducted and away from the abducted thigh. To measure the amount, he records the distance from one anterior superior spine to the other. Midway between these points a dot with an aniline pencil or ink is made. A mark is then made directly over the symphysis pubis; a string is then applied from the upper to the lower mark and down the thigh and leg to below the soles of the feet. If there is no adduction, the string falls midway between the two inner condyles and the internal malleoli. If either limb is abducted, both the condyles and the malleoli will be outside the string; if adducted, they will be inside the string.

DIAGNOSIS OF FLAT-FOOT.

Galloway[30] deprecates the name of valgus as a synonym for flat-foot, as valgus is but one element of the deformity of flat-foot. The term pronated foot is also not favored by the writer as not being sufficiently accurate. He prefers to retain the name of flat-foot as being clinically accurate, even if it is not anatomically correct. The clinical symptoms which he lays stress upon are pain, tender points, limitation of motion, loss of elasticity in gait, and hot, cold or numb feet. There is sometimes swelling. He considers the best guide an examination of the imprint of the foot.

(To be continued.)

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[26] Zeitschrift für Orth., p. 276.

[27] Deutsche Zeitschrift für Chirurgie, Bd. xliii.

[28] Annals of Surgery, 1897, p. 674.

[29] St. Louis Medical Review, June 12, 1897.

[30] Canadian Journal of Medicine and Surgery, 1897.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

Forty-ninth Annual Meeting, Denver, Col., June 7–10, 1898.

(Concluded from No. 25, p. 596.)

SECOND DAY. — GENERAL SESSION.

The Association was called to order by the Second Vice-President, **Dr. Thompson.**

Dr. Dudley S. Reynolds, Louisville, presented a resolution to the effect that after January 1, 1899, any college professor or other teacher that shall confer any degree upon any person not complying with the standards of the American Medical Association regarding educational requirements, shall hereafter be excluded from meetings of the Association. This was referred to the Executive Committee.

A resolution by **Dr. W. W. Keen**, of Philadelphia, was also introduced, favoring vivisection for experimental research, which was referred to the Executive Committee.

Dr. H. A. Hare, of Philadelphia, offered a resolution relative to the State and County medical societies of New York, asking that they be allowed to send regularly recognized delegates to the Association. Referred to Executive Committee.

Dr. George M. Gould, of Philadelphia, presented a resolution the effect of which was to encourage the establishment of medical libraries throughout the United States. Referred to Executive Committee.

Dr. Wm. Bailey, of Louisville, introduced an important matter in the form of a resolution to the effect that the office of General Secretary be created, with a salary not to exceed $2,500 or $3,000 per annum. He said that the Association had grown to such proportions that the services of at least one salaried man were required who would devote his entire time to the interests of the Association. By this resolution the present Secretary, Dr. Atkinson, would be retained as an honorary officer. Resolution referred to Executive Committee.

Dr. Sanders, of Alabama, recommended, in a series of resolutions, that the Association take steps leading to the establishment of public health bureaus, having their roots in every city and town in the land, and an executive head in the national government.

Dr. Humiston, of Ohio, read a report adopted by the Ohio State Medical Society regarding the antivivisection bill, and recommended that in addition to the other committees being named, one should be composed of residents of Washington, Philadelphia and Baltimore. Under this arrangement there would be assurance of prompt attendance of committeemen whenever the bill referred to came up.

Dr. J. H. Musser, of Philadelphia, then read the general Address in Medicine. He selected for his theme

AN ESSENTIAL OF THE ART OF MEDICINE.

The closing years of the eighteenth century and the early years of the nineteenth century marked an epoch in medicine as transcendant for its welfare as the events of the past decades bespeak for the glory of the medicine of the future. The state of medicine in the eighteenth century was described as the result of deductive methods of reason, made possible because of the want of instruments of precision. Elaborate classification of disease and refinements of symptomatology which serve only to amuse and appall were the result. The sway of the imagination and the rule of theory were all powerful. Speculative modes of treatment grew out of the specious pathology. These modes of treatment were referred to. Venesection, polypharmacy and stimulation were followed by expectant treatment and nihilismus.

The limitations of the inquiry in diagnosis were outlined. Diagnosis was an intuition and an art. Cullen said theory could control observation. But medicine as a science was no higher nor lower than cognate departments of knowledge.

The development of the other sciences was outlined. Science was not applied to industrial arts at this time, and so they were carried on by rule-of-thumb methods. Medicine ceased to be deductive; its practice began to be scientific.

The development of medicine during the present century was outlined. Medicine has grown to be a science — a department of the science of biology. The history is the history of the application of scientific habits of thought to experiment, observation and analysis. Medicine grew to a science by the labors of physicians who were naturalists. The influence of inductive reason on other sciences was elaborated, and its effect on theology, history and sociology, stated.

Clinical medicine, as a science, embraced diagnosis and therapeutics. Methods of diagnosis of the present day require a scientific habit of mind and skill in the use of instruments of precision. The scope and positivism of diagnosis was shown, as fifteen diseases can now positively be recognized, without any possibility of error. Diagnosis has grown to be scientific, precise and positive. Error in method leads to error in diagnosis. Therapeutics grew to a science by the influence of various forces, all the outcome of the mode of thought of the naturalist. Natural history of disease first described; disease self-limited. The science of statistics showed the fallacy of determining the value of a drug from a small number of cases. Analysis of 12,000 prescriptions showed that various drugs were called for about 31,000 times, and preparations of nux vomica, iron, opium, mineral acids, cinchona and its salt, mercury, ipecac, bismuth, belladonna, arsenic, squills, hyoscyamus and digitalis were called for in one-third of the total, and if external remedies and excipients are excluded, in one-half.

Scepticism arose because too much was claimed. The more incurable the disease the greater the number of drugs claimed to cure it. The more virtues a drug is said to have, the less its probable value. Polypharmacy was assaulted in the past, but still holds sway. The treatment of diphtheria by antitoxin was the only scientifically-established mode of therapeusis.

Drugs have no doubt an action in health and disease. Their use may be of advantage, but usually is not necessary. We need not be sceptical about the power of the drug, but about its necessity. Some say we are robbed of the power of mental expectancy if drugs are not given. Such expectancy and hypnotism, for therapeutic purposes, can be secured by an honest examination of the patient. The "lie" is not required in medicine any more than in religion, as Zola points out.

Application of science to industrial art at the present time shows in every department that scientific methods are necessary. Brewing, iron making, leather making are no longer arts but sciences. Art is gone; science holds sway. Large amounts of capital involved, and great competition, have forced out the element of chance as in art, and instituted the element of certainty that approaches in the science.

As the essential to the art is the science of medicine, we must educate our students to a scientific habit of thought.

THIRD DAY. — GENERAL SESSION.

The Association met at 11 A. M., with the Fourth Vice-President, Dr. Happel, in the chair.

REPORT OF BOARD OF TRUSTEES.

This was read by **Dr. Garcelon**, of Maine. He said that the Association was to be congratulated on its growth and prosperity. The Board noted with pleasure that the leading medical colleges were lengthening their curriculum of instruction. Reference was made to the growth of the *Journal* from 1883, when the experiment was first tried of publishing a weekly, to the present time. The first issue was circulated July 1, 1883, and 3,500 copies of that date were printed, being largely in excess of the membership of the Association. At this time the membership, including both delegates and permanent members, did not exceed 1,500. For the succeeding years the growth of membership was slow, there being during 1887 only an increase of 161. Since then the membership has materially increased, as well as the general circulation of the *Journal*. The appearance and general make-up of the paper were highly satisfactory. Viewed as a medical newspaper, it now undertakes to publish everything in current news that will interest the physician. Then follows a financial statement of the *Journal* for the fiscal year, ending December 31, 1897, showing a balance on hand of $14,092.85. To the report was appended an inventory of the *Journal* property. The balance in the treasury was so satisfactory, that the Board directed an additional $10,000 be placed to the credit of the investment fund created by the Association in 1896 for the purpose of providing a permanent building for the home of the *Journal*. In accordance with the recommendation, the Board has become an incorporated body, and has definite standing as a legal corporation.

In conclusion, the Board recommends that each member make a renewed effort to increase the membership, encourage subscriptions, and extend the good influence of the Association for the advancement of medical knowledge and the general welfare of the profession.

On motion, the report was ordered printed, and Dr. Garcelon extended a vote of thanks for reading it.

Dr. Gihon reported, on behalf of the Rush Monument Fund, that he had received nearly $12,000.

Dr. U. O. B. Wingate, Milwaukee, read the

REPORT OF SPECIAL COMMITTEE ON DEPARTMENT OF PUBLIC HEALTH.

The bill, already familiar to the profession, was referred to and its salient points outlined. The report closed with the following resolutions:

Resolved, That the Committee be continued; that the bill as now perfected and before Congress be approved, and that the Committee use its best endeavors to have it passed by Congress.

Resolved, That the members do all in their power to urge upon their Representatives the passage of the bill.

Resolved, That the Association appropriate the sum of one thousand dollars, or so much thereof as may be necessary, for the use of the Committee, in the endeavor to have this measure passed.

On motion, report was referred to Executive Committee with power to act.

Dr. H. O. Walker, Detroit, read the

REPORT OF THE COMMITTEE ON NOMINATIONS.

For President, Dr. J. M. Mathews, Louisville. First Vice-President, Dr. W. W. Keen, Philadelphia. Second Vice-President, Dr. J. W. Graham, Denver. Third Vice-President, Dr. H. A. West, Galveston. Fourth Vice-President, Dr. J. E. Minney, Topeka. Treasurer, Dr. Henry P. Newman, Chicago. Librarian, Dr. George W. Webster, Chicago. Trustees: Drs. Alonzo Garcelon, Maine; T. J. Happel, Tennessee; I. N. Love, Missouri; to fill vacancy, H. L. E. Johnson, District of Columbia. Members of Judicial Council: Drs. S. S. Bailey, Iowa; D. R. Brower, Illinois; H. D. Didima, New York; D. Mason, Washington; F. T. Rogers, Rhode Island; M. B. Ward, Missouri; to fill vacancy, W. S. Jones, New Jersey. General Addresses: Medicine, Dr. J. C. Wilson, Pennsylvania; Surgery, Floyd W. McRae, Georgia; State Medicine, D. R. Brower, Illinois. Place of Meeting, Columbus, O. Time, June 7–10, 1899. Chairman Committee of Arrangements, Starling Loving, Columbus. Assistant Secretary, E. W. Woodruff, Columbus.

On motion, the report was unanimously adopted.

The Executive Committee reported through its Secretary, Dr. Bulkley, that under the existing laws of the Association, it did not feel competent to recommend the adoption of the suggestions contained in the President's address.

Relative to the Rush Monument Fund, the Executive Committee endorsed the nomination of Dr. Henry D. Holton as Treasurer for the funds, as recommended by Dr. Gihon in his report at a previous general session.

The Executive Committee had examined the Treasurer's report, and had found it correct and the books neatly kept.

The Executive Committee recommended the adoption of the resolutions offered by Drs. Dudley S. Reynolds, W. W. Keen, Geo. M. Gould, and Wm. Bailey, and their action was ratified by the Association.

As to the Hare resolution in relation to admitting the New York State and New York County Medical Societies, the Executive Committee reported that while it was fully in sympathy with and endorsed the idea proposed in the resolution, it felt that it involved a question which did not properly come within the province of the Executive Committee, and that the matter concerned the Association at large.

After a spirited debate, participated in by Drs. Hare, Scott, Ferguson, Love, Munn, Jackson, Bishop, Meyer, the President (Dr. Happel) declared the matter out of order, amid great laughter and cheering.

The Executive Committee favored, and the Association adopted, the button of Dr. Stone as the permanent button of the Association.

As to the recommendation in the report presented by Dr. Humiston, the Executive Committee did not recommend the appointment of such committee.

Dr. John B. Murphy, of Chicago, then delivered the General Address in Surgery. He selected for his subject,

SURGERY OF THE LUNG.

He stated that an analysis of the accomplishments in this special line of work was of great interest, the advancements having been made by individual and unsupported efforts. The profession at large had never entered into this field with the enthusiasm, persistency and energy with which it had invaded other fields, as the peritoneum, the genito-urinary, and the osseous and nervous systems.

The author then took up and considered at great length the early history of lung surgery, after which he discussed the anatomy of the lung, the lymphatics, and the physiology of respiration.

In considering operations upon the lung several questions arise: (1) Is the lung situated in its bone-bound cavity accessible to surgical manipulation? (2) What are the difficulties and dangers encountered in entering this bony cavity? (3) To what extent may this wall be removed and replaced and what latitude of manipulation is permitted within the chest? (4) What will be the effect of opening the pleura of pneumothorax in cases of adhesions, and without adhesions? (5) How can its dangers be avoided or lessened? (6) Should the pleura be closed or drained? (7) Can the lung be incised, excised, or defunctionalized? (8) In pneumotomy, what are the dangers and limitations? They are hemorrhage from opening in the chest, and pneumothorax from opening the bronchi; also pleuritis of the same and opposite side, and traumatic pneumonia, and sepsis. (9) What are the pathological conditions of the lung requiring excision? They are hernia, infected injuries, abscesses, bronchiectasis, gangrene, the removal of foreign bodies, tubercular cavities, hydatids, and actinomycosis. (10) In pneumotomy, what are the dangers and limitations? They are (immediate) hemorrhage, pneumothorax, and dyspnea; (secondary) shock, dyspnea, hemorrhage, sepsis, pleuritis, and pneumonia on the opposite side.

Dr. Murphy then dwelt upon the best method of treating the intra-thoracic stump, and of drainage and closure. He also expatiated upon the pathological histology of repair of the stump, etc. (11) How is the chest filled after excision? What are the pathological conditions in which excision is desirable or required? They are neoplasms of the chest wall involving the lung; circumscribed tuberculosis. (12) How may the lung be defunctionalized artifically and quiescence maintained? By injections into the pleural cavity, and by resection of the ribs which allows the chest wall to collapse; thoracotomy with separation of pleural adhesions and compression of the lung. (13) What are the technical difficulties of intra-pleural injections? They are adhesions and consolidations. What are its technical dangers? They are air embolism, subpleural emphysema, pulmonary emphysema, dyspnea and sepsis. (14) How can we determine that the injected material is passing into the pleural cavity and not into the lung tissue or bronchus? What is the most desirable material to use for injection? What are the effects of this pulmonary quiescence on the healthy lung? What are the effects of this pulmonary quiescence on the diseased lung, particularly in tuberculosis? How long must the lung remain functionless that the process of repair in tuberculosis may be complete? Are pleuritic effusions beneficial or prejudicial to the repair of tuberculosis of the lung?

Pathology indicates and clinical experience justifies resection of ribs to allow collapse of the lung. The same conditions demand thoracotomy with separation of adhesions and compression of the lung. What are the dangers of operation on and injuries to the chest wall? They are shock, hemorrhage, pneumothorax and sepsis.

Shock, hemorrhage, pneumothorax and sepsis were then taken up *seriatim* by the author and considered at length. Then followed extensive observations of the action of the lung in the human subject.

Dr. Murphy next considered the diagnosis of pneumothorax and its treatment. He also touched upon the following subjects: hernia of the lung and its treatment; wounds of the lung; infective lesions of the lung, their etiology and treatment; abscess of the lung and its treatment; bronchiectasis; gangrene of the lung; foreign bodies in the lung; tuberculosis of the lung; incision and drainage of tubercular cavities; hydatid cysts; actinomycosis of the lung; neoplasms of the chest wall and lung requiring pneumectomy.

The author then gave an exhaustive numerical summary of the cases operated on both by himself and other eminent surgeons, as collected from the literature of the subject, for the following conditions: gangrene of the lung; abscess of the lung; bronchiectasis; tuberculosis of the lung; foreign bodies in the lung; neoplasms of the lung; and gave the results, favorable or unfavorable, of the various operations.

Dr. Murphy was extended a vote of thanks for his interesting and instructive address, after which the Association adjourned.

FOURTH DAY. — GENERAL SESSION.

Dr. Happel in the chair.

Dr. Wills, of California, offered an amendment to the Constitution to the effect that the President, Vice-Presidents, Treasurer, Librarian, Secretary, Assistant Secretary, and Chairman of the Committee of Arrangements, shall be nominated by a special committee consisting of one member from each State represented at the meeting, and they shall be elected annually by vote and shall hold office until their successors are elected. [This amendment lies over one year.]

Dr. Happel offered the following:

Resolved, That an exact time be fixed at future meetings of the Association by the Committee of Arrangements when the different general addresses shall be delivered, and that when that time arrives all business shall be laid aside till the addresses have been finished. [Lies over one year.]

Dr. C. Lester Hall offered a resolution, that the Permanent Secretary furnish to incoming secretaries of Sections, a list of names of those attending the various Sections each year. Adopted.

The Committee on Transportation for the next meeting consists of Drs. H. L. E. Johnson, I. N. Love, C. A. L. Reed, X. C. Scott, E. D. Ferguson, and Starling Loving.

Dr. Love presented the following resolution:

Resolved, That the Permanent Secretary be required to have the official stenographic report of the proceedings of the general sessions transcribed verbatim and ready for consideration and correction, if need be, each day before being adopted. [Carried.]

A resolution was offered and carried, that the Permanent Secretary furnish a copy of the Constitution and By-Laws and Code of Ethics to the proper authorities who have in charge the preparation of the program with instructions to print the same in the regular official program each year hereafter.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS.

(1) Offered by **Dr. W. L. Wills.** Art. IV., Officers: Amend to read, "Each officer shall hold his appointment for one year, and until another is elected to succeed him." This was tabled.

(2) Offered by **Dr. H. B. Ellis.** Art. IX, Conditions for Further Representation: "Any State or local medical society or other organized institution, whose rules, regulations and code of ethics agree in principle with those of this Association may be entitled to representation on the advice or agreement of the Judicial Council." This amendment was also tabled.

(3) That the name of the Section on Dental and Oral Surgery be changed to that of Section on Stomatology. Adopted.

(4) Offered by **Dr. L. D. Bulkley.** "That all new business shall be introduced not later than the third day of the session." To this amendment there were added the words, "unless there be objection," after which it was adopted.

After the presentation and adoption of resolutions of thanks, the Association adjourned to meet in Columbus, O., the first Tuesday in June, 1899.

The official registration of members present was 1,336.

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SUFFOLK DISTRICT MEDICAL SOCIETY.

THE SECTION FOR OBSTETRICS AND DISEASES OF WOMEN.

C. H. HARE, M.D., SECRETARY.

Regular Meeting, Wednesday, March 23, 1898, **Dr. F. W. Johnson** in the chair.

Dr. F. W. Johnson reported a

CASE OF EXTRA-UTERINE PREGNANCY.[1]

Dr. George H. Washburn read a paper on

CÆSAREAN SECTION VS. SYMPHYSEOTOMY.[2]

Dr. Swift: I have done one symphyseotomy, and in that I did not encounter any of the disadvantages which Dr. Washburn has enumerated. When I was called to the case I had no idea that I was going to do symphyseotomy, and I had no special instruments. I found it a very simple operation. The convalescence was rapid, and mother and child are now perfectly well. In cases where it is known beforehand that a disproportion between the head and pelvis exists, I think Cæsarean section is the operation of election. The place for symphyseotomy is in cases where labor has been in progress some time and the patient is exhausted. I think that in opening the abdominal cavity there is always a liability to shock, and if the woman is in an exhausted condition that would have a tendency to throw the balance unfavorably. From my experience I don't see why there should be any more shock in symphyseotomy than in any of the ordinary obstetric operations.

Dr. Storer: Having had no experience with either operation, I can only say my prejudice is entirely in favor with Dr. Washburn's contention that, other things being equal, the Cæsarean section is the operation of election. The perfected Cæsarean section is an operation of very little danger in the hands of trained abdominal surgeons. After symphyseotomy a very great number of cases have had by no means the uneventful convalescence of Dr. Swift's case. A great many cases the reports of which I have read had very untoward symptoms indeed in the convalescence, and lack of union of bones and trouble with the bladder. As regards Dr. Englemann's preference for symphyseotomy for an emergency operation, it does not seem to me that the fact of an operation being an emergency operation in any way contraindicates a Cæsarean section. The preparations that must be made can be made almost anywhere. The instruments needed are very few, as Dr. Washburn says. The obstetrician who is not at home in the abdominal cavity certainly will do very much better with a symphyseotomy than with a Cæsarean section, but it seems to me in this discussion the question is, which is the more scientific and better operation, which presupposes it should be done by a perfectly competent man. I should like to ask Dr. Washburn what his method of controlling hæmorrhage was, whether he depended upon an elastic ligature or the fingers of his assistant?

Dr. Cumston: I must also speak from inexperience, for I have done neither of the operations, but I have assisted at several symphyseotomies. I have never seen Cæsarean section done. There is one thing to be remembered in doing the symphyseotomy which I don't think Dr. Washburn brought out quite emphatically enough, and that is avoiding lacerating the venous plexus of the clitoris which is found just under the symphysis. If that occurs there will be a great deal of trouble. I should almost be more afraid of hemorrhage from that source than of that occurring in the abdominal cavity during a Cæsarean section. By repeating the operation a number of times on the cadaver I came to the conclusion that the Galbiati knife was too large an instrument to handle, and when looking about in the shops in Paris to buy a set of knives for resection of the joints, I found that the little curved intraligamentous knife of Ollier would answer all the purposes for easy and safe section of the symphysis pubis.

The choice of operation in emergency seems to have considerable importance. Although I cannot speak positively, I don't think infection after symphyseotomy would be as liable to follow as after Cæsarean section. When I say that, I mean that infection is not so liable to follow after symphyseotomy if the physician has not already bungled with the fetus in the uterine cavity with a number of attempts at high forceps, and possibly produced laceration and rendered the patient septic before he began to do his symphyseotomy.

The bladder has been the source of the trouble in the operations in those cases I have seen. In one of them there was considerable cystitis following. I think I have assisted at five cases, and in none of them was there any trouble with the primary union of the symphysis taking place; but in those cases in which the patient is old and where there is a lack of vitality, where we presume that union might not take place as readily as possible, there is no reason why we should not follow the example of Pinard and others and suture with silver wire the symphysis. Of course, it requires an extra instrument, namely, a bone drill to pass the sutures through.

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[1] See page 613 of the Journal.

[2] See page 611 of the Journal.

When the passage of the child is prevented by uterine myomata or pelvic tumors, I think we should resort to the Cæsarean operation because we can at the same time treat the cause of dystocia surgically. Osteomalacia, which is such a frequent cause of pelvic deformities, is happily treated by castration, and consequently the abdominal route should, according to my way of thinking, be selected for the delivery of the child when the mother is the subject of this affection, and at the same time the ovaries may be removed.

It is also important that students and physicians should be well versed in pelvimetry; if this were the case fewer unpleasant surprises in the way of difficult labor would occur, because if the patient's pelvis has been measured before labor as it should be in all cases, and found abnormal or contracted, premature labor at the seventh or eight month is indicated, as has been touched upon by Dr. Englemann.

DR. SWIFT: I should like to ask if any one knows how the age of the patient would affect a symphyseotomy. Suppose we have a primipara of thirty-seven or eight, would there be any difficulty in the separation of the symphysis from an ankylosis of the sero-iliac joints?

DR. CUMSTON: That has never happened in the cases at which I have assisted. I do not recollect of having read of it. Of course, there are cases in which there has been difficulty in getting the full separation of the pelvic bones, and I think that in some cases they have not been able to obtain the desired result although they have delivered the child. Pinard about a year ago wrote a treatise on the subject, and I don't think he discusses that question to any great extent, but I do recollect of having read reports of cases in which they could not make the separations of the full five or six centimetres that we expect to get.

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Recent Literature.

Accident and Injury. Their Relations to Diseases of the Nervous System. By PEARCE BAILEY, A.M., M.D. With 55 illustrations. 8vo, pp. xii, 430. New York: D. Appleton & Co. 1898.

The difficulties in the way of writing a satisfactory treatise on traumatic nervous affections are very great. Injury is set down as one of the causes of almost all the affections of the nervous system; the literature on the so-called traumatic neuroses alone is enormous; the ignorance of the subject is widespread and many erroneous ideas are prevalent; some of the conditions due to injury are really very obscure; so that to discuss the subject fully would require not only the evil of a large book but almost a complete treatise on nervous and mental disorders. This evil has been avoided in the present volume, which is moderate size, clear, concise, and up to date. In avoiding the evil of too large a book, however, the author has been compelled to make some portions rather inadequate.

This inadequacy is seen especially in the chapter on the examination of the patient, which is compressed into twenty-seven pages. The descriptions are excellent and if the physician were to follow them implicitly he would make a better examination than most of the "experts" make, who testify glibly as to a patient's condition after a superficial examination of twenty or thirty minutes' duration; but a careful and accurate clinical examination is the foundation of our knowledge of disease, and much of the obscurity that surrounds the subject is due to the ignorance which comes from inadequate clinical study. We therefore regret that the author, who recognizes the necessity for the most detailed examination as fully as could be desired, has not forced it upon his readers by devoting a much larger space to it.

The second section treats of the "organic" effects of injury, describing briefly "the symptoms which are to be regarded as indicative of acute organic injury to the brain, the spinal cord and the peripheral nerves." More than one volume has been filled with the consideration of injuries of only one of these organs, but these chapters give an excellent sketch of the subject. The concluding chapter of the section treats of the ultimate organic effects of injury. Epilepsy, paralysis agitans and progressive spinal muscular atrophy he considers may be caused by injury; in tabes and general paralysis the influence of injury is justly regarded as very doubtful. He says nothing of lateral sclerosis and he speaks of multiple sclerosis only in relation to diagnosis later in the book, and then somewhat inadequately. Concerning spinal concussion he is sceptical, but his definition is as obscure as the subject. If the question of concussion be, as he implies, whether direct violence can injure the essential elements of the cord, exclusively, without injury to the vertebræ or without producing hemorrhage — concerning which he expresses grave doubt — he practically admits it when he grants that progressive spinal muscular atrophy may be due to injury.

About half the book is devoted to hysteria and neurasthenia and allied forms of disease. These chapters may be most heartily commended. The author is in accord with modern neurological views, although many of his statements differ from those so often expressed by "experts" and railway attorneys. He gives a clear and full presentation of the clinical aspect of these affections, he has made a thorough study of the literature and his own opinions are sound and conservative. He gives due weight to the physical factor in etiology, somewhat disregarded of late; he estimates the evil effects of litigation certainly as much as they deserve, for he somewhat underestimates the severity of the conditions often seen in non-litigation cases; he gives due weight to the gravity in prognosis, — in neurasthenia it is good "if the patient has no claim to bring and can put himself at once under the care of a skilful physician, although even then recovery is not always assured"; in hysteria it is much less favorable; in the obscurer forms it is bad. Of these latter forms he says, that it seems more advisable simply to record their occurrence "without claiming that they all have a common pathology, or without insisting too strongly upon what the most probable nature of their pathology is." Simulation he considers rare, and believes that skilful investigation can readily detect it. It is seen most commonly in persons who claim only small amounts, where the claim is too insignificant to warrant thorough investigation, and in this connection he gives an interesting account of the Freemans, who attained considerable skill in feigning various forms of paralysis and made a business of bringing fraudulent claims against corporations. In the chapter on treatment he gives a good *résumé* of the best methods of treating hysteria and neurasthenia, with a wise omission of any advice for the patient to keep at work, now so prevalent in Germany.

One of the most serious omissions is the consideration of the forms of acute mental disease, especially of the confusional type, which sometimes seem to have a distinct relation to injury, and to be of much greater importance in this respect than is general paralysis.

In spite of certain omissions, of a somewhat too great brevity, and of some differences of opinion in regard to minor matters, the book as a whole is thoroughly to be commended. The need of a good treatise upon this obscure and much-discussed subject is very great, for the student has thus far been compelled to search through various treatises and files of journals to obtain an adequate idea of the subject. The present volume fills the need, and it will be indispensable to all who have to do with accident cases, both physicians and lawyers.

Outlines of Rural Hygiene. For Physicians, Students, and Sanitarians. By Harvey B. Bashore, M.D., Inspector for the State Board of Health of Pennsylvania. With an Appendix on "The Normal Distribution of Chlorine," by Prof. Herbert E. Smith, of Yale University. Illustrated. Pp. vi, 84. The F. A. Davis Co., Philadelphia, New York and Chicago.

Very much that has been published in regard to Public Hygiene is applicable chiefly to densely populated districts to the neglect of those communities which are more sparsely settled. This book is intended to supply the deficiency. The topic of Water-Supply is treated with special reference to the pollution of wells and other sources employed in country districts; the Disposal of Waste-Matters, including excreta, garbage, ashes, etc., occupies the second chapter. The third chapter treats of Soil-Moisture and the Air of the Soil. The author very properly takes the position that the Pettenkofer theory in regard to the relation of the level of the ground-water to the prevalence of typhoid fever is out of date, many extensive epidemics of this disease having occurred in New England in the winter and spring and at times when the ground-water was at a high level. Other chapters treat of the Hygiene of Dwellings, Schools and Other Public Buildings.

The appendix, entitled the "Normal Distribution of Chlorine," consists of an application of the principle, first published in the Report of the State Board of Health of Massachusetts in 1890, to the State of Connecticut. It was found upon observation that the isochlorine lines, published in the former report, could be prolonged in the same manner across Connecticut, thus serving as an important guide in the detection of polluted waters.

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Medical and Surgical Journal.

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SOLDIERS' FOOD. — CAMP LIFE: ITS BENEFITS AND HARDSHIPS.

It hardly need be said that our soldiers must be furnished with an ample supply of provisions. Experience has shown that to every soldier there should be supplied from 31 to 35½ ounces of dry nutritious food daily, of which 26 ounces are vegetable and the rest animal, the latter consisting of 9 ounces of salt meat or 4½ of fresh. Sugar and coffee should also be liberally supplied. This may be regarded as the minimum ration. Campaigns have proved a failure and battles have been lost from alimentary causes alone. From the nature of the case the rations must be plain, consisting mainly of the necessary food-elements and a minimum of luxuries; the soldier who goes to camp goes, or ought to go, prepared to forego the delicacies of the modern cuisine for hardtack and bacon. Condensed milk may be plenty, but he will not see fresh milk, nor is it often that fresh baker's bread and green vegetables can be furnished. Fresh meat must also be a rarity; fortunately, however, canned meats, vegetables and fruits are not altogether unknown in the camp, though salt pork, bacon, dried fish, hard biscuits, beans and abundance of coffee (experience has proved that coffee is better than tea for soldiers) must be the staple food of the army.

Soldiers very soon become accustomed to such coarse, homely fare, and thrive on it, as all past experience attests, outdoor and tent life and the exercises of the drill, the march, the battlefield being powerful adjuvant influences. It is a kind of life that would benefit many a pale delicate youth in the counting-room or factory, only, Government will take none but the fairly robust, and physicians seldom for obvious reasons recommend army life to their patients. Camp life is a reversion to more primitive modes of living, to the "state of nature"; and if it be true, as some evolutionists contend, that the modern constitution is hardly yet adapted to a civilized mode of life, a return to plainer and more ancient and primitive modes of living cannot but be advantageous from a sanitary point of view. What has continually been noted is the phenomenal appetites of soldiers; and digestive disturbances in army life are rare except as accompaniments and sequels of the occasional excesses that accompany a campaign; the robustness of soldiers long inured to the camp is proverbial.

It is true that the transition from home life to tent life out of doors is trying, and many soldiers must long miss the fare and the comfortable beds to which they have been accustomed. There is a period when the soldier will sorely feel every privation; and if there is any friction in the working of the commissariat department, he will be in a mood to make bitter complaint. Lately the daily papers have been full of dismal tales of hunger and privation in the military camps, and anxiety has penetrated into thousands of homes. Are our soldiers really ill-fed, or are these harrowing stories canards?

A writer in the *Evening Post* (June 13th) who had for the previous six or seven weeks lived in soldiers' camps and seen more than 10,000 of the regular army and 60,000 volunteers, moving daily from regiment to regiment, noticing the details of life in camp and talking with a countless number of officers and privates, denies *in toto* these reports about the soldiers being poorly fed and ill cared for. He calls them the exaggerated tales of homesick boys. That there has been difficulty in the commissary department of some regiments is quite true. But it is a mistake to judge the whole camp by the misfortunes of a few. The regulations of the commissary department, he says, provide for the daily supply of three and a quarter pounds of rations for every enlisted soldier. The quantity of each of the articles provided is clearly specified, and if for any reason there is shortage of any one item, the weight is made up in some other. The amount of three and a quarter pounds of rations per day per man is fixed from practical experiments regarding the requirements of the average man, and the allowance certainly is liberal. That this quantity is distributed, he affirms from letters presenting the figures, and showing the purchases and receipts of food supplies at Camp Thomas, from which point so many of the wails came. As for the quality of the rations, he says they are the best of their kind; and if they are unpalatable when they reach the soldiers, the fault lies either in the soldier's ideas of what a soldier ought to have, or with a company cook whose knowledge of his business is limited to the art of spoiling wholesome food. As for the variety, the ignorance displayed by some of the men in the ranks is phenomenal. The ideas which some enlisted men have regarding a soldier's life, he thinks, are decidedly paralyzing. Some appear to think that because the government is rich they should be served with fruit, chocolate, toast and marmalade for breakfast, and with a dinner of at least six courses, including nuts and raisins, Roquefort cheese and ice cream.

This writer's remarks are in the main so judicious that we are tempted to copy some extracts from his letter on "Our Hungry Soldiers," in criticism of numerous fault-finding letters.

> Camp is a place for camp-fare. The fare provided is abundant and wholesome, in spite of the whining of some whose absence from the ranks would be an advantage to the army and a benefit to the country. Our regulars live on it, and one would be wholly safe in pitting 5,000 regulars against any 5,000 volunteers, in the matters of physique, endurance, sound health and activity. "But," says some grumbling soldier-boy, "they are used to it." Yes, my son, and you must get used to it. That is a part of your business as a soldier, and you are but half a soldier until you take to bacon, beans and hardtack, very much as you now take to Huyler's candy. Some of these letters tell of having to walk two miles to get water. Wait a bit, my soldier, until you have marched ten or fifteen miles without any. You want to go to Cuba and fight Spaniards. You are eager to go to the front and see active service. Do you imagine that you can leave a line of battle during a hot engagement and walk a few paces to a pump or a faucet and get a drink of iced water at any time when you happen to be thirsty? . . .
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> Barring the temporary inconvenience caused by occasional congestion in the department, no soldier need go hungry, and few really do. The hospital service tells the real story. Men break down from lack of food and water. I have watched the work of the hospital department of the camps. I have seen no cases in any of them due to starvation or thirst. Nor, I think, has any one else. This applies, not to one but to all our camps. The general conditions in one are the general conditions in all. . . .
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> How many of these grumbling soldiers know the brigade inspector or the inspector-general when they see either one of them? It is the business of these officers to know all about the food supply of their camps, and to report the condition to their superior officer. Do the grumblers think that the corps commander never sees anything but the officers' mess, which the officers have to pay for out of their own pockets? . . .
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> It is hard for mothers and wives not to believe literally all that sons and husbands write to them. But it should be remembered that the craving for sympathy is a strongly marked trait in human nature and many a man and boy likes to have his friends at home think that he is doing the hero in very large shape, though he forgets that heroes are not given to complaining, and writes his pitiful tales of hard life in camp without thinking of the pain and the tears with which they will be read.
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> Those who enlisted in the army expecting a picnic or a pleasant outing will be wofully disappointed. Campaigning means hard work and camp fare. Those who enlisted with any form of principle mingled with their motives will do well to act the soldier and accept the soldier's life with a soldier's grace and fortitude. . . .

With regard to "tropical food," a recent authority says that in Cuba the Spanish have made the mistake of giving the soldier too much bacon and not enough beef. In the tropics the best, the most healthy meat is mutton, and afterwards beef. These two must be the basis of the diet; then add biscuit, potatoes, beans. As to drink, coffee, and only coffee; no alcohol. In the tropics coffee has all the good effects of alcohol and none of its evils — hot coffee, not very strong, with meals and between meals; cold coffee, weak, and without sugar, is the perfect beverage in the tropics. This diet is the result of the experiences of the Spanish military surgeons. The authorities at Washington, according to this writer, err, if anywhere, in too much insisting on the pork *régime*.

It is not improbable that at times and in places since mobilization began there have been difficulties and some shortcomings in regard to the distribution or transportation of supplies, though the supplies themselves have been provided in generous measure. These difficulties, and possibly some of these shortcomings, will doubtless recur with active campaigning in foreign countries at a distance from the base of supplies. A perfect commissariat cannot be called into existence for large bodies of men in a few weeks, and this department has proved defective or broken down utterly in most wars, even in the latter half of this century.

But we fear many of our soldiers will yet be called upon to meet experiences compared with which their early weeks of camp life will seem luxurious, and yet being more inured to the changed conditions they will bear these experiences more easily.

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MEDICAL NOTES.

THE MEDICAL SCHOOL OF THE UNIVERSITY OF ODESSA, Russia, is to be opened next year.

A DIAGNOSTIC CONUNDRUM. — Mr. Jean de Reszke, the popular tenor, was prevented appearing on the scene last week on account of "neuralgic rheumatism of the liver." — *Medical Press.*

A SECTION ON TROPICAL DISEASES, the first of its kind to be established, will be one of the features of the coming meeting of the British Medical Association, which will meet in Edinburgh, July 26th. The Section will be presided over by Dr. Patrick Manson, the well-known authority on the subject.

THE PLAGUE. — In Karachi, Sind, the disease is rapidly developing and the mortality is very high, 1,183 cases and 992 deaths — a mortality of over 83 per cent. In Calcutta and Bombay the disease is declining. In the latter place there have been to the present time, 29,062 cases and 26,239 deaths — a mortality of 90.2 per cent.

THE PHYSIOLOGICAL LABORATORIES AT UNIVERSITY COLLEGE. — The new physiological laboratories at University College, Liverpool, the magnificent gift to the college of the Rev. S. A. Thompson Yates, will, as we learn from the *Lancet*, be opened on October 8th, Lord Lister performing the opening ceremony. It is stated that the Victoria University will take advantage of Lord Lister's visit to Liverpool to confer upon him the honorary degree of Doctor of Science.

CEREBRO-SPINAL MENINGITIS IN PARIS. — Netter, writes the Paris correspondent of the *Medical News*, called attention, at a recent meeting of the Academy of Medicine, to the existence in Paris of a small epidemic of cerebro-spinal meningitis of which he had seen in a period of two months no less than five fatal cases in the Trousseau Hospital. There were three other fatal cases of tuberculous meningitis in which the meningococcus was associated with the tubercle bacillus. Most of the cases entered the hospital from different parts of the city and the suburbs.

DEATH OF TWO MEDICAL MEN FROM TYPHUS. — Under the head of "Martyrs to Duty," the *British Medical Journal* makes the following statement: "Two medical men have within the past fortnight fallen victims to typhus in Ireland. The first was Dr. Paul Dillon, of Killarney, a gentleman who was greatly beloved in his district. He had previously been assistant physician to St. Vincent's Hospital in Dublin, and was a very highly-trained practitioner. He was a comparatively young man, having qualified in 1883. He contracted the fever while visiting a poor patient in consultation, and in the same nest two other medical men were also infected, although they have happily recovered. From the North of Ireland the death of Dr. Thomas Sullivan, son of Mr. T. D. Sullivan, M.P., is also announced from the same cause. Here again the disease was the result of a visit to poor dispensary patients, and death resulted in three days."

NEW YORK.

COUNTY MEDICAL ASSOCIATION. — At a meeting of the New York County Medical Association held June 20th, Dr. Robert Abrahams read a paper on "The Trendelenburg Position in Prolapse of the Funis." When this hip-elevated position was introduced into gynecology it occurred to Dr. H. Brothers, of the New York Post-Graduate School, that it would possess decided advantages over the knee-chest position for the treatment of prolapsed funis, and in the last three years he had successfully employed it in five cases, two of which had not as yet been published. Dr. Abrahams himself had used it with complete success in two cases, one of which was now reported for the first time. One of its great advantages was that it was an ideal position for the performance of version, so that the labor could be rapidly terminated if the circumstances of the case required. In private practice the patient could be readily placed in the Trendelenburg position by elevating the hips on the back of an inverted chair. Dr. Louis Leichtschein read a paper on "Hypnotism in Pregnancy and Labor." In pregnancy he said it was chiefly useful in correcting loss of appetite and the depraved desire for eating unnatural substances and in controlling pernicious vomiting. In actual labor the benefit to be derived depended on the susceptibility of the patient to the hypnotic influence. Some women were entirely unsusceptible, but in others the pain of parturition could be very greatly alleviated, or, in case of complete susceptibility, entirely obliterated. In one case, in which it had been previously suggested that the labor would be painless, the patient did not know that she was in labor until the head came down upon the perineum, and the child was born before the arrival of the accoucheur. In favorable cases the frequency and force of the uterine contractions could also be increased or diminished by hypnotism, and altogether he considered it a desirable substitute for the use of anesthetics in women who were susceptible to its influence.

TRAINING SCHOOL FOR NURSES. — The first annual graduating exercises of the training school for nurses connected with the Manhattan State Hospital for the Insane were held at the institution on Ward's Island on June 20th. There were sixty graduates — twenty-one men and thirty-nine women — who have completed the two years' course. Short addresses were made by Hon. Henry E. Howland, President of the Board of Managers, Dr. A. E. MacDonald, General Superintendent and Bishop Henry C. Potter.

Recreation Pier. — Another new recreation pier, the first on the Hudson River side of the city, was opened with appropriate ceremonies at the foot of Barrow Street, adjoining the Christopher Street ferry, on June 25th. The pier is 670 feet long by 50 broad, and is fitted up with retiring rooms and modern conveniences, while six male attendants and six matrons are on duty to preserve order and care for the wants of women and children. The lower portion of the pier is leased to the Catskill line of steamers, and the income thus derived will be sufficient to pay for the expense of building and maintenance.

Mortality Statistics. — During the four weeks ending June 18th there has been a very gratifying reduction of the mortality of the city. In the four weeks preceding the number of deaths reported represented an annual death-rate of 18.62 per thousand of the estimated population, but in these last four weeks the average death-rate was only 16.41. During the week ending June 4th the death-rate reached the lowest point yet recorded in the Greater New York, namely, 15.99. In this "banner" week the Borough of Brooklyn bore off the palm, with a death-rate of 14.78, while that of Manhattan was 15.94, Richmond, 17.68, Queens, 19.56, and Bronx, 23.22. In the week previous, however, the Borough of Richmond "broke the record" with a death-rate of only 10.45. In the week ending June 11th we find that the death-rate in the Borough of the Bronx, which is always comparatively larger on account of the many large institutions located there and which of late has averaged about 25, reached the low figure of 17.51. Comparing the mortality from the various infectious diseases in the four weeks ending June 18th with that in the four weeks preceding, we find that the average number of deaths per week from diphtheria decreased from 35.5 to 29, scarlet fever, 22 to 17, typhoid fever, from 5.5 to 4.5, and pulmonary tuberculosis, 154 to 136. The most marked reduction in the mortality was in pneumonia, in which the average number of deaths per week decreased from 190.5 to 126.

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Miscellany.

THE HEROISM OF MEDICAL MEN IN THE CUBAN CAMPAIGN.

Close upon the news of the death of Dr. Gibbs at Guantanamo comes the intelligence of the courage of Surgeon Church of the First Volunteer Infantry in calmly bandaging wounds of a fallen soldier under a heavy fire, and then bringing up a litter and removing him to safety. Colonel Wood, the commander of the regiment, was, it will be remembered, a surgeon in the army, who has earned his title for bravery in leading the regulars against the Indians.

The medical staff of our army already has shown courage equal to that which has distinguished the medical officers of the British Army in India, Africa, and elsewhere, and in spite of which the officers of the line continue to look down upon them as non-combatants.

The *Lancet* of June 18th calls attention to the fact that the Cross of the Legion of Honor has been conferred upon Dr. Abbatucci, a French naval surgeon, "for gallant conduct under circumstances which recall the brave conduct in the New Zealand war of two officers of the Army Medical Department — Surgeon-General Mouat, V. C., and the late Surgeon-General (afterwards Director-General) Mackinnon. The description of Dr. Abbatucci's exploit in the *Journal Officiel* runs as follows: 'In the affair at Diagourou (Soudan) he not only distinguished himself by attending to the wounded under fire, but also took a prominent part in repelling the enemy, with his own hands keeping up a well-directed rifle fire in order to encourage by his example a section of *tirailleurs*, and subsequently doing gunner's duty for an officer of artillery whose men for the most part were *hors de combat*.'"

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A NEW ELEMENT IN THE ATMOSPHERE, KRYPTON.

Prof. W. Ramsay, of University College, London, communicated to the French Academy of Sciences on June 6th, and to the Royal Society on June 9th, an account of the discovery of a new element in the atmosphere. This gas, of which air contains probably not more than 1 part in 10,000 of its volume, was obtained from a volume of 750 c. c. of liquid air supplied to Professor Ramsay, and to Mr. Morris W. Travers, who has been associated with him in this research, by Dr. Hampson. This volume was reduced by evaporation to 10 c. c. This residue was purified from oxygen by metallic copper, and from nitrogen by a mixture of magnesium dust, and lime, followed by sparking with oxygen in presence of caustic soda for five or six hours. There then remained 26 c. c. of a gas which presented, besides the weakly-defined spectrum of argon, an additional spectrum till then unknown. It was characterized by two exceedingly brilliant lines, one being almost identical with D 3. The other, green, may be compared in intensity with the green line of helium. Its wave length was 5566.3. Another, slightly weaker, gave 5557.3. The density of the gas was approximately 22.5, that of oxygen being 16. According to the velocity of sound, the ratio of specific calorics is 1,666, the same as that of argon and helium. It therefore follows that the new gas is monatomic and is an element. The position of this new element, which is less volatile than oxygen, nitrogen or argon, in the periodical table has not been determined in an absolute manner, but the conjecture is hazarded that the pure gas has a density of 40 and an atomic weight of 80, and that it may be classed with helium. M. Berthelot, through whom the communication was made to the Academy of Sciences, has examined, in a Plücker tube, a small supply of the new gas sent to him by Professor Ramsay, and has verified the spectroscopic observations. — *British Medical Journal.*

THERAPEUTIC NOTES.

Night-Sweats of Phthisis.[1]—Combemale recommends thallium acetate ($TlC_2 H_3 O_2$) in the form of pills, one and one-half grains per day, seldom three grains. This dose is to be administered during four days; if possible, one hour before the expected sweating. The effect lasts usually for eight to ten days. As contrasted with other antihidrotics, thallium acetate is especially effective in patients with cavities also in cases of bronchiectasis and chronic bronchitis, while it fails to exert any effect at the beginning of tuberculous softening, or at the stage of induration. Too large doses (12 to 16 grains) have been observed to cause falling out of the hair.

Abortive Treatment of Erysipelas.[2] — For this Dr. Lobit (of Biarritz) recommends application of collodion with iodoform (iodoformed collodion), or, better still, with iodole. The applications are claimed to be efficacious and painless. His formula is: 90 parts of collodion to 10 parts of iodole.

Effect of Serum in Tetanus.[3] — Boinet and Vié (at a recent meeting of the Academy of Medicine, Paris) draw the following conclusions regarding the effect of serum in tetanus, as based on repeated injections on a patient who was cured: (1) A thorough asepsis of the wound is necessary. (2) The excitability of the nervous and muscular systems must be allayed (dark room, chloral, morphine, etc.). (3) In very severe cases the serum therapy must be supplemented by the Bacelli method of treatment, which consists in frequent subcutaneous injections of one-third to two-thirds of a drop of a two-per-cent. carbolic-acid solution.

Citric Acid in the Prophylaxis of Whooping-Cough.[4] —Dr. Moncorvo Tilho, of Rio Janeiro, states that the special bacillus of pertussis is destroyed in its chosen home, the larynx, by swabbing the periglottic region with a ten-per-cent solution of citric acid in simple syrup. It also constitutes an efficient prophylaxis against infection. He succeeded in preventing the disease in many children, living with others infected, by this means, or merely by the administration of small quantities of citric lemonade during the day. He considers resorcin and asapral the most effective of other remedies.

A Case of Opium Poisoning Treated Successfully with Potassium Permanganate.— The patient, according to the statement of his wife, drank about a half-ounce of the simple tincture, and when brought to the hospital was in a deeply comatose condition, with all reflexes abolished, with the characteristic pin-hole pupil, severe cyanosis and superficial breathing; but the pulse was full, strong, and 80 per minute, and the urine free from albumin and sugar. Several hours after he had been brought to the hospital (as the cause of poisoning was not known before) the patient received an injection of one and one-half grains of potassium permanganate. During the first half-hour there was no change in his condition, but by the next half-hour the patient awoke from his deep coma, the pupils dilated, the reflexes returned, and respiration became normal. In a few days, during which diurnal variations of temperature were observed, the patient was entirely cured. The reporter,[5] Dr. Rindfleisch, of Königsberg, considers the action of the potassium permanganate as of a purely chemical nature. When potassium permanganate is mixed with a solution of morphine a precipitate of peroxide of manganese is formed, while the union of morphine with the remaining oxygen of the potassium permanganate forms a non-poisonous compound of morphine and oxygen. He recommends the administration, in cases of opium poisoning, of three to six grains of the permanganate in water per os; or, if the administration per os be impracticable, then an injection of a two- to five-per-cent. solution.

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Obituary.

DR. JOSEPH STEDMAN.

Resolutions of the Obstetrical Society of Boston, May 17, 1898.

The name of Dr. Joseph Stedman has been removed by death from the roll of the Obstetrical Society, and the members wish to express, and to enter on their records, their grateful appreciation of his character and his friendship.

They recall with pleasure the strength and manliness of his character, his integrity as a trusted member of the community, his devotion to and standing in the profession of medicine, to which he had devoted his life. They remember his hearty warmth of friendship and the eager grasp of the hand as he met one both within and without our Society. With such characteristics a good man has left us, and the members of the Obstetrical Society, missing the presence which was so treasured by them, offer this tribute to his memory.

A. D. Sinclair,
F. H. Davenport, } *Committee.*
Francis H. Brown,

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Correspondence.

[Special Correspondence.]

LETTER FROM BERLIN.

KOCH'S MEDICAL OBSERVATIONS IN THE TROPICS.

Berlin, June 10, 1898.

Mr. Editor: — Yesterday evening Prof. Robert Koch, the distinguished bacteriologist, spoke by invitation of the German Colonial Society before an audience that contained many of the distinguished medical men of Germany on "My Medical Observations in the Tropics." Two subjects were mainly treated: Texas Fever, with Professor Koch's substantiation of Prof. Theobald Smith's (Texas) work on that subject; and Malaria, especially the form of that disease which occurs in the tropics. Only a passing reference was made to his study of the rinderpest, the disease which he was sent to German East Africa by the German Imperial government to study. He has not been able to isolate the parasite of the disease, though he has made some most encouraging observations as to the possibility of the serum immunization of the disease.

In Texas fever, which Koch found endemic in German East Africa, he repeated Professor Smith's observations.

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[1] Münch. med. Woch., No. 10, 1898.

[2] Lyon Médical, March 15, 1898.

[3] Münch. med. Woch., No. 20, 1898.

[4] The Therapist, May 14, 1898.

[5] Münch. med. Woch., May 10, 1898.

He found the Pyrosoma (Apiosoma) bigeminum, the double pear-shaped animal parasite that Smith has described. He was able also to confirm the opinion that the disease is conveyed by certain tick-like parasites that infect the animals. His most important observation in this regard was the substantiation of the fact of the conveyance of the disease by young ticks that had been carefully raised away from all infectious influences, except, of course, that acquired by heredity from insect progenitors who had lived on infected animals. A young brood of ticks sent to a distance where no Texas fever had ever been known produced the disease in a herd of animals under these circumstances in twenty-two days. The time before the development of the symptoms was so long that Koch had about given up hope as to the success of his experiments. He considers the observations to have been made under such precautions that any possible source of infection except that through the hereditary infectiveness of the ticks was excluded. This confirmation of the acute American observer's work was received with every sign of interest.

As to malaria, Professor Koch considers that its communication probably involves some such mediate process as that of Texas fever, with the mosquito as the intermediate host. A direct transportation of the contagion from one person to another by the insects is not so probable as the occurrence of a cycle of changes in the mosquito itself that may take more than one generation for their completion. In Africa Koch's party found that mosquito nets formed a most efficient protection against malaria, that the disease exists only on the coast and at the foot of the mountains, where the mosquitoes are plenty, and not on the mountains, where they are absent. On one of the islands where there were no mosquitoes there was no malaria, though islands usually suffer more from the disease.

The forms of malaria he found in East Africa differ from those of temperate climates a good deal. He considers them a group of animal parasitic diseases rather than forms of the same disease. Only 10 per cent. of the malaria of the tropics runs the course of our tertian or quotidian fever. The remaining 90 per cent. consists of three principal forms, distinguished by the length of the intervals between the paroxysms. In the true tropical forms Koch found that the high temperature of the fever stage persisted for thirty-six hours when the disease was allowed to run the course without quinine. That is, the temperature curve ran up abruptly, and then maintained its acme not for four to six hours, as in the malaria of Europe, but for thirty-six hours, and only then descended abruptly.

Untreated in rugged constitutions he found that tropical malaria was self-limited. Successive attacks of the disease were milder until immunity was acquired. He never saw a remittent form of pure malaria, that is, a febrile temperature persisting between the paroxysms; and he thinks it due always to complications, for every disease accompanied by fever, if at all obscure, is set down in the tropics to be malaria. The malaria hematuria, which is so much dreaded and for which a bad prognosis is almost invariably given, he considers due to quinine poisoning. He never saw it in a case where quinine had not been given, and thinks he has good reason to be positive about it, as he is, that it is not of *malarial* but *quinine* origin.

The hematozoon of tropical malaria differs considerably from that of ordinary malaria, and is especially distinguished by being smaller in most of its stages than the parasite that we know through the studies of Italian observers. Just after the paroxysm there is, for instance, a signet-ring form, the side opposite the signet being thickened, crescentic in shape, that recalls the post-paroxysmal signet-ring form of ordinary tertian fever, but it is not half so large. The so-called spores set loose when the rosette form of the parasite breaks up are in tropical malaria not more than one-third the size of those of the ordinary parasite. Koch has never seen them in the blood at this stage, but has found them in the spleen. They are, of course, not spores, and especially have not the vital resistance of true spore forms. They are young plasmodia in reality, and are extremely sensitive to external agents. Their appearance is the signal to give quinine, as it is at this time that quinine influences the disease. Entirely too much of the drug is given in the tropics, and given most unadvisedly. Koch found that one gramme a day (15½ grains) was plenty to secure absolute prophylaxis, and that not much more need be given to patients, even in severe cases. The time for its administration must, however, be judged by the microscope, so that the drug has the chance to exert its microbicidal action on the young delicate organisms.

The therapy of malaria, however, that will make the colonization of the immense continent of South Africa possible by Europeans, must come from immunization. His observations as to the self-limited, ultimately immunizing character of the disease make him feel sure that immunity may be produced. This may be possible even though we should learn no more of the life history of the parasite than we know at present. In rinderpest, for instance, he found it possible to produce immunity without knowing the parasite. In rabies we know absolutely nothing of the microbic cause of the disease yet are successful in its therapy.[1] The battle with malaria along these lines promises much more for humanity and science than all polar explorations, though governments take so much interest in them.[2] Koch's lecture was listened to with the greatest attention, though in a thickly crowded, intensely hot room, and the comments of distinguished German medical men showed that it was considered eminently worthy of the thoroughly practical character of the man, and a most interesting excursion on his part into a new field.

THE BOSTON FLOATING HOSPITAL.

Boston, June 28, 1898.

Mr. Editor: — The Board of Managers of the Boston Floating Hospital wish to announce to the medical profession the organization and the plans of the Hospital for the summer of 1898.

The visiting staff consists of Drs. Samuel Breck, F. Coggeshall, R. W. Hastings, W. E. Fay and E. B. Young.

The boat has been equipped as a permanent hospital, with 39 cots under cover on the lower deck, and complete arrangements for heating that part of the boat which will be used at night.

Arrangements have been made to have one of the house-officers and nurses on board all the time, and for accommodation of the mothers who wish to stay on the boat with their children.

Trips will be made down the harbor daily (weather permitting) except on Sunday, from July 1st to August 31st inclusive.

The boat will start from the south side of Commercial Wharf at 9 a. m., and returning will land day patients at the same place at 4 p. m. Throughout the rest of the twenty-four hours, and on Sunday, it will be moored at the wharf of L. Pickert & Co., near the North Ferry, East Boston. Day patients will be received for the trips between 8 and 9 a. m. Permanent patients will be received at any hour when the boat is at either Commercial Wharf or at Pickert's Wharf, East Boston.

The age of patients is limited to six years.

It is particularly requested that care be taken not to recommend any children that are even suspected to be suffering from any contagious disease, as such cases are rigidly excluded.

A new feature of this season's work will be a systematic attempt to instruct the mothers by explanations and practical demonstrations in the simplest and cheapest effectual methods of preparing and sterilizing infants' food, and in the feeding and general hygiene of children.

Yours very truly, Samuel Breck, M.D.

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[1] This is Koch's first public admission of the value of Pasteur's treatment of rabies.

[2] Another German North Polar expedition had just sailed.

METEOROLOGICAL RECORD

For the week ending June 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	29.85	74	87	61	78	64	71	W.	W.	10	10	F.	F.	
M...13	29.96	61	66	56	97	95	96	N.	E.	6	8	O.	O.	.17
T...14	29.80	68	79	56	91	73	74	E.	W.	3	15	O.	F.	
W...15	30.12	64	71	56	65	42	60	N.	N.W.	24	5	C.	C.	
T...16	30.26	60	71	50	58	65	62	N.W.	S.W.	4	12	C.	O.	
F...17	30.10	67	78	56	61	55	58	N.W.	S.W.	4	12	C.	C.	
S...18	30.02	68	78	58	67	61	63	W.	S.	5	14	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 18, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and croup.	Measles.
New York	3,438,899	1134	399	10.24	11.92	2.88	2.48	1.76
Chicago	1,619.226	—	—	—	—	—	—	—
Philadelphia	1,214,256	499	186	15.80	5.20	9.40	1.80	1.60
St. Louis	570,000	148	39	4.69	4.69	1.34	—	1.34
Baltimore	550,000	173	79	11.40	7 98	2 28	3.42	2.28
Boston	517,732	174	52	6.84	11.97	1.14	1.14	.57
Cincinnati	405,000	90	—	5.55	8.88	2.22	—	1.11
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	103	59	34.30	5.88	27.44	—	.98
Washington	277,000	120	53	29.75	2.55	14 45	.85	.85
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	46	18	12.02	8.68	10·5	—	—
Worcester	105,050	31	9	6.46	6.46	—	3.23	—
Fall River	95,919	28	17	21.42	3.57	21.42	—	—
Nashville	87,754	25	10	32.00	8.00	28.00	—	—
Lowell	87,193	34	12	11.76	5.88	5.88	—	—
Cambridge	86,812	18	3	11.11	—	—	—	—
Lynn	65,220	15	6	6.66	—	—	—	—
Charleston	65,165	25	6	16.00	4.00	16.00	—	—
New Bedford	62,416	16	6	—	6.25	—	—	—
Somerville	57.977	12	1	8.33	—	—	—	—
Lawrence	55,510	14	4	—	7.14	—	—	—
Springfield	54,790	20	2	15.00	—	5.00	—	—
Holyoke	42,364	13	4	23.07	7.69	15.38	—	—
Salem	36,062	10	2	—	20.00	—	—	—
Brockton	35,853	—	—	—	—	—	—	—
Malden	32,894	9	3	44.44	11.11	—	—	—
Chelsea	32,716	4	0	—	25.00	—	—	—
Haverhill	31,406	6	3	16.66	33.33	16.66	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	8	1	—	—	—	—	—
Taunton	27,812	11	4	9.09	9.09	9.09	—	—
Quincy	22,562	4	1	—	—	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	3	1	—	—	—	—	—
Everett	21,575	5	0	—	60.00	—	—	—
North Adams	19,135	5	1	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Chicopee	17,368	9	5	—	—	—	—	—
Brookline	16,164	—	—	—	—	—	—	—
Medford	15,832	3	1	—	—	—	—	—

Deaths reported 2,836: under five years of age 1,011; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 367, consumption 326, acute lung diseases 259, diarrheal diseases 166, diphtheria and croup 50, measles 40, cerebro-spinal meningitis 28, scarlet fever 26, whooping-cough 26, typhoid fever 26, erysipelas 5

From cerebro-spinal meningitis New York 7, Washington 6, Malden 3, Baltimore and Boston 2 each, Philadelphia, Nashville, Worcester, Lowell, Cambridge, Lynn, Holyoke and Clinton 1 each. From scarlet fever New York 17, Philadelphia and Washington 2 each, St. Louis, Cincinnati and Pittsburg 1 each. From whooping-cough New York 10, Philadelphia and Pittsburgh 1 each. From typhoid fever Philadelphia 7, Washington 6, St. Louis, Baltimore and Boston 2 each, Cincinnati, Pittsburg, Lowell, Somerville and Malden 1 each. From erysipelas New York 3, Philadelphia and Washington 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending June 11th, the death-rate was 16.9. Deaths reported 3,643; acute diseases of the respiratory organs (London) 212, measles 131, whooping-cough 103, diarrhea 57, diphtheria 42, scarlet fever 27, fever 20.

The death-rates ranged from 8.4 in Croydon to 24.1 in Newcastle-on-Tyne; Birmingham 17.2, Bradford 16.3, Cardiff 12.3, Huddersfield 14.3, Leeds 17.4, Leicester 19.7, Liverpool 20.4, London 16.3, Manchester 20.3, Nottingham 14.6, Portsmouth 16.8, Sheffield 18.4, West Ham 12.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 18, 1898, TO JUNE 24, 1898.

A board of officers to consist of **Colonel Charles C. Byrne**, assistant surgeon-general, **Major James P. Kimball**, surgeon, and **Major John D. Hall**, surgeon, is appointed to meet at Governors Island, New York City, for the examination of such officers of the medical department as may be ordered before it to determine their fitness for promotion.

Captain William C. Gorgas, assistant surgeon. ordered to report to the president of the examining board, New York City, for examination for promotion.

Captain Jefferson R. Kean, assistant surgeon, U. S. A., ordered to Jacksonville, Fla., to report to **Major-General Fitzhugh Lee**, U. S. V., commanding 7th Army Corps, for duty.

Captain Peter R. Egan, assistant surgeon, U. S. A., ordered to Tampa, Fla., to report to **Major-General John J. Coppinger**, U. S. V., commanding 4th Army Corps.

Captain Henry R. Stiles, assistant surgeon, U. S. A., having reported in person to the Surgeon-General of the Army, will report in person to **Major Charles Richard**, surgeon, in charge of hospital trains, for duty.

Captan John S Kulp, assistant surgeon, U. S. A., ordered to Camp George H. Thomas, Chickamauga National Park, Ga., and will report to **Major-General James F. Wade**, U. S. V., commanding 3d Army Corps, for duty.

Major Charles Richard, surgeon, U. S. A., having reported in person to the Surgeon General of the Army, is assigned to duty in charge of the hospital train.

Major Junius L. Powell, surgeon, will proceed from Fort Riley, Kan., to Mobile, Ala., and report in person to **Brigadier-General William C. Oates**, U. S. V., 4th Army Corps, for duty as chief surgeon on his staff.

Acting Assistant Surgeon **Wylie G. Woodruff**, U. S. A., will proceed from Lawrence to Fort Riley, Kan., and report in person to the commanding officer of that post for duty.

Acting Assistant Surgeon **John R. Devereux**, U. S. A., will proceed from this city to Chickamauga, Ga., and report to **Major E. C. Carter**, brigade surgeon, U. S. V., in charge of Leiter General Hospital, for duty.

RECENT DEATHS.

George Melville Frost, M.D., M.M.S.S., died in Peabody, June 20, 1898, aged fifty-five years.

Eben Jackson, M.D., M.M.S.S., died in Somerville, June 22, 1898, aged seventy-three years.

BOOKS AND PAMPHLETS RECEIVED

The Arid Atmosphere of our Houses in Winter. By Dr. Henry J. Barnes, Boston, Mass. Reprint. 1898.

Injuries from "Live" Electric Light and Trolley Wires. By J. J. Brownson, M.D., Dubuque, Io. Reprint. 1898.

Mutual Relations of the Railway Surgeon and the Neurologist. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1898.

Transactions of the Massachusetts Medico-Legal Society, Volume II, No. 8, 1898. Boston: Published by the Society. 1898.

Experiments on the Application of the Roentgen Rays to the Study of Anatomy. By Ernest Amory Codman, M.D., Boston. Reprint. 1898.

Brookline Public Bath. Report of the Committee on Care and Management, with an Appendix containing a Description of the Building, Illustrations, Schedule of Hours, etc. 1898.

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Original Articles.

EXTERNAL ESOPHAGOTOMY FOR IMPACTED FOREIGN BODY.

Two Recent Cases with Recovery in Each.

BY CHARLES A. POWERS, M.D.,
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CASE I. On March 16, 1897, Mr. F., a man of fifty years, while eating his midday meal swallowed a large bolus of mutton, which stuck in his throat. The lodgment of this occasioned considerable pain and effort at regurgitation; immediately afterward he was unable to swallow either solids or liquids. He had removed both upper and lower plates of false teeth before going to the table, and so had been unable to properly masticate.

Shortly after the accident he was seen by Dr. L. M. Walker, who kindly brought him to me an hour later. The patient did not know whether there was bone in the piece of meat swallowed; he complained of pain and of "feeling something" in the throat just below the larynx.

On examination deep pressure behind the cricoid cartilage elicited a little pain; the patient was able to swallow water by taking considerable time and making a good bit of effort. Successive sizes of esophageal bougies were introduced, beginning with one of large calibre; all of these were arrested seven and one-half inches from the dental arcade; unsuccessful attempts were made to grasp the foreign body with an alligator forceps. The patient was advised to attempt to swallow what milk he could.

On the following day, March 17th, he was examined, both morning and afternoon, with the same result as on the preceding day, no instrument passing beyond seven and one-half inches. He could swallow liquids very slowly; a teaspoonful of milk seemed to pass the obstruction after two or three gulps. Attempts at instrumentation provoked much coughing and considerable flow of mucus. He was advised to endeavor to take three pints of milk and six ounces of freshly expressed beef-juice in twenty-four hours, and to move the bowels by rectal enemata.

Examinations were made on March 18th and 19th; the bougies seemed to strike on a solid substance, but no grating could be detected. The patient was taking the amount of food indicated, and the pulse and temperature did not go above the normal. On the afternoon of March 19th operation for the following day was advised, on the ground that a bolus of meat should have been disintegrated after this length of time. The patient was confined to bed and rectal nutrition was ordered.

External esophagotomy at St. Luke's Hospital on March 20, 1897, at 2 P. M. An esophageal bougie was passed just before operation, and again after the patient was under the influence of chloroform. With the chest well elevated and the head extended and drawn to the right side, a four-inch incision was made at the inner border of the sterno-mastoid muscle. This muscle was drawn to the outer side, the sterno-thyroid to the inner side; the internal jugular vein and carotid artery were recognized and retracted to the outer side, the descendens noni nerve and trachea being well drawn to the right side; the recurrent laryngeal nerve was recognized and protected. Palpation at the bottom of the wound and against the spinal column detected a sharp-pointed object, which was apparently in the esophagus and midway between the cricoid cartilage and the head of the sternum. On isolating the trachea and larynx and drawing them well to the opposite side, it seemed more than probable that this was a foreign body; a solid instrument of appropriate curve passed through the mouth could be felt only in the pharynx at the upper part of the wound. An incision was therefore made on this above-mentioned object, which was found to be a sharp corner of a piece of bone; the incision in the esophagus was enlarged to three-quarters of an inch, and the piece of bone (Fig. 1) was removed. It was triangular in shape, with sharp corners, one and one-fourth inches in its greatest length, and one inch on each of the other two sides, flat, about one-eighth of an inch thick; it lay transversely across the esophagus, the wall of which at the point of incision showed beginning ulceration of the mucous coat. When removed, the bone was almost entirely divested of meat. In extracting it great care was taken not to soil the wound; the wound itself was washed and the rent in the esophagus was immediately sewn with a continuous catgut suture, which passed through all of the coats except the mucous. The bottom of the wound at the site of the esophageal opening was well packed with iodoform gauze; this was brought out through the lower part of the wound and the upper half sutured; a large aseptic dressing was applied from the maxillary region to the upper part of the chest. The operation was one and one-half hours in length, and the patient was in good condition at its close. He was ordered to neither swallow nor talk; the mouth was kept moistened; he was given a six-ounce enema of peptonized milk, whiskey and the yolk of an egg every four hours, and during the first thirty-six hours a three-ounce normal salt solution was thrown into the rectum midway between the nutritives.

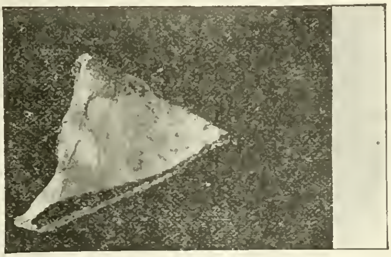

FIG. 1.

Aside from the extreme discomfort which attends the complete withholding of fluids by the mouth the patient had little of which to complain; the pulse did not go above 84 nor the temperature above 100°. On the fourth day the dressing was changed for the first time, and a little suppuration found along the track of the gauze drain. At the end of four days a stomach-tube was passed and nutrients administered through it; feeding by tube was repeated every six hours. The stitches were removed from the upper part of the wound on the seventh day, the lower part suppurating. On the tenth day the patient was allowed to swallow some milk, a little of which came out through the wound in the neck, showing that the rent in the esophagus had not entirely healed. The neck wound was dressed twice daily, carefully cleansed well to its bottom and packed with iodoform gauze; it gradually contracted. On about the twentieth day, fluid swallowed did not appear in the wound, and shortly thereafter the wound itself was entirely closed.

During the first ten days after the operation the patient, who had hitherto been a robust and muscular man, emaciated markedly; but as soon as stomach feeding became adequate he quickly regained his former weight. He has had no difficulty in deglutition since discharge.

Case II. William W., age two and one-half years, while playing with a toy train of cars on March 24, 1897, cried out with pain and ran to his mother; immediately thereafter he was unable to swallow, put his hands to his throat and was evidently in much discomfort. A wheel from one of the cars was found to be missing. Shortly afterward he was examined by the family physician, Dr. H. M. Ogilbee, of Manitou. The little fellow was able to swallow fluids, but any solid food caused much pain and was regurgitated; he was therefore fed on soups, milk, oatmeal mush and the like. A few days afterward he was seen in consultation by Dr. S. E. Solly, of Colorado Springs. The child had lost a little in flesh, but remained fairly well nourished. Inability to swallow solids continued.

On April 9, 1897, sixteen days after the accident, his physician brought him to me in Denver; at this time he was apparently strong and healthy, played about as usual, and was able to swallow milk and thickened liquids with but little difficulty. On the day on which I first saw him, and with the kind assistance of Mr. C. F. Lacombe, an expert electrician, I examined the boy with the aid of the x-ray. Fluorescopic vision distinctly revealed the wheel just above and behind the episternal notch; the rim and spokes stood out with startling distinctness. A picture was taken, the child being chloroformed and lying on its belly with the plate strapped to its chest and neck; a five-minute exposure was intended, but the tube broke at the end of three minutes; the resulting skiagraph, while imperfect, showed the presence and location of the foreign body with sufficient plainness.

On the following day, under chloroform, instrumentation of the esophagus was attempted, but failed, as all of the instruments at my disposal were too large and too stiff for a child of this age; accordingly I had other instruments, smaller and more flexible, sent to me from the East. This necessitated a delay of four days, during which time the child remained in the same good condition.

On April 14th a further attempt was made, under chloroform, to remove the foreign body through the mouth. Careful and painstaking effort was made for about thirty minutes, but with no avail; there was irritation of the pharynx and upper esophagus on hooking the finger behind the epiglottis to guide the instrument, and marked spasm of the glottis with suspended respiration ensued. It was frequently necessary to tip the child up and clear away the mucus. The only instrument which could be introduced into the esophagus was a slender alligator forceps with spiral spring, and the child stopped breathing as soon as this entered the gullet. As Dr. Stedman (who was aiding) well said, the only time which we could utilize for this instrumentation was that during which the child could hold his breath.

Removal through the neck was therefore advised and was undertaken the following day. Shortly before operation a second x-ray picture was taken, in order to ascertain whether the foreign body had changed in position; the resulting picture showed the wheel about one-quarter of an inch lower than when the first skiagraph was taken.

External esophagotomy was performed at 12 m., on the twenty-second day after the accident. A two and one-half inch incision was made along the inner border of the sterno-mastoid muscle from the sterno-clavicular notch upward; the inner border of this muscle was exposed, the omo hyoid brought into view and divided transversely; the sterno-mastoid, together with the large vessels, was retracted to the outer side, the sterno-thyroid being drawn to the opposite side; the recurrent laryngeal and descendens noni nerves were not recognized. The thyroid gland came into view, as did also the remains of the thymus gland, the latter being large in amount, covering the surface of the trachea and markedly obscuring the deep portion of the wound itself. Blunt dissection was made back to the spine, on which were seen the longitudinal fibres of the esophagus; the esophagus was carefully palpated, but no foreign body could be detected. It was therefore opened, one-half inch above the head of the sternum, this incision being enlarged downward until one inch in length. The walls were held apart by silk sutures carefully introduced. About one inch below the lower angle of the wound in the esophagus the upper margin of the wheel was seen; the foreign body (Fig. 2) itself was grasped with forceps and carefully withdrawn; it was so firmly fixed that quite a bit of force was necessary in order to extract it.

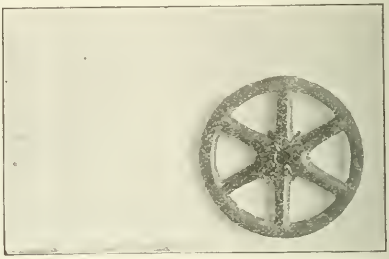

Fig. 2.

There was some vomiting through the esophagus into the wound during the operation; this was promptly washed and sponged away, and the deep portion of the wound carefully protected at all times by gauze. The wound in the esophagus was tightly closed by two layers of interrupted sutures of fine black silk, the inner of these layers passing to but not through the mucous coat. The external wound was thoroughly washed and completely packed, in part with iodoform gauze and in part with plain gauze moistened in a sublimate solution, one part in ten thousand; a large external dressing was applied. The operation was one hour and fifteen minutes in length. The patient was in good condition at its close. A five-drachm rectal enema of peptonized milk containing five grains of bromide of sodium was given every four hours. Nothing was allowed by the mouth until the end of forty-five hours, at which time teaspoonful doses of boiled water were administered, followed a day later by teaspoonful doses of peptonized milk. During these first two days the child was exceedingly restless, sleeping at short intervals and constantly crying for water, but being relieved somewhat by frequent sponge baths. The pulse averaged 130 per minute, the temperature ranged from 100° to 101°; as soon as fluids could be administered by the mouth the little patient became more quiet and the pulse and temperature gradually fell. The first dressing was changed at the end of three days and the wound found to be aseptic; the rent in the esophagus could be seen at the bottom; there was no leakage. The dressing was changed under chloroform daily thereafter, packing being carried well to the bottom; this alternated between weak solutions of bichloride of mercury, carbolic acid and iodoform gauze, in order to avoid the possibility of drug poisoning. The wound gradually filled; there was at no time leakage from the esophagus, the sutures of sterile black silk were buried in the aseptic healing process, and fourteen days after the operation the little fellow was taken back to his home in Manitou. A recent letter from Dr. Ogilbee assures me that he has had no difficulty in swallowing; it is now a year since the operation. During the first few weeks after removal of the foreign body the voice was of high pitch and strident, but it has since resumed its normal tone.

But little need be said in way of comment on the class of accidents exemplified by the foregoing cases. In diagnosis we now have the invaluable assistance of the Röntgen ray; there can be no department of surgery in which this wonderful discovery finds better employment. Certainly it is to be resorted to in every instance in which we suspect the lodgment of a foreign body in the esophagus. In the first of the foregoing cases the picture was of no aid, but the skiagraph was not of the best and the nature and position of the foreign body was such as to render diagnosis even by the best possible picture exceedingly difficult. In the second case fluorescopic examination of the patient made accurate diagnosis absolutely certain; most startling and vivid was the clear and distinct picture of the iron wheel, plainly outlined in its definite relation to the bony thorax.

Management of these foreign bodies impacted in the esophagus must rest, when possible, on extraction through the mouth or on forcing them downward into the stomach; but we are not to forget that efforts at extraction may be in themselves dangerous, as when the sharp corners of a tooth-plate or a piece of bone may be driven into and through the wall of the esophagus; we are to remember the important point laid down by Richardson, of Boston, that the coin-catcher or throat instrument employed in attempting extraction may itself become impacted and necessitate immediate operation for its removal. It is well, therefore, before attempting extraction by instrumentation to have everything in readiness for the immediate performance of external esophagotomy should this be necessary. As one recalls the longitudinal position which the wheel occupied in the little child's gullet, it seems quite possible that a coin-catcher passed below it and drawn upward might so tilt the foreign body as to impact it firmly against the spine or trachea or larynx and so render the instrument itself impossible of withdrawal. Further, we are not to forget that attempts at forcing downward a cervical foreign body may lodge it midway in the thoracic portion of the esophagus, where it would be difficult of access, either by esophagotomy or gastrotomy.

Of the operation itself but little need be said. The incision is the classic one; the various structures are plainly recognized step by step, and the important vessels and nerves carefully protected. After extraction of the foreign body the esophageal wall may be sutured, preferably by tiers of fine black silk, if the wall itself be in good condition; if it be ulcerated, the ulcer may be excised and the wall sutured, or the wound may be left open. The subject has been carefully considered in a recent and extended study by Bull and Walker. Whatever be the management of the wound in the esophagus, the external wound should not be sutured but should be carefully packed to the bottom; this wound may extend to or into the chest, and adequate packing is the best protection against sepsis. If the wound in the esophagus be left open, a stomach tube may be introduced through it at the time of operation, if the surgeon so desires. If the wound in the esophagus be closed primarily, it will be best to withhold everything by the mouth until such time as firm union is probable; distressing thirst may be much relieved by rectal injections and by frequent bathing. Should the stitches in the esophageal wall give way, it will be necessary to pack thoroughly until the hole is closed.

The mortality of the procedure will naturally vary with the different cases. It is most important not to delay operation until malnutrition saps the patient's strength. Further, the sharp corner of a foreign body may speedily ulcerate into and through the esophageal wall. Bull and Walker found the death-rate to be 22.5 per cent. in a total of 167 collected cases, though in the 32 most recent cases the mortality was diminished to 15.6 per cent. The earlier the operation is performed and the less the integrity of the esophageal wall is impaired the better will be the prognosis.

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THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION ON INFANTILE SCURVY IN NORTH AMERICA.[1]

J. P. CROZER GRIFFITH, M.D., CHARLES G. JENNINGS, M.D., JOHN LOVETT MORSE, M.D., COMMITTEE.

(Concluded from Vol. cxxxviii, No. 26, p. 609.)

Diagnosis. — The study of diagnosis has been only incidental, based upon the mistakes made before the disease was recognized in certain cases. The only disease for which infantile scurvy was repeatedly taken appears to have been rheumatism. In several instances the affection of the legs was supposed to be due to sarcoma. The apparent paralytic condition has also been the cause of error in some instances.

Duration of Illness and Prognosis. — The disease is essentially chronic; its course terminating only on the institution of proper treatment. This seems to be proved by the answers contained in the circulars. To the question concerning the *duration of the disease before the case came under observation*, replies were received in 306 cases, of which the following analysis may be made:

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[1] Reported at the Tenth Annual Meeting, Cincinnati, June 2, 1898.

DURATION OF DISEASE BEFORE TREATMENT WAS COMMENCED.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
2	3	1	15	1	18
3	3	2	33	2	42
5	2	3	58	3	31
8	1	4	22	4	14
9	1	5	8	5	4
10	9	6	29	6	7
24	1	7	6	7	2
		8	1	10	1
		10	3	12	1
				2½ yrs.	1

Intensely interesting in this connection are the replies to the next two questions: first, *Duration of illness after treatment was commenced;* and, second, *Duration of treatment before marked improvement was noticed.* To the first question replies concerning 308 cases were received. Of course those fatal during the attack of scurvy are not included here nor those which passed from observation.

Still more striking are the answers to the second question, as to the time when marked improvement was first noticed. There are 311 cases suitable for study in this category, excluding fatal cases and those passing from observation as before. The replies are often astonishing. Nothing is more striking than the speed with which these reports show a grave constitutional disease disappearing under proper treatment. There is certainly no disease for which a more specific treatment can be said to exist. The replies to the last two questions may be conveniently stated in the following tables:

DURATION OF TREATMENT BEFORE MARKED IMPROVEMENT WAS NOTICED.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
1	19	1	47	1	6
2	58	2	27	2	4
3	46	3	8	3	4
4	26	4	1		
5	19	5	1		
6	1	6	1		
7	2				
8	2				
9	1				
10	7				
12	2				

Reported as prompt recovery, 13; at once, 15; immediate, I.

DURATION OF TREATMENT BEFORE RECOVERY WAS COMPLETE.

Days.	Cases.	Weeks.	Cases.	Months.	Cases.
1	6	1	48	1	28
2	5	2	54	2	14
3	14	3	36	3	5
4	8	4	14	4	2
5	5	5	6	5	1
6	1	6	14	6	2
8	2	7	1	7	1
10	17			8	1
12	3			9	1
13	3				
15	2				
16	1				

Reported as immediate, 4; almost immediate, 9.

TREATMENT. — Not so much could be learned of the value of treatment as could be desired on account of the fact that in nearly all cases we have a combination of diet and of medicinal measures, including the use of fruit juices, and it is impossible to determine absolutely which was the active curative agent.

Taking the cases in which treatment was effectual and which are suitable for study, the results may be stated as follows:

I.	Cases recovering under treatment with drugs only (no change in diet)	0
II.	Cases recovering under the use of fruit juice alone (no change in diet)	3
III.	Cases recovering under the use of beef juice alone (no other change in diet)	2
IV.	Cases recovering under the use of beef juice and fruit juice combined, with or without drugs (no change in diet)	6
V.	Cases recovering under the combined effect of change of diet, often including beef juice, and employment of fruit juice, with or without drugs	257
VI.	Cases recovering under change of diet, often including beef juice, and use of drugs (no fruit juice)	20
VII.	Cases recovering under change of diet alone, often including beef juice (no fruit juice)	38

These last two may be properly considered together, since there is no evidence that any treatment with drugs has an appreciable effect upon the disease. So many of the reported cases were treated with drugs alone without result before the correct diagnosis was made and other treatment instituted, that this belief is amply justified. Combining, therefore, Divisions VI and VII, and comparing the statements of the writers regarding the diet employed during treatment and that employed when the scurvy developed, we may make the following table based upon 58 cases.

Again the committee would state that no claim is made that the recovery was the result of the change, but that it quotes merely the statements of the correspondents to the effect that recovery took place after the change was made.

VI AND VII. — RECOVERY FOLLOWING CHANGE IN DIET ALONE, WITH OR WITHOUT DRUGS. (NO FRUIT JUICE EMPLOYED.)

Mellin's food to milk and beef juice	2
“ “ to raw milk and beef juice	1
“ “ to modified milk	4
“ “ to modified milk and beef juice	2
“ “ to diet and beef juice	1
“ “ and sterilized milk to beef juice and broths	1
“ “ and sterilized milk to sterilized milk and beef juice,	2
“ “ and condensed milk to modified milk	1
“ “ and condensed milk to raw milk	2
“ “ and sarcopeptone to fresh milk and beef juice	1
Condensed milk to fresh milk and beef juice	1
“ “ to sterilized milk and diet	1
“ “ to lactated food and raw milk	1
“ “ to sterilized milk	1
Malted milk to milk and diet	1
“ “ to raw milk and beef juice	1
“ “ and amylaceæ to modified Pasteurized milk and beef juice	1
Sterilized milk to diet and beef juice	1
“ “ to fresh milk and beef juice	2
“ “ to raw milk	4
“ “ to diet	6
“ “ to raw milk and beef juice	1
“ “ to sterilized milk and beef juice	1
“ “ peptonized to raw milk and beef juice	1
“ “ to Pasteurized milk and diet	1
“ “ to Pasteurized milk	1
Pasteurized milk to raw milk	2
“ “ to fresh milk and beef juice	1
“ “ to sterilized milk and broths	1
Raw milk to amylaceæ	1
Breast milk to peptonized milk and broths	1
“ “ to sterilized milk	1
Lactated food to raw milk and beef juice	1
Reed & Carnrick's soluble food to modified milk	1
“ “ “ to baked potato	1
“ “ “ to beef juice	1
Imperial granum to raw milk and beef juice	1
Patented food to diet	1
Ridge's food to diet	1
Diet (poor) to diet (better)	2
Bartlett's pepsinated food to fresh milk	1

It must be noted with regard to this table and those following that the term "modified" milk is used very loosely by the reporters. Occasionally it is specified to be laboratory milk, but much oftener this is not the case, and we are unable to know whether the modification was done at home or not, and whether the milk was heated or not. Presumably it was Pasteurized in many instances. Where the term "fresh" milk is employed in the table, we have been unable to learn by additional correspondence whether "raw" milk is meant or whether only a change from proprietary food to cow's milk is intended. The term "diet" as employed in the tables either expresses the fact that a large and varied number of different forms of diet were tried, too complicated to be detailed, or else quotes merely the statement of the writers that a change of diet was made, the original food probably being abandoned entirely unless otherwise stated.

The following table shows the food employed in Divisions I, II, III and IV, in which the diet was the same (except sometimes for the addition of beef juice) while the scurvy was developing and while it was recovering.

Recovery Following with no Change of Diet during Treatment.

I.	Treatment with drugs only		0
II.	Treatment with fruit juice only		3
	Mellin's food (milk sterilized)	1	
	Sterilized milk	2	
III.	Treatment with beef juice only		2
	Sterilized milk	1	
	Raw milk	1	
IV.	Treatment with combined beef juice and fruit juice only,		6
	Sterilized milk	2	
	Sterilized milk and broths	2	
	Sterilized milk and amylaceæ	1	
	Table food	1	

Division V contains by far the largest number of cases, 257 in all. The changes in diet employed are much too complicated to be stated fully in the table. Moreover, they are of little value, since the treatment was such a composite one, namely, change of diet combined with the use of fruit juice in every case, and often of beef juice and of drugs as well. A few of the more striking classes of cases may be selected as follows:

V.—Recovery Following Change of Diet Combined with Fruit Juice, With or Without Drugs.

Condensed milk to milk, variously treated	23
Imperial granum to milk, variously treated	7
Lactopreparata to raw milk	2
Lactated food to milk	1
Reed & Carurick's Soluble Food to milk, variously treated	3
Malted milk to milk, variously treated	38
Mellin's food to milk, variously treated	21
Mellin's food and condensed milk to milk, variously treated	19
Sterilized milk to fresh (probably always raw) milk	34
Sterilized milk to Pasteurized milk	4
Pasteurized milk to "fresh" or "raw" milk	9
Pasteurized milk to sterilized milk	1
Raw milk to sterilized milk	1
Breast milk to cow's milk, variously treated	6

The conclusions to be drawn from this combined study of etiology and of treatment seem justifiable only to the following extent:

(1) That the development of the disease follows in each case the prolonged employment of some diet unsuitable to the individual child, and that often a change of diet which at first thought would seem to be unsuitable may be followed by prompt recovery.

(2) That in spite of this fact regarding individual cases, the combined report of collected cases makes it probable that in these there were certain forms of diet which were particularly prone to be followed by the development of scurvy. First in point of numbers here are to be mentioned the various proprietary foods.

(3) In fine, that in general the cases reported seem to indicate that the farther a food is removed in character from the natural food of a child the more likely its use is to be followed by the development of scurvy.

Fatal Cases. — Twenty-nine of the 379 cases are reported to have died. In 2 of these, death seems to have been remote from the attack of scurvy. Of the remaining 27 the causes as enumerated by the reporters are as follows:

Exhaustion, 6; cerebral hemorrhage, 3; diarrhea, 2; bronchitis, 2; vomiting (?) 1; convulsions, 1; pneumonia, 4; malnutrition, 1; pulmonary hemorrhage, 1; ulcer of stomach, 1; syncope and nephritis, 1; doubtful, 4.

It is difficult to determine in how many of these the scurvy itself could be held responsible for the death; probably in few if any.

Autopsies. — There have been handed in to the committee the reports of 6 autopsies in all, some of them only partial. The salient points of each may be enumerated as follows:

Case of Dr. A. Caillé. Child of nine months, ill about three months. Autopsy showed hemorrhagic spots on the pericardium and surface of the liver; sub-periosteal hemorrhage of the long bones.

Case of Dr. L. E. Holt. Child of twelve months; ill for two months. Autopsy showed separation of the lower epiphysis from the shaft of the left femur; extensive subperiosteal hemorrhage of the left femur; sub-pleural hemorrhages; broncho-pneumonia.

Case of Dr. L. E. Holt. Child of thirteen months; ill about two months. Autopsy showed sub-periosteal hemorrhage and separation of the lower epiphysis of the left femur; hemorrhages into the muscles of the left thigh, swellings about the opposite knee and both ankles; knee-joints normal; minute sub-pleural hemorrhages; well-marked exudative nephritis; minute hemorrhages on the surface of the liver.

Case of W. P. Northrup. (The first autopsy in the United States.) Child of eighteen months; ill about one month. Autopsy showed sub-periosteal hemorrhage of both tibiæ and both femora; detachment of the lower epiphysis of the left femur and maceration of lower end of shaft; broncho-pneumonia of left lung; no rachitic or syphilitic changes on microscopical examination.

Case of Dr. L. Starr. Child thirteen months; ill for three months. Autopsy showed "right leg from knee to ankle stuffed with a puffy mass replacing normal tissue. Separation of both bones one inch above ankle."

Case of Dr. C. W. Townsend. Child of ten months; ill three to four weeks. Autopsy showed bloody serum in pleural cavity; perforating ulcer of the stomach; tubercular (?) process in peritoneum.

In conclusion the committee would thank publicly their correspondents who have sent reports of cases and who are enumerated elsewhere. They are also much indebted to Dr. Wm. Schleif, of Philadelphia, for valuable aid in analyzing the circulars received and tabulating the results.

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Clinical Department.

A CASE OF PAPILLOMATOUS URETHRITIS.

BY F. G. BALCH, M.D., BOSTON.

Tumors of the urethra are of comparatively infrequent occurrence or, at least, are rarely recognized. Papillomata, polypi and carcinomata occur, and I have found one case of keloid reported. Of these, papillomata are the most common. According to Klotz, they occur in or near the meatus frequently, but they are much less common farther down the urethra. Goldenburg thinks they are not rare, certainly not as rare as most authors are inclined to think, and will be found often, the more frequently the endoscopic method is used. The reported cases are not numerous, and, for my own part, I am inclined to consider them of rare occurrence. Papillomata are usually multiple, bleed easily and are sometimes tender.

Polypi are less common than papillomata. They occur oftenest in the membranous and prostatic portions of the urethra. They are found later in life than papillomata are usually single, not very sensitive and do not bleed easily.

Carcinoma of the urethra is exceedingly rare. It was first diagnosticated by means of the urethroscope by Oberländer.

Papillomata of the urethra do not differ histologically from papillomata of the skin. The poypi are fibrous growths covered by mucous membrane. Burkhardt reports one case of a polyp of the mucous membrane of the prostatic portion of the urethra.

Tumors of the urethra give rise to various symptoms, but the commonest are those of an obstinate gleet which refuses to yield to ordinary measures. On examining a urethra with the *bougie à boule*, the growth may simulate very closely a stricture, though, unless of large size, they offer but little resistance to the passage of a sound.

In the case I have to report, nocturnal emissions was the symptom for which the patient came to seek advice, and it is mentioned in other reported cases as a symptom. Goldenburg reports a case where there was retention from a polyp of the deep urethra which acted as a foreign body and caused a spasm of the cut-off muscle. He mentions a case in which Oberländer restored the power of coitus, which had been lost for several years, by removing a prostatic polyp. Eversole reports a case where the symptoms were itching and a gradually diminishing stream.

Papillomata and fibrous polypi can easily be diagnosticated with the urethroscope and their removal will often cure an otherwise untractable gleet.

The removal of these growths is not a very difficult operation, and should be undertaken either by cutting, by caustic or by the cautery. They are just as obstinate to return when they make their appearance inside the urethra as when they come on the outside. Papillomata are easier to remove than the polypi, both because they are nearer the meatus and because they are less firmly attached. Oberländer uses two small wires wound with cotton at the ends and, working through an endoscope, rubs the growth off. Klotz speaks favorably of this method when the growths are near the meatus. Briggs found it inefficient in a case where the growths were deeper down. The galvano cautery is an excellent way of removing both papillomata and polypi. Curved scissors and a snare are two other means which are useful at times. Some operators have used the ordinary Klotz endoscope as a cutting instrument, and having got the growth against the edge, pushed the instrument in, thereby tearing off the tumor. This is a somewhat blind method of procedure and less safe than the others mentioned. The growths can at times be scraped off with a curette against the edge of the endoscope. Trying to curette without something firm to hold the growth against, I found unsatisfactory in my case, but it ought to succeed well in any cases which could be removed by Oberländer's method. After the growths are removed, it is well to touch the base with chromic acid or glacial acetic acid. This can readily be done with a small bit of cotton wound about the end of an applicator. I found glacial acetic acid very satisfactory. It is easily applied and shrivels up the growth very quickly and effectually. They seemed less liable to recur than when I used chromic acid.

There is an instrument made especially for removing growths from the urethra, consisting of two endoscopic tubes, one inside the other. Both have elliptical openings near the end. The inner tube is revolved after the instrument is introduced, so that the openings are opposite each other. The growth is then slipped through the hole and the inner tube rotated so as to cut it off from its base.

One of these methods will do in almost all cases, but there is occasionally a growth where perineal section is the only thing which will succeed. Such a tumor is described by Mr. W. H. Brown in the *Lancet* of April 18, 1891. In this case the tumor was two inches long and attached at both ends. Mr. Brown thought it had probably originated in the bladder, been washed into the urethra and finally become adherent from inflammation. The growth was in a boy of eighteen years. He died of uremia following the passage of a sound, but it is hard to see how the growth could have been removed by any of the usual methods.

Thomas Bryant reports another case of polypus in the prostatic urethra removed by perineal section. The result was very satisfactory, but from the description of the case it seems as if it might have been removed through the urethra. The prostate was greatly enlarged and the polypus appeared to have been an outgrowth from it. It was made up of interlacing bundles of unstriped muscular tissue with no trace of gland structure. It was as large as a large haricot bean.

Dr. George Minges reports a case of keloid of the urethra following an internal urethrotomy. It is the only case of the kind I have been able to find. It seems to have acted much as keloids in other parts of the body, and though thoroughly removed, recurred after each operation.

In operating for growths of the urethra, hemorrhage is usually troublesome only in so far as it interferes with our view of the field of operation. At times it may be quite severe, but is usually readily controlled.

For anesthesia cocaine is usually sufficient. It is used in different strengths by various operators, some using as high as a ten-per-cent. solution. I use four-per-cent. in most urethral operations, and have had no toxic effects, while it renders the urethra entirely insensitive.

J. A. C., twenty years of age, had a mild attack of gonorrhea four years before I first saw him. Apart from that there was no venereal history. For the last four months he had had rather frequent seminal emissions, for which he had had sounds passed. He had had no treatment for a month and a half. Two months before I saw him he had noticed what he thought was a wart growing from the edge of the meatus and a slight purulent discharge from the urethra. No scalding. No exposure. The wart was burned off two or three times with chromic acid, but returned. When I saw him there was considerable obstruction to the flow of urine, which came in a small scattering stream. On December 1, 1894, the meatus having been divided some days before, I put in an endoscope and found the anterior urethra thickly studded with papillary growths, the deepest being about two inches from the meatus. These growths varied in size from one (one-half inch from the meatus) which was as large as a cherry-stone to one about the size of a pin-head; the larger ones were nearest the meatus. Thirty minims of a four-per-cent. solution of cocaine injected into the urethra gave perfect anesthesia. I first tried to remove the growths with a curette, using Brown's wire endoscope. While portions of the growths were readily removed, I had much trouble in scraping off the bases, which were much firmer. I then screwed the endoscope open until the urethra was fully distended and, with my finger on the outside, pushed a growth in so that it projected in between the wires. The endoscope was then drawn out and the sharp edge at the inner end cut the growth off very readily. This process was repeated until the urethra was smooth. The hemorrhage was not troublesome except from obscuring the vision somewhat at times. When all the papillomata had been removed, I again introduced the Klotz endoscope and carefully touched the spots where the growths had been with glacial acetic acid. The whole anterior urethra was then washed out with a solution of boracic acid.

A week later I saw the patient again. There had been some slight hemorrhage after the operation, but he had had no difficulty in controlling it. There was considerable injection of the anterior urethra and considerable ecchymosis under the mucous membrane of the anterior two and one-half inches, but very little tenderness and no return of the growth. The anterior urethra was painted with a solution of nitrate of silver, ten grains to the ounce. After two weeks two or three minute growths appeared near the meatus and were touched with glacial acetic acid. In a week more there was nothing to be seen except a little of the old ecchymosis. I passed Nos. 29 and 30 sounds. A week later I passed Nos. 29, 30 and 31 sounds. There was still a little discoloration of the urethra. Seven weeks later, three months after the operation, there had been no return of the growths and the appearance of the urethra was normal. Nos. 31 and 32 sounds passed easily. Two years later the patient came to me with a small chancroid. The urethra was then in normal condition. Unfortunately the specimens which were saved for microscopic examination were lost, but the growths had the appearance of the ordinary papillomata often seen about the glans penis.

REFERENCES.

T. Bryant. Med. Chir. Transactions, London, 1892–3, lxxvi, 191–196.
R. F. Henry. Western Med. Rep., Chicago, 1892, xiv, 77.
W. McMurray. Australasian Med. Gaz., Sydney, 1891–2, xi, 218.
G. Minges. Med. and Surg. Rep., Philadelphia, 1892, lxvii, 329.
W. H. Brown. Lancet, 1891, 878.
Goldenberg. New York Med. Journal, 1891, 533–535; Med. Record, 1891, 600.
H. R. Wossidlo. Med. Record, September 7, 1895,
Herman G. Klotz. New York Med. Journal, January 26, 1895; New York Med. Journal, November 27, 1886; Med. Record, August, 1881.
Burkhardt. Beit. zur klin. Chir , Tübingen, 1889.
F. R. Eversole. St. Louis Polyclinic, August, 1889.
F. M. Briggs. Boston Med. and Surg. Journal, 1889.
R. H. Harte. University Med. Mag., Philadelphia, 1888.
A System of Genito-Urinary Diseases, Syphilology and Dermatology, edited by Prince A. Morrow. D. Appleton & Co., New York, 1893.
Pathology and Treatment of Venereal Diseases, Robert W. Taylor. Lea Bros. & Co., Philadelphia, 1895.

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VENTRO-SUSPENSION OF THE UTERUS, FOLLOWED BY PREGNANCY AND LABOR WITHOUT COMPLICATION.

BY J. V. MEIGS, M.D., LOWELL, MASS.,
Surgeon to St. John's Hospital.

The following case coming under my care at St. John's Hospital, and upon whom I operated, became pregnant almost immediately after her discharge; and as I have been carefully watching her with great interest, and as her pregnancy has been followed by labor at term with a happy result, I wish to report it and add my tribute to the great value of ventro-suspension in the treatment of perhaps the most disagreeable class of cases with which we come in contact — procedentia uteri. That any form of colporrhaphy, either anterior or posterior, or a combination of the two with Alexander's operation superadded, would have given her the relief — nay, the cure that ventro-suspension has — I have much doubt. Certainly, colporrhaphy would not, for with this operation I have had some experience, and have never seen a complete prolapse cured. As for Alexander's operation, I have never performed it, but feel certain that it would not be of any benefit in cases like this.

Mrs. O., housewife, aged thirty-five, mother of three children, came to me early in May, 1897, complaining of backache, "bearing-down sensation," and incontinence of urine. She also informed me that "something was dropping from her vulva down between her thighs," interfering greatly with her getting about, and that it had been so since the birth of her last child. Upon questioning her, the following history was elicited:

Her first child, a boy, was born in September, 1892, a slow and tedious labor with a slight tear of the perineum. After remaining in bed "the accustomed number of days" she got about, but with a feeling that something was wrong with her uterus, yet she let it go, thinking it would take care of itself. Her second child, a boy, was born in January, 1894, and after getting up, she noticed her trouble was worse than before, yet she hesitated until after due time, or in September, 1896, her third child, a girl, was born with a corresponding increase of trouble, until finally she came to me on the date given above.

Upon examination, made in erect position, I found that "the something" which she described was the uterus, and that it was in a position of complete prolapse with excoriations upon it where it came in contact with her thighs, and with eversion of both anterior and posterior vaginal walls. Examination in dorsal position showed uterus prolapsed, but freely movable. It could be easily replaced, but it would not so remain unless held. She also had a bi-lateral laceration of the cervix and a thick muco-purulent discharge from the uterine canal. Immediate operation was advised, curettement, repair of cervix and ventro-suspension, all to be done at the same time. She acted at once upon my advice and was admitted to St. John's Hospital, May 9, 1897. Operations were made May 11, 1897, after usual preparations:

First curettement was done, cervix was repaired and the abdomen opened in the usual manner, a short incision being made. Upon examining pelvic organs, the right ovary was found to be cystic. It was tied off and removed, and then the fundus of the uterus was brought up to the abdominal wall and two deep sutures of silk were passed through the edges of the wall and through the fundus of the uterus. Other sutures sufficient in number to coapt the edges of the abdominal incision were introduced and all were tied. She went on and made an uninterrupted recovery. The coapting sutures were removed on the ninth day and the suspension sutures on the twelfth day, when examination was made and uterus found to be in correct position. Patient was allowed up on May 27th, or sixteen days after operation, and was discharged in good condition with uterus in perfect position, June 5th, or twenty-four days after operation. She immediately went home, and at once resumed her work without experiencing further trouble. She menstruated in June, shortly after returning home, but missed menstruating the following month.

In August she consulted me and told me that she thought that she was pregnant, and was fearful lest she have trouble on account of the operation. I assured her that she would not, notwithstanding the fact that I was rather afraid that she might have. She went on, however, without mishap and was delivered March 27, 1898, of a girl weighing twelve pounds, Dr. Lawler being in attendance. She states that this baby was the largest, and the labor the easiest that she has ever had, and that her convalescence was the speediest.

I made an examination June 2, 1898, more than two months after confinement, and found the uterus in its normal position. I cannot see that either her pregnancy or her labor were in the least complicated by the ventro-suspension, and sincerely believe that without operation the chances are that pregnancy would not have occurred and, if it had, she would not have gone to term.

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Medical Progress.

ORTHOPEDIC REPORT.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D., BOSTON.

(Concluded from Vol. cxxxviii, No. 26, p. 616.)

ACHILLODYNIA.

Goldthwait[31] reports a case of this affection, of which too little has been written. The exostosis near the tendo-Achillis was diagnosticated by means of palpation, but the diagnosis was confirmed by a skiagraph. The tendo-Archillis was drawn aside and under an anesthetic a large bursa was opened, the lining membrane of which was found to be hypertrophied. Synovial fringes of the bursa were found which being caught between the bone and the tendo-Achillis caused pain. Exostoses, as described by Albert, Brackett and others, were present. The symptoms disappeared for a while by rest, but an operation removing the enlargement of the bone was done with satisfactory results.

FLAT-FOOT.

Kirsch[32] advocates celluloid plates for flat-foot soles. The thickness of the sole varies from one and a half to four millimetres according to the weight of the child. The advantages of celluloid are that it is light, elastic, and more readily worked than metal. The ordinary thickness is sufficient for women and children, but for men should be strengthened by portions of celluloid dissolved in acetone.

CELLULOID AS A SPLINT MATERIAL.

Maass[33] confirms the experience of Landerer and Kirsch in the use of celluloid in making fixative apparatus. The writer uses a solution of celluloid in acetone. The solution is made the thickness of syrup by dissolving scrap celluloid in acetone, several days being taken for making the solution. Over a plaster cast of the part to which the corset or splint is to be applied, strips of thin muslin are wound, and over this the solution is applied and rubbed in; another layer of muslin is then wound on and more of the solution applied, until there are six or eight alternate coats of muslin and celluloid. The corsets are light, firm, elastic and of great durability.

ARTHRODESIS IN THE TIBIO-ASTRAGALOID JOINT IN PARALYTIC JOINTS.

Hennerberg[34] describes four cases. In one of a child, eight and a half years of age, a firm anchylosis followed in nine weeks. In one, a child fifteen and a half years of age, a firm anchylosis was found at the end of three months. In a third, seventeen and a half years of age, after four months firm anchylosis was observed. And in a fourth, success was obtained in a patient twenty years of age, but in this latter case anchylosis was observed five months after the operation.

Kirmisson[35] recommends careful laying bare of the cartilaginous surface of the bone with an ivory wedge placed between the astragalus and calcaneum. He bases his conclusions recommending this method on fifteen operations.

GOUTY DEPOSITS IN THE SOLE OF THE FOOT.

Kittel[36] describes, in the aponeurosis of the foot and in the bones, collections of small particles resembling concretions of sand, which may by the pressure interfere with the locomotion of the patients. In his opinion these are the result of interference with the circulation of the foot, especially long-continued exposure of the foot to wet. Under these conditions a gradually progressive degeneration takes place, which is followed by a necrosis of the tissues; a deposit of urates follows; stiffness, deformity and distortion of certain of the joints takes place. The clinical symptoms are not those of true gout, but are considered by the writer to be an atypical form of gout. Medicinal treatment against gout is useless, as the deposits of the urates are well encapsulated in necrotic tissue beyond the reach of any means of promoting absorption. For treatment, the writer recommends mechanical exercise with massage, accompanied by cloths wet in alkaline solutions.[37]

STUDY OF BLOOD IN RICKETS.

Morse[38] has examined 20 cases of active uncomplicated rickets in infants under two years of age. Three groups, according to the severity of the processes were made; those in which the manifestations are slight; those in which they are more severe; and those in which there is a splenic tumor. He concluded that most cases of rickets are accompanied by anemia of varying severity. As a rule, the severity of the anemia varies with the severity of the rachitic processes. The most common form of anemia is that in which the number of red corpuscles is normal or nearly normal and the percentage of hemaglobin is both absolutely and relatively diminished. The anemia may or may not be accompanied by leucocytosis. Leucocytosis occurs more frequently in cases with splenic tumor than in those without. The writer finds no form of anemia which is characteristic of rickets. The leucocytosis may be due to an increase of all the varieties of white corpuscles. The specific gravity varies with the amount of hemaglobin.

HOT-AIR TREATMENT OF JOINTS.

Charles H. Frazier[39] gives the results, and his conclusions drawn, after using some 300 baths to test its efficacy. The apparatus which he describes does not differ in principle from the ordinary forms which are at present much used. The time given to the bath varied from three-quarters to one hour, care being taken to keep free ventilation for the escape of moisture; and, if necessary, the limb was wiped off during the bath to insure its dryness. The temperature of the bath averaged about 300° F., and in one instance, it registered 375° without discomfort on the part of the patient. In drawing his conclusions, he considers, first, the probable pathological conditions in the joint to be dealt with, and classifies these into (1) those of rheumatic origin, (2) those of tubercular origin, and (3) those of traumatic origin. In the rheumatic, the synovial membrane, ligaments, cartilages and periarticular structures are all involved to a greater or less extent, and consist of thickening with slight injection, and with hyperplasia of the ligamentous structures, which interferes with the movements of the joints. The cartilages are frequently rough, and present erosions. In tubercular joints, there is also a general involvement of all the structures. In the chronic traumatic forms, the articular structures are stiffened with plastic exudate, which afterwards forms a fibrous tissue and adhesions, which are the results of blood-clots or an exudation which bind together the folds of the synovial membrane or the articular surfaces.

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[31] Boston Medical and Surgical Journal, May 27, 1897.

[32] Centralblatt f. Chirurgie, 1896, No. 35.

[33] Wien. med. Blatt., July 15, 1896.

[34] Inaugural Dissertation, Berlin, 1896.

[35] Revue Orthopedie, 1896, No. 2.

[36] Berlin. klin. Woch. 1897, No. 17.

[37] Also, MacKenzie: New York Medical Journal, February 20, 1897.

[38] Boston Medical and Surgical Journal, April 22, 1897.

[39] Annals of Surgery, October, 1897, p. 455.

Judging the individual case from this point of view, he considers that the gain to be accomplished may be accurately judged in the different cases, if the effects by the prolonged use of heat are regarded. The results of this heat are a diffuse hyperemia of the skin showing a dilatation of the capillaries; there is usually the sensation of a numbness of the part, which he considers due to the action of the heat on the superficial sensory nerve filaments; the body temperature of the patient is about one-half to one degree above normal; the pulse is increased from about ten to twenty beats, — all of which suggests an increase of blood-supply to the active part. The patient usually experiences less pain, and more freedom in movement after the application of the heat, which may be due to the anesthetic effect of the heat on the nerve-supply of the joint. Experimentally, the physiological effect of such heat has been shown to be increased arterial tension, the elevation of blood-pressure, dilatation of the blood-vessels, diminution of the erythrocytes, decrease of hemogoblin, increase in the elimination of nitrogen, and increase in the frequency of the heart's action.

The beneficial action of the heat cannot be explained on any constitutional effect where there is a diathesis, but we must consider the result as due to the local influence; and he questions the advisability of this form of treatment to any acute conditions, which are due to any form of infection, or to a diathesis; and particularly may this question be raised in those cases of rheumatic origin in which we theoretically would not wish to decrease the amount of nitrogen eliminated, or for the acute conditions of joints due to some specific form of inflammation, as for instance, tubercular, in which the advisability of increasing the hyperemia would be questionable. Excluding these cases, there is left only those of traumatic origin, and it is in these that this form of treatment has proved most useful. For in this condition, after a joint has been restored to its normal activity, there is no danger of inflammation from any latent diathesis or germ. This does not, however, apply to joints (tubercular, for instance) which have been healed, in which there remains only the result of the previous inflammation.

The details of treatment in 25 cases are given, with the results, both beneficial and negative.

The physiological effect of the local application of hot air on general metabolism is considered separately, and the results by different observers are quoted. Experiments were made by the author upon the patients with the same end in view, and in general coincide with the results of other observers, except in regard to the elimination of nitrogen, the results in his experiments rather pointing to the decreased elimination by the treatment.

He gives the following conclusions of the physiological effects of hot air: (1) temporarily increased circulation, respiration and fever; (2) moderate fungacious local anesthesia; (3) loss of weight, probably due to loss of water from the skin and lungs; (4) a decreased nitrogenous output; (5) the effects of hot-air baths are purely local in origin.

GONORRHEAL INFLAMMATION OF JOINT TENDON SHEATHS AND BURSÆ.[40]

Nasse considers that this form of arthritis has many varieties, but he classifies them roughly under three types: One, characterized by pain as a most prominent symptom, with effusion into the joint, but with little affection of the capsule; another, considered more serious, in which the periarticular tissues are involved, there being little or no joint diffusion, although there may be deposits of pus or fibrino-purulent material; and a third, which is fortunately less common, but has the characteristics of pyemic joint suppuration, which may extend into the periarticular structures resulting in cellulitis. These cases are probably not due to the gonococci, but to other pyogenic organisms. The inflammation of a tendon sheath he considered as common, either alone, or accompaning the arthritis, but with mild constitutional symptoms. The inflammation of the synovial bursæ resembles closely that of the joints and the tendon sheath, but the inflammation is less marked. He considers the treatment to be expectant, consisting of rest and compression, with immobilization, and only in the more severe cases should operative treatment on the joint be attempted, and particularly is this true during any stage of the activity of the original condition. It is usually possible to find the organism in the joints, he having found it in 19 cases out of 30, which were examined for this purpose. The fact is that these metastases usually come late, but not necessarily so, and the process is apparently dependent on the infection of the deeper layers of the mucous membrane of the urethra, rather than to any particular region. Sometimes trauma seems to play a certain part in determining the localization of the metastases.

OSTEOMYELITIS IN INFANCY.[41]

Swoboda has treated this subject. Although this is a disease which has as yet received very little attention, he thinks it is one which should bear more study. The diagnosis is to be made between that of tubercular and syphilitic disease; and yet it frequently is difficult, as tubercular disease as well as osteomyelitis often begins with temperature, pain, and other evidence of an acute invasion. On the study of the cases already published, the following facts he considers as distinctive: (1) the multiplicity of the foci in the bone, (2) the frequency of the separation of the epiphyses, (3) the frequent involvement of the joint, (4) the acute course of disease. For the treatment, he speaks of the rapid cure by the early cutting down on the diseased focus, and evacuating pus and giving drainage. This, however, must be early to be successful.

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[40] Sammlung. klin. Vorträge, N. F., No. 181.

[41] Wien. klin. Woch., 1897, x, 87.

BLENORRHAGIC ARTHRITIS.

König[42] thinks it is advisable in all acute inflammation of the joints to examine the urethra. In 90 per cent. of the cases urethritis will be found. The cases may be divided into four groups: first, where effusion alone occurs; second, where there is formation of fibrin and thickening of the capsule; third, periarticular plegmon with impairment of the action of the tendons and elasticity of the ligaments; fourth, where anchylosis occurs very early. The writer advises the puncture of the joints and the injection of a solution of carbolic. If there is a periarticular affection, the joint should be opened and washed out.

TRIGGER-FINGER.

Jeannin[43] describes, as a cause of this deformity, a narrowing of the tendon sheath of the flexors at some point. The treatment should usually be expectant, as the affection is not infrequently self-limited. Where operative treatment is necessary, it should consist of a widening of the sheath and the complete removal of the obstacle.

Heilborn[44] had an opportunity of observing this affection upon himself. It was developed during his military service, and began with slight pain and a sense of fatigue following a drill at the manual of arms. On the metacarpo-phalangeal joint of the middle finger enlargement was to be felt. A smaller but similar one was felt on the little finger. Straightening of the finger was accompanied by a sharp cracking noise, and bending, with a duller crepitus. Recovery followed an operation, which remained permanent two years after the operation.

A PENDULUM APPARATUS FOR CONTRACTED FINGERS AND HAND.

Nebel[45] describes this apparatus, which consists of an arrangement that can be attached to the side of a table, applicable to increasing the motion of stiff finger-joints. The writer claims that it is surprising how quickly the stiffness of the fingers can be relieved by this pendulum appliance, and with how little pain on the part of the patient. Patients who resist any attempt at passive motion in the ordinary way, after a short time under the correction of the pendulum apparatus, allow considerable motion. The apparatus is modelled according to the principles of Krukenberg, and is a modification of his plan.

THE DEVELOPMENT OF GANGLIA OF JOINTS.

Oelze (Würzburg, 1896), following microscopic examination in five cases, considers the ganglia to result from a colloid degeneration of the periarticular ligamentous tissue. This degeneration takes place in different portions of the cellular tissue. Cavities and cysts are formed which unite. A thickened ligamentous tissue constitutes the walls of the cysts. The contents of the cysts are a homeogeneous mass with a few rice-seed bodies. No endothelium is to be found. These ganglia are most frequently seen on the dorsum of the hand, but they may be found on the palm of the hand, on the knee and on the ankle. Analogous cysts near tendons are more rare but may be observed.

INFANTILE PARALYSIS.

Drobnik[46] describes 16 operations for transplantation of the muscles in infantile paralysis, and states that it is very difficult to determine by electrical examination what muscle is completely destroyed and what muscle can be later developed. He has found atrophied muscles in certain cases which did not react to electrical irritation, in some instances have developed activity after the partial restoration of the use of the limb. The surgeon is careful to plant the tendon in a state of tension so as to admit a relaxed condition of the transplanted muscle. Massage, active and passive motion, should be begun with care. Adhesive plaster is applied for a while to prevent stretching of the newly formed tendon.

CASE OF INFANTILE PARALYSIS IN A CHILD FIFTEEN DAYS OLD, WITH RECOVERY.[47]

This unusual observation is made in the case of a child fifteen days old; the attack began with a paresis of the fingers and toes, and paralysis of the hand, arm and upper arm, and the foot and muscles of the leg. The attack was developed without fever. There were no cerebral symptoms. Complete recovery took place in four weeks.

THE SURGICAL TREATMENT OF CONGENITAL SPASTIC PARALYSIS.

Lorenz[48] advises tenotomy of the spastic muscles, with attempt through separation to lengthen the divided tendons. In spastic equinus the foot should be kept from four to six weeks overcorrected. After this the pronators, the weakened tendo-Achillis, and the whole of the foot can be used. Where the knee is spastically contracted after tenotomy of the tendons of the semi-membranosus and gracilis, a lengthening of the tendons is to be expected, and a stretching of the knee even into the position of a slight genu-recurvation is desirable for a while. Instead of tenotomy, or myotomy of the adductors, Lorenz advises the use of force, under an anesthetic. He prefers stretching to an open myotomy. He combines in certain cases neurectomy with myotomy. All retaining apparatus is laid aside at the end of from four to six weeks. The increasing use of the limb, combined with massage, electricity and active gymnastics, will in time enable the patient to get about without apparatus.

SPASMODIC TORTICOLLIS.

Quervain[49] has collected 12 cases, operated upon by Kocher, in which a number of the muscles of the neck were involved. The operation consisted not in a division of the nerve, but the resection of a portion of the muscle affected. The first step of the operation is the removal of a portion of the sterno-cleido muscle two to three centimetres long at its upper attachment. An incision in the skin is then made, and after the superficial fascia is divided, the cucullaris, splenius complexus major and minor are cut through. After stopping hemorrhage the wound is sewed. In typical cases, the sterno-cleido muscles on one side are operated upon and the neck muscles on the other where the inclination of the head to one side was the chief deformity. Both operations were done on one side, and if the head was drawn backward, the neck muscles on both sides are divided. Kocher saw no evil results following this operation and in seven out of the eight, the attacks ceased completely. In four, the cure had lasted for one year; and in two, twelve years after the operation. In three, improvement followed; and in two, recovery did not take place because, according to Kocher, a sufficient portion of the divided muscle was not removed. Cutting or stretching of the nervous accessories has been done by Kocher seven times without benefit.

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[42] Sammlung. klin. Portrage, No. 170, 1896.
[43] Inaugural Dissertation, Paris, 1895.
[44] Loc. cit., Erlangen, 1895.
[45] Zeitschrift für Orth. Chir., 1897, p. 17, Band v, Heft 1.
[46] Zeitschrift für Ch'rurgie, Bd. xliii.
[47] Münch. med. Woch., 1879, No. 23.
[48] Wien. klin. Woch., 1897, Nos. 21, 25 and 27.
[49] Semaine Méd., 1896.

Meyer[50] describes five cases of what he calls a rotating tic, and considers them chiefly functional disturbances of the brain caused by overstrain of the body or nerves.

Walton[51] reports that resection of the spinal accessory is rarely sufficient, though this and perhaps the section of the sterno-mastoid should be done as a preliminary operation. In exceptional cases where the rotators and sterno-mastoid are affected on the same side, the section of the spinal accessory and posterior branches of the three first spinal nerves can be done at once, the affected muscles should be cut also. In the majority of cases the operation should be done at two sittings.

FORCIBLE CORRECTION OF CONGENITAL DEFORMITIES OF THE NECK.

Reiner,[52] after division of the sterno-cleido-mastoid muscle in a patient sixteen years of age, forcibly corrected the distortion of wry-neck. This was followed by sudden stoppage of breathing necessitating artificial respiration, followed by death, due, in the opinion of the writer, to an interference of the circulation from the compression or stretching of elongated vessels. The writer recommends, in adults, the more gradual correction of the deformity.

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Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

Meeting of the Surgical Section, Denver, June 7, 8, 9 and 10, 1898.

FIRST DAY. — AFTERNOON SESSION.

The meeting was called to order by the Chairman of the Section, Dr. W. L. Rodman, of Louisville, Ky.

The Committee on the Senn Medal, appointed in 897, reported the awarding of the medal to Dr. G. W. Crile of Cleveland, Ohio, for his paper entitled "Experimental Research into the Effects of Temporary Closing of the Carotid Arteries; Report of Case; Exhibition of a New Instrument," and it was ecided that the paper should be read before the Section on Thursday afternoon.

NFLUENCE OF AGE, SEX AND RACE IN SURGICAL AFFECTIONS.

The Chairman then read an address on the above ubject. He referred to the susceptibility of the negro race to certain diseases, particularly local tuberculosis of the glands, skin and bones, but stated that this susceptibility was less than three hundred years ago, although it has been proven that he is still obnoxious to neoplasms, keloids, tetanus, etc.

In commenting on cancer in the colored race, he referred to its great increase within the past fifty years as compared with the white races, and spoke on the relative frequency of cancer of the uterus in the colored race. Sarcoma is much more prevalent than carcinoma among the black, although carcinoma is becoming very frequent in the region of the rectum in these people. One very peculiar fact was reported, namely, the rarity of cancer of the penis in the negro in spite of the great frequency of phimosis.

As to the most common tumors occurring in childhood, sarcoma seems to lead, although cylindroma has been reported in a child of eleven years of age.

Keloid, the speaker believed to be much more common in the black, although more prevalent in the white than is generally supposed to be the case.

With regard to the liability of the sexes to benign tumors, he did not think that there was any noticeable disproportion.

Tuberculosis was stated to be largely on the increase among the negroes, being twice as common as in the white, and also among the Indian boys, due largely to the change from outdoor to indoor life.

Varicocele was believed to be almost unknown among the colored race, and a number of prominent surgeons were reported as being of the same opinion. Almost equally immuned is this race to varicose veins and hemorrhoids.

Tuberculosis of the prostate was reported as being very common among the colored race, while enlarged prostate, in the opinion of the author, as well as Drs. J. P. Bryson and H. H. Mudd of St. Louis, was a very rare occurrence. In explaining the cause for the foregoing statements concerning the rarity of varicocele in the negro, it was mentioned that among other causes for this might be included the facts that although the penis is much larger than in the white men, the testicles do not hang so low, the veins receive better mechanical support, and the negro leads a more lascivious life.

The wearing of corsets and sedentary habits were thought to explain the relative frequency of gall-stones and cholelithiasis in women compared with men, while white people are believed to suffer more frequently than the black from this condition. The better digestion, better teeth and less liability to pathological conditions of the liver were given as causes for the fact that gall-stones were very rarely found in the gall-bladder of the negro.

The greater tendency to arterial degeneration among males was quoted as the reason for the greater frequency of aneurism in males than in females, while the rice diet and habits of the people probably accounted for the rarity of this condition among the Chinese, particularly as compared with England, where it is very frequent. Speaking comparatively as between the races, it was shown that the negro suffered much more than the white from this condition.

In explaining the great mortality from tetanus among colored infants, the speaker dwelt upon the uncleanly habits of the people, and the small amount of attention given to the umbilical cord at birth. In accounting for the greater liability of males to this disease, the increased risks to injuries of various kinds was mentioned, and as an explanation of its frequency among Jewish infants, the unscientific and inexperienced methods employed in performing circumcision were referred to.

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[50] Inauguaral Dissertation, Freiburg, 1896.

[51] Spasmodic Torticollis, American Journal of Medical Sciences, arch, 1898.

[52] Wien. klin. Woch., 1896, No. 43.

As to ovarian tumors, while it was admitted that they could occur at any age and in all races, they were claimed to be uncommon before puberty and after eighty, and even at these periods of life were almost unknown in the colored race, in the opinion of many observers, although the author did not concur in this view, but admitted that when present, they were frequently congenital.

Statistics obtained from many physicians, hospitals, etc., were quoted; but it was pointed out that much difficulty was experienced in making satisfactory comparisons between the races, on account of the fact that the records of hospitals and other places make no distinction between the black and mulattoes.

Dr. A. D. Bevan, of Chicago, read a paper entitled

SURGICAL ANATOMY OF THE BILE TRACTS.

In order to illustrate the important points referred to by the author, a number of diagrams were shown, particularly to emphasize the fact as stated by the author, that a mental picture of the anatomy of the parts and their relations to each other was always advisible for a surgeon. He referred to the fact that surgeons of the present day were not as good anatomists as in years gone by, although as pathologists they were vastly superior to the surgeons of old.

To thoroughly familiarize himself with the anatomy and relative positions of the bile tracts, the speaker performed no less than 40 dissections upon the cadaver, employing at various times four incisions. As none of them met with his approval, he has discarded them; and while in some cases the smallness of the incision was the principal drawback, he preferred not to enlarge them on account of the liability to hernia. The T-shaped incision was so difficult to suture and left the abdominal wall so weak, that he believed it one of the most objectionable of all incisions, and preferred to use one devised by himself, which he divided into two parts called the primary and the extended. The former is employed for exploratory and other similar operations, is shaped like the italic letter *S*, is three or four inches in length and passes along and through the outer border of the rectus muscle. To this incision, when necessary, may be added the secondary or extended portion, which may increase the length from one to three inches, care being exercised not to completely divide the entire thickness of the muscle along the upper portion of the extension. A sharp knife should always be used in making these incisions, and stress was laid upon the great accessibility of the gall-bladder and bile-duct when these incisions were employed. As they run almost entirely parallel with the nerve supply of the abdominal wall, a minimum amount of injury results to these nerves, while hernia is very improbable owing to the relation of the incision to the costal arch, although it should not be brought nearer to the arch than three-quarters of an inch. The essayist recommended silkworm sutures passed through the entire abdominal wall, and the approximation of the skin with a continuous horsehair suture.

Illustrations of the various parts taken from different points of view were recommended for use in the instruction of students, as well as guides to surgeons, and a large number of charts illustrating the importance of this point were shown by the author.

Dr. John B. Hamilton, of Chicago, described in detail a method employed by himself for the purpose of locating the gall-bladder, and stated that he had performed the operation on 25 cadavers in the last two years to determine its feasibility. The method, as described by the speaker, consisted of three lines, the first extending from the ensiform appendix to the superior spine of the ilium, the second, from the umbilicus to the tenth costal junction, and the third transversely to these, the incision being made from one-half to three-quarters of an inch from the intersection of these lines. Atrophy and hypertrophy of the liver were mentioned as factors somewhat disturbing the relations of the gall-bladder; and, as evidence of its vascularity, the speaker referred to two cases of fatal hemorrhage. Commenting on the twist in the cystic duct, sometimes referred to as the S-shaped position, the doctor believed that this was often a cause of obstruction, and thought that this condition might often be relieved, as pointed out by Fenger, by straightening the duct.

Dr. Harris, of Chicago, reported having made a number of dissections in the region of the gall-bladder in order to determine the point referred to in the paper, and heartily agreed with the author of the paper as to the advantages claimed for this method. He also thoroughly agreed as to the excellent results obtained by the employment of the incision mentioned by Dr. Bevan, and cautioned surgeons against gaping of the extended lower end of the incision downward and outward by the employment of accurate suturing.

Dr. J. L. Lord, of Omaha, Neb., read a paper entitled

INTESTINAL OBSTRUCTION FROM GALL-STONES, WITH REPORT OF A CASE.

After referring at some length to the history of the case and the medical treatment, the question of operation was considered, from which the patient recovered without difficulty. As a result of the operation, a specimen was removed which was sharply conical near its lesser extremity, with a small irregular elevation on one side, and this was believed to have given way on the third day after the operation, producing a small perforation and symptoms of peritonitis, which, however, disappeared in the course of two days. Section of this specimen showed it to have a gall-stone for a nucleus, and a partial analysis proved the existence of biliary sediment and fat in large proportions. It is believed that this specimen found its way into the bowel by ulceration, as there was entire absence of history of gall-stone, colic or jaundice.

With regard to the frequency of intestinal obstruction, the speaker claimed that 80 per cent. of the cases occur in women, the great majority in persons well advanced in years, and the manner in which obstruction takes place is usually mechanical from the interrupted passage of a large stone.

Owing to the fact that gall-stones may exist for years without symptons or evidence of their presence, the author did not feel that any reflection could be cast upon the surgeon if he failed to make a diagnosis previous to operation. As to the importance of tympanites in these cases, it was claimed that the nearer the stone was to its origin the less prominent was this symptom. With regard to the possibilities of spontaneous relief by the passage of the stone, from 30 to 50 per cent. was mentioned as the probable number relieved in this way, while the remaining 50 to 80 per cent. died if unrelieved.

Great stress was laid upon the importance of early operation in the cases, which it was argued would reduce the mortality down to a point which would be a credit to the surgeon, and emphasis was laid upon lessening the number of last resort operations. Under ordinary circumstances fecal vomiting was referred to as the signal for operative interference in gall-stone or any other form of obstruction where other adequate measures had been tried without relief.

The author concluded his paper by referring to the great value of lavage of the stomach in the medical and surgical treatment of intestinal obstruction, and stated that it was his usual practice to precede all operations for the relief of this condition by this procedure.

Dr. P. S. Conner, of Cincinnati, read a paper entitled

REMOVAL OF THE STOMACH.

He stated that he had performed this operation fifteen years ago, the patient dying on the table, but he was glad to observe a recent announcement that it had been performed successfully, as he saw no physiological, anatomical or surgical reason why, in cases where the stomach was functionally extinct, as in general infiltration of the gastric walls, it should not be performed as well as any other operation. The great objection, however, to operating in these cases, was mentioned as being due to the fact that the patient was ordinarily too far gone to recover under any circumstances; but he did not think that the inability to preserve the gastric circulation should be mentioned as a contraindication to the operation. If the stomach had practically ceased to exist as far as its usefulness was concerned, and was acting simply as a receiving organ, he saw no reason why it should not be removed, as the lower end of the esophagus could be readily attached to the duodenum or jejunum with the least amount of tension, and with preservation of the intestinal function, it being perfectly possible to dispense entirely with the gastric function.

Dr. D. W. Graham, of Chicago, asked if Dr. Connor apprehended that there would be much difficulty in securing the end of the esophagus where the whole stomach had been removed, as he believed this would be an anatomical impossibility, unless a small portion of the cardiac end was saved.

Dr. Keefer, of St. Louis, referred to the connection between the floor of the fourth ventricle and the liver through the pneumogastric nerve, and did not think it possible to completely remove the stomach, severing the lesser momentum, without cutting the fibres of this nerve going to the liver.

Dr. Harris, of Chicago, reported having removed the entire stomach for carcinoma, in May, 1897, from a man seventy-two years of age, in whom no difficulty was experienced in securing the esophagus to the duodenum, and believed that trouble in this direction depended largely upon the amount of obstruction which was present previous to the operation. He commented on the extreme mobility of the duodenum in cases of carcinoma of the pylorus, permitting the mass to be moved from one side to the other, so that the duodenum could readily be attached to the esophagus. He thought that the right pneumogastric nerve passed into the liver so high up that there was no necessity of interfering with it.

Dr. Connor considered that if any difficulty arose in attaching the esophagus to the duodenum, it could readily be attached to the jejunum. The case operated upon a year ago without any bad effects he believed to be a fair test as to the lack of danger from injury to the pneumogastric nerve. While admitting that the operation would necessarily have a most limited field, he believed there were cases where it was perfectly right and proper to perform it.

Dr. W. J. Mayo, of Rochester, Minn., read a paper entitled

THE DIAGNOSIS AND SURGICAL TREATMENT OF MALIGNANT OBSTRUCTION OF THE PYLORUS, WITH REPORT OF THREE PYLORECTOMIES, AND FOUR GASTROENTEROSTOMIES.

The first part of this paper was devoted to extracts from the writings of various men as to the etiology of carcinoma, and in taking up the question of diagnosis of obstruction of the pylorus, and the resulting dilatation of the stomach; this was stated to be not a difficult matter, although it was admitted to be very difficult to make a differential diagnosis between the malignant and non-malignant character of the obstruction without incision of the abdominal wall. In this connection the history and the results of inspection of the patient as well as the chemical examination of the gastric contents were claimed to be very important factors, while but little benefit was experienced in the use of the x-ray. In seven cases of malignant disease, nothing beyond an exploratory incision was made, but in two of the cases great improvement followed. The speaker divided the treatment of obstructive cancer of the pylorus into the non-operative and the operative, and included among other remedies for the non-operative method, the use of the routine application of the stomach-tube, and the internal administration of bismuth, salol, methyl-blue with three grains of powdered nutmeg after eating, and various gastro-intestinal antiseptics, as well as a carefully regulated diet. In taking up the operative procedures, the two entitled to the most serious consideration were mentioned, and pylorectomy, a radical operation based on the hope of a cure, and gastroenterostomy for palliative purposes. The former, it was claimed, had been very discouraging, owing to the great mortality, but improvements in technique, it was believed, would remove much of this objection. One great cause of the mortality was referred to as imperfect union and the resulting leakage at the suture angle.

The author then referred to the operation which he has employed on three occasions successfully, the steps of which he divided into, first, a median incision above the umbilicus; second, double ligation and division of the necessary amount of gastrohepatic momentum; third, the isolation of the diseased part by a piece of gauze drawn under it, caught on either side by a pair of forceps separating it from the healthy stomach; fourth, the slipping to the right of the end of the stomach and the suturing to each other of the ends of the tied omenta; and, fifth, clean amputation at a healthy point of the duodenum, with the insertion of the Murphy button at least three inches from the suture line. In an appendix to the paper the detailed history of the three cases thus operated upon was given.

Gastroenterostomy was referred to as a much more popular procedure than pylorectomy, and two methods of performing the former operation were mentioned, the suture operation and that of the Murphy button.

The author believed that too much importance had been attached to the question as to whether or not the bowel should be fixed to the anterior or posterior wall of the stomach, and stated that the results were about the same in either case.

The paper concluded with the request that greater stress should be laid upon the importance of careful preparation of a case for operation upon the stomach and great care on the part of the anesthetizer.

Dr. J. B. Murphy, of Chicago, congratulated the author of the paper upon the results obtained, and entirely agreed with him as to the importance of early exploratory incision in these cases for the exposure and examination of the pylorus, a procedure involving a risk of less than one per cent. With regard to performing gastroenterostomy, he regretted that usually before the surgeon was called upon to do this operation the patient had passed beyond the stage where the preservation of his life was possible, just as hysterectomy is often useless in cases of carcinoma of the cervix.

Dr. McArthur, of Chicago, suggested that a passage might be provided prior to the removal of pylorus, instead of the opposite, as is usually the case, believing that the patient would better stand the more serious operation later.

Dr. John B. Hamilton, of Chicago, referred to a case operated upon by himself three years ago where regurgitant vomiting was present, and great emaciation as well as inability to retain anything on the stomach. Since the operation the patient has gained more than fifty pounds, nothing more having been done than the dilatation of the pylorus.

Dr. William F. Metcalf, of Detroit, read a paper entitled

INTESTINAL ANASTOMOSIS BY A NEW METHOD.

The author stated that in view of the fact that various devices were sometimes necessary in intestinal anastomoses, he considered they should possess the following qualifications: first, they should be rigid as to hold the parts firmly in their position; second, they should pass quickly away, so soon as their function was performed; and, thirdly, they should be easy of introduction. The device conceived by the speaker was made of sugar in the form of cylinders of hard candy, and specimens with the cylinders *in situ* as well as diagrams were exhibited, together with a detailed explanation of the method of use. The advantages claimed for the method were these: first, the quick disappearance of the approximator; second, the abilisy to accurately adjust the mesentery; third, the ease and rapidity with which union could be effected; fourth, the cheapness of manufacture; fifth the tendency to prevent accumulation of fluid and formation of abscess beneath the mucous coat; and, sixth, the small amount of surgical ability needed to perform the operation.

Dr. H. H. Grant, of Louisville, Ky., spoke against the employment of devices in intestinal anastomoses, and believed that the necessity for their use was due to a lack of skill on the part of the operator. He admitted that in certain cases the Murphy button was useful, but on the whole he believed these devices took time and added to the risk of hemorrhage.

Dr. Metcalf believed that occasionally time was saved by the employment of mechanical devices, and the results were more accurate as well as the subsequent contraction less.

Dr. Ernest LaPlace, of Philadelphia, read a paper entitled

A NEW METHOD OF PERFORMING INTESTINAL ANASTOMOSIS, AND ENTERORRHAPHY.

The author described in detail the forceps devised for the performance of this operation, and stated that the advantages were, first, rapidity and accuracy of suturing without leaving any foreign substance within the gut; second, the easy adjustment of the forceps to the openings; and third, the various sizes in which the forceps could be made.

He then described the working of the instrument in performing lateral anastomosis, end-to-end anastomosis, and invagination, and showed the instrument together with diagrams.

Dr. MacRae, of Atlanta, Ga., believed that the instrument had a great field for usefulness, and would facilitate these anastomoses considerably.

Dr. LaPlace claimed that it was possible to perform the operation with the instrument in three or four times less time than without it, as well as increase the accuracy of the work, and prevent undue manipulation of the gut during the process of suturing.

Dr. B. Merrill Ricketts, of Cincinnati, O., read a paper entitled

ANEURISM OF THE AORTIC ARCH; SURGICAL TREATMENT BY LIGATION OF THE RIGHT CAROTID AND SUBCLAVIAN ARTERIES, WITH REPORT OF A CASE.

He believed that the successful treatment of aneurism of the arch of the aorta at the present time was practically nil in ways other than surgical. He referred to an operation devised by Christopher Heath in 1865, and to nine additional operations since that time, and recommended recumbency and diet as well as baths and gradual exercise in all cases of aneurism, combined in certain cases with mercury and the iodides, both before and after the ligature. He also commented upon the method of the introduction of wire into the sac both with and without galvanism and considered it the most rational method of dealing with many cases. Reference was made to a case of ligation which died three months later from a rupture of the right auricle, the patient having gained twelve pounds in weight since the operation.

The following classification was suggested: (1) those in which the right subclavian and common carotid should be ligated; (2) those in which wire should be introduced; (3) those in which nothing should be done.

The author closed his paper by giving in detail a case operated upon by himself by ligature, in which complete recovery followed, and submitted a number of conclusions concerning the various operations to be done in different cases.

(To be continued.)

The Maryland State Legislature has appropriated $400,000 to the Johns Hopkins University to tide it over its financial straits, due to the loss sustained in the default of the Baltimore and Ohio Railroad.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular meeting, Monday, April 4, 1898, the President, Dr. R. H. Fitz, in the chair.

Dr. Morton Prince read a paper entitled

HYSTERICAL NEURASTHENIA (PSEUDO-NEURASTHENIA, HYSTERIA WITHOUT STIGMATA).

Dr. F. G. Balch read a paper on

PAPILLOMATOUS URETHRITIS.[1]

Dr. F. M. Briggs: I have been very much interested in this case of Dr. Balch's because I had a case of the kind in 1887, and it took me nearly a year to make the diagnosis. But it must be noted that at that time the endoscope was a novelty, and the general custom was to make the diagnosis of urethral troubles from the history, the symptoms, the sound and the olive-pointed bougie. The patient consulted me in August of the above year, giving a history of an acute attack of gonorrhea some eight years before, from which he supposed he recovered, but which he thought left his urethra in an irritable condition. For the past three years he had noticed that every coitus was followed by a sharp urethritis, which he supposed to be gonorrhea. Injections of permanganate of potash (1 to 2,000) always checked it, but the next time he had intercourse it occurred again. I found no deep urethral or prostatic trouble, and upon examination with Otis's olive-pointed bougies found, upon reaching No. 30, that the sensation was precisely that of stricture. I made a diagnosis of stricture of large calibre, and advised dilatation. He came a few times and then disappeared, returning again in November to resume treatment. He then went through a regular course, and I stretched him from No. 30 up to 40. The patient declined to go on beyond No. 40, and disappeared. I advised him carefully about his habits; but ten days later he reported again as badly off as ever, having had intercourse two days previously.

I saw no more of him until the following July, when he came on account of a new symptom, namely, the discharge was streaked with fresh blood. I then used an endoscope, and found the urethra studded with warty growths for some four and a half inches. I had never heard of such a condition before, and thought that I had struck the first one on record. But upon looking up the literature I found that Oberländer, of Dresden, had described the condition very thoroughly, two years previously. The treatment which he advised was to make two small cotton tampons, which were introduced one after the other through an endoscope, and then by a twisting motion the growths were pulled off. I had some No. 34 endoscopes made, after the Klotz pattern, and attempted to operate by Oberländer's method (*tampon ecrasement*), but found that in this case, where these tampons were large enough to catch and pull off the growths, that they were so large that they could not be moved, and I was afraid of tearing the mucous membrane. I then decided to use a curette, which I did, and removed a large number of growths, working from before backwards. I was very much surprised at the trifling amount of bleeding. It was of no importance. If this treatment is adopted, the one point to be noted is that the penis should be drawn out to its extreme limit before scraping. I introduced the endoscope to a seat of the growths (using a head mirror to localize them), passed the curette to this seat, then partially withdrew the endoscope and pressing my hand firmly over it I drew the penis out as far as possible. I scraped rapidly in all directions. The importance of stretching the penis out is to prevent loose folds of the urethra from being caught between the edge of the curette and the edge of the endoscope, thus wounding it, which could easily occur.

I operated in my office, using cocaine as an anesthetic. I did not see the patient again for a week, when he reported that he had been but little troubled by the operation. His urethra has been sore and micturition painful. There was more or less bleeding for twenty-four hours after the operation. He had a very profuse discharge, which was quickly checked by permanganate injections.

The cure was complete, as he has been entirely free from his old trouble from that day to this. The question was raised at the time as to the danger of subsequent stricture due to the use of the curette. Eight years after the operation I passed a No. 38 sound with great ease.

I have been very much surprised at the total lack of attention paid to this condition by the writers of surgery, and especially of genito-urinary surgery. The condition is undoubtedly rare, but it does occur, and when it occurs it is very clear, very distinct and can be cured. It should certainly be thought of by every one who treats urethral cases, for it is always possible that papillomatous growths may be the real cause of an otherwise obscure urethritis.

Dr. Allen: I have never seen a case since Dr. Briggs's case, although in the ten years that have elapsed since then I have used the endoscope a great deal, and that leads me to agree with Dr. Balch and Dr. Briggs that it is certainly not a common affection. A thing that struck me very much in Dr. Briggs's case was the very friable structure of these growths. They were softer and more gelatinous, it seemed to me, than the ordinary venereal warts that occur under the prepuce. The view through the endoscope was very striking indeed; the whole anterior urethra was completely filled with the growths.

Dr. Balch: I think that Brown's wire endoscope used as a cutting instrument gives the operator a chance to see at the same time that he is cutting the growths off. With the curette you obstruct your view considerably.

Dr. Briggs: You simply use the endoscope to locate the curette and draw the endoscope partially out with the curette left in, and curette to that point, then locate again, and keep on going down from the anterior to the posterior part. I think you will find, if you try it as I described, that the round endoscope is better than Brown's.

"A Lurid Industry." — As such is characterized by the Rome correspondent of the *Lancet* the practice which is said to prevail in Naples, of buying the dirty charpie dressings from the hospitals and selling them after a prefunctory cleansing for use by tailors and upholsterers in padding clothes and furniture. The noble trade of selling cigar stumps pales into insignificance in the light of this "lurid" traffic.

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[1] See page 5 of the Journal.

AMERICAN PEDIATRIC SOCIETY.

Collective Investigation on Infantile Scurvy in North America.[1]

At the Tenth Annual Meeting of the American Pediatric Society, Cincinnati, June 2, 1898, a report on the above subject was presented by a committee consisting of Drs. J. P. Crozier Griffith, Philadelphia; Charles G. Jennings, of Detroit, and John Lovett Morse, of Boston. The following is an abstract of the discussion thereon:

Dr. Christopher: Does this report contain any definite conclusions as to the nature of scurvy? I heard Dr. Griffith give part of one. If it does, it seems to me we should strike them out, for we certainly cannot agree upon them. I will move, then, that all parts of the report giving conclusions be stricken out and all parts relating to the collection of data be retained and as such be published. (Seconded). Now, does it contain any conclusions? It certainly seems to me bad policy for this Society ever to adopt conclusions of any pathological matter. Even in so elaborately established a report as that of the Antitoxin Committee, it is bad policy, and it looks like establishing scientific truths by legislation. The truths are valuable and should be published as far as possible.

Dr. Griffith: I have had several letters, one just before I came from home, from men who wanted to know the conclusions of the committee. If this is to be of any value it must have some conclusions, because nobody except those deeply interested in scurvy will read through the report and the tables. We are not to determine as a committee or a Society what produces scurvy, but we are analyzing reports of physicians. If 300 physicians say in so many cases these children were improperly fed and one physician says there was no improper food, the conclusion is before you. We do not say diet is the cause, but we say from the reports of these physicians, diet seemed to be the cause. As in the long German articles, the conclusions are placed at the end. We cannot get out of the fact that the conclusions are there. I think we ought to sum up here and there the facts that the report indicates.

Dr. Northrup: Why should we gather all these statistics and then put them out in a mass? It is like tabulating the work of a hospital without commenting upon what they have done. I would be very sorry to see this work set aside. It would be like a record that appeared not long ago of 500 cases of rheumatism without any comments.

Dr. Morse: I feel that the conclusions that the committee has drawn up are entirely justified. If anything, they are much milder than the figures seem to indicate. But any further conclusions would call for some expression of opinion from the committee that must be based on their personal experience and it seemed best to leave that out. I feel very strongly that the paper should not be published without the conclusions.

Dr. Jennings: I sincerely regret that my opportunity for examining the report has not been sufficient to express an opinion upon it. From the examination I made I think that the conclusions of the committee are fully justified. Still, it would have pleased me better to have been present at the full meeting of the committee to hear the various expressions and perhaps my individual opinions might have been modified in that way. But as they stand now, the conclusions very nearly express my conclusions of the results of the investigation.

Dr. Booker: I went over the conclusions of the committee. There were some things I did not approve of, but we came by various modifications to something of an agreement and I am satisfied to stand by that agreement. The time we had for reviewing the report was very short, but I am willing to stand by the conclusions we came to.

Dr. Caillé: I think that those conclusions are entirely safe and I do not personally object to them, but I would like to make a very short minority report based upon the cases I have collected.

MINORITY REPORT BY DR. CAILLÉ.

(1) From a study of this report and from due consideration of other known facts, scurvy appears to be a chronic ptomaine poisoning due to the absorption of toxins.

(2) It follows the prolonged use of improper food and abnormal intestinal fermentation is a predisposing factor.

(3) Sterilizing, Pasteurizing or cooking of milk food is not *per se* responsible for the scurvy condition.

(4) A change of food and the administration of fruit juice and treatment of any underlying cause is the rational therapeutic procedure in scurvy.

Dr. Forchheimer: Would it not be better to have the committee meet again and try to come to some conclusion, so that the report can be received as a whole? I move that the report be referred back to the committee with instructions to report to-morrow.

Dr. Christopher withdrew his motion and the motion made by Dr. Forchheimer was carried.

On the following day Dr. Griffith presented the revised report.

Preceding this **Dr. Rowland G. Freeman** opened a discussion on the subject:

SHALL ALL MILK USED FOR INFANT FEEDING BE HEATED FOR THE PURPOSE OF KILLING GERMS? IF SO, AT WHAT TEMPERATURE, AND HOW LONG SHALL THIS TEMPERATURE BE CONTINUED.

General discussion upon the report and the paper of Dr. Freeman then followed.

Dr. Booker: I have not had an opportunity to study the report required for a subject of so great importance to form an opinion upon it, and I beg to be excused from subscribing to it.

Dr. Buckingham: It appears to me that this report in all its bearings is as important a matter as can come before the Society at any time. It is important it should be settled right. It will be a horrible thing to have it settled wrong. It seems to me that having heard the evidence offered to us and the reports made to us to-day, that there is just this to be said: if the evidence is accepted there is only one conclusion that can possibly be drawn and that is, the sterilization of milk has to do with the production of scurvy. When Dr. Caillé presented his minority report it seemed to me that what he did was to proffer the evidence that has come from his personal knowledge and the knowledge of his personal friends rather than the observations of people that he knows very little about. There are just two conclusions that can be drawn: Either sterilization of milk produces scurvy or collective investigations are not a safe way of getting information. For my part I am willing to accept either or both, and do accept both conclusions. But I hope very much we shall not insist upon the public accepting a lot of investigations until we are all united in accepting them. For my own part, I believe sterilization produces scurvy and the only reason it does not do it oftener is because of the imperfect way milk is sterilized. A great deal of milk masquerades under the name sterilized milk that is not sterilized.

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[1] See page 3 of the Journal.

Dr. Booker: When the sterilization of milk was introduced it was heralded by the medical profession as one of the most important advances in medicine. After ten years' experience in this method I am still of the same opinion, that it is one of the greatest advances that has been made in infant feeding. It was not claimed in the beginning that sterilization improved the digestion of milk. That part of the question has attracted so much attention that we have lost sight of the real object of sterilizing milk, that is, the prevention of sickness. The most important diseases which we have to deal with among infants are the digestive disorders in the summer time. The sterilization of the milk offers more advantages in checking or preventing those diseases than any other method which has yet been offered. Now has sterilization of milk so far done anything towards diminishing the summer diarrheas of infants? We have not had reliable statistics to justify us in coming to conclusions. In the first place, sterilized milk has been used heretofore largely among the well-to-do, who are able to give the infants advantages which may of themselves be sufficient to avoid the disease. Again, the methods used for the sterilization of milk have not been sufficient. I believe that disease has been diminished by sterilization of milk and I believe the infantile mortality has been markedly reduced in New York, if I understood the President's address correctly, in the last few years since the sterilization of milk has been largely used there. Whatever the results have been, there is brighter outlook in the future if we can continue along this line. There is a great deal to be done in educating people in the handling of milk. If we can continue educating the people in this way, I believe a great deal will be done towards preventing disease in infants. It is possible that sterilization of milk may injure its nutritive properties to a slight extent. The chemical combinations in milk are held very loosely, and heating may be sufficient to destroy these relations. Heating may also coagulate some of the valuable proteids and to this extent the nutritive properties of milk may be somewhat injured. But the injury done by this is far outweighed by the greater advantage offered in preventing disease. As to the temperature at which milk should be sterilized, much depends upon the object of the sterilization and who is doing the sterilizing.

The ordinary methods of sterilizing milk do not sterilize the milk. They do not destroy certain harmful germs, germs which may not be harmful to the child if introduced into its body, but which are injurious to the milk. These germs are destroyed at a low temperature, such as the bacillus lactis erogenes. Where the hope is only to destroy these germs, and it is understood that this is the object of the sterilization, the low temperature of Pasteurization would be preferable, provided the Pasteurization were conducted by a person who understood it or had the valuable apparatus presented by Dr. Freeman. Unfortunately, this apparatus is expensive and cannot be introduced where it is most needed. If we turn the sterilization over to the family I believe it is better to resort to sterilization than Pasteurization. My own experience has been larger with sterilization than with Pasteurization, and I do not believe there is a very great difference in the disturbance of the digestive qualities of the milk and the nutritive qualities by the one over the other. If the milk is to be kept for any time after its sterilization before it is used, as for journeys, it should be thoroughly sterilized, and that means a sterilization of three to six consecutive days at a high temperature for very many hours.

I particularly want to put myself on record that I do not believe the sterilization of milk causes the disturbances that have been claimed for it. I believe that in all the cases if we could get to the true knowledge of the previous management of the milk we would find it is that which has caused the trouble and not the manner of heating. It may be that certain idiosyncracies of the baby may be of such a nature that the sterilization of the milk will cause injury to the baby, but that may occur with any milk. When we analyze milk and find it normal as far as we can judge from the analysis, it may disagree with the infant. The sterilization, I believe, has no other influence in producing disease. I do not believe it produces scurvy. I believe that is due to the handling of the milk before and afterwards. Very few of us who have sent in reports have made examinations of the handling of the milk. I did not, and I believe very few have done so. That is one reason I am not willing to subscribe to the report. If we could sift all these cases I believe we would find some condition in the milk, outside of sterilization, as we do in Mellin's food, which is mentioned in a number of cases under scurvy. It is very seldom Mellin's food is used as a food; it is not intended as a food but is more intended as a sugar for sweetening the milk. It is a valuable addition in some cases when it is used in that way. In all the answers I have received very few have said that they used Mellin's food alone; it is largely used with milk. If we could find out the true condition of the food before the scurvy was produced we would not find that the food bears such a relation to the disease. The whole subject is too complex and too little understood.

Dr. Winters: Two cases of scurvy which I have seen have a good deal of bearing, I think, on the discussion. One was a child nine months old that was brought to the dispensary too late to be reported to this committee. It was the fifth child, the other four in the family being absolutely healthy. The family history was excellent. This child had extensive changes under the periosteum which extended from the knee down to the ankle. It had the well-known blue line beneath the two front teeth. The child had been fed exclusively for six months on sterilized milk. The other case was a baby five months old, brought to my office in consultation. The father and mother were healthy. This child was fed on Walker-Gordon milk and had never had anything else from its birth. That milk had been under sterilization for forty minutes. Here we have two typical cases of scurvy in which the family history has no bearing, one in which there has been four healthy children, both fed on proper food, and the scurvy, it seems to me, was due to the way in which the food was treated. The food in both cases was proper in composition and it had never caused the slightest digestion disturbances. In the case of the baby fed upon Walker-Gordon milk, the food was continued, but it was directed that it should be heated to 150° for ten minutes. The baby recovered. I have seen in all some two or three dozen cases of scurvy. The one case I spoke of was the only one that I have seen in dispensary practice, although I see thousands of children every year. My own impressions are that if the methods of feeding go on until we gradually meet the tenement people, we will also find scurvy in tenement practice. Every case of scurvy, except this one, I have seen in consultation. I have never used anything but a modification of food except in two cases, one a case which I saw with Dr. Reed, where beef-juice and fruit-juice were used, but the case was fatal.

DR. MORSE: It seems to me that in approaching a collective investigation of any subject, the first thing necessary is to disabuse our minds of any previous ideas we may have held or failed to hold. Then we should analyze our figures and study the result which they show, and we should not modify our result either because it does not agree with our previous points or because it seems to involve some issues which it is not our providence to consider.

In regard to the sterilization of milk it seems to me that we must feel that the cooking of milk to any extent must modify the albuminoids, proteid substances, and have some effect on the emulsion of fat. We must also admit that bacteria in milk do harm and for that reason we should heat milk to a certain extent. We have to meet two dangers, and in each individual case we must settle it according to our best judgment. One danger in connection with sterilized milk is that the public has forgotten that there is anything else in connection with baby's food except cooking it.

DR. JACOBI: I can be very brief, inasmuch as I might have said something similar to what Dr. Morse has said just now. I arise to make a motion that the report and the minority report, and the remarks of Dr. Booker and this whole discussion be printed as it stands. We owe that to those who have done the work and we owe it to ourselves. We should not expect that we can solve the question forever. We must not expect that any report nor anything that any of us say must be accepted by the whole world. It is only a contribution to what has been known before. It would be a pity if the material which has been worked up should be lost. Whoever has spoken last upon this subject feels then that the subject is settled and that there is nothing further to be said about it. That has been so from the beginning of time and it is so now. What we say here and do here and our valuable report should be published, and the medical public who are going to read it will have something new at all events, either a confirmation of their original views or the opposite.

The Chair decided that the motion of Dr. Jacobi was not necessary, since the publication would be made according to the laws of the Society.

DR. ADAMS: I am very much of the opinion expressed by Dr. Morse. We have a right to express our individual views. The investigation was entered into in all honesty and all deductions should be drawn from the figures presented by the public at large just as in the investigation of antitoxin. We have a practice in the medical press of giving the public the benefit of individual opinions and this should be an independent investigation and not clouded by individual opinions. I have made observations in sterilizing milk, and I have my own opinions about scurvy, but I should be governed very much by the valuable report of this committee.

Now as to the discussion of milk. I, with very many members of this Society, took up very early the high sterilization of milk, and was very soon convinced of its impracticability in the vast majority of cases. Then I resorted to the low sterilization. I have tried both methods in the most adverse circumstances, that is, in a hot city where the temperature is often 80° for days at a time. I have done this under the most favorable circumstances with a good corps of good assistants, and I have found one method has yielded entirely satisfactory results. While we have cardinal principles to govern us in feeding infants, we must study each individual case and adapt the methods accordingly. I have sterilized the milk in the Foundling Hospital and in the Children's Hospital, and then I Pasteurized the milk in both of them, and I got bad results in both. Then I Pasteurized at 150° in both and have secured the best milk possible, and in this way I have had the best results. In the past two months I have not had any deaths among sixty children. In private practice, in those cases in which I could get them upon a supply of milk from a dairy under the medical supervision of the Society of the District of Columbia, I did not resort to either method but to my own modification of the milk by siphoning off the cream or the upper part of the milk. In this way I have not since January seen a case of gastro-enteric disease in my own practice. So I think our own experience should guide us rather than that we should lay down that all milk should be sterilized or all Pasteurized.

DR. CAILLÉ: I wish to say one word in Dr. Freeman's favor. I think we are getting a little hysterical in the matter of temperature and we will settle down to a solid basis after a while. The antiseptic principle applied to infant food is one of the greatest advanced in the last half of this century. If the opinion should go out from this Society that sterilization is bad practice, it would be a large retrograde step. It would be all right if it were possible to have absolutely clean milk from the time it is received until it is consumed, but since this is impossible, I prefer the sterilizing process rather than Pasteurization, because Pasteurization is a double process, a heating and a cooling process, and is a complicated thing for the common people to do. For that reason I prefer the temperature of boiling water. In reply to what Dr. Buckingham has said I will only say that my conclusions in the scurvy discussion are based upon the study of all the 370 odd cases, and Dr. Buckingham's conclusions are not based upon those cases. He has simply heard the report read and has not studied it as I have. Therefore, I think he is the bolder man of the two in formulating his conclusions.

DR. JENNINGS: I have nothing further to add. Dr. Morse expressed my views even better than I did, and I stand by that expression.

DR. GRIFFITH: I want to say that Dr. Morse has expressed my views. We are disposed to reflect upon the observers we do not know and say that we do not know anything about them, we do not know whether their milk was properly prepared, etc. I have read through every report sent me, with the exception of the few last ones, which included principally Dr. Holt's batch which I thought it hardly worth while to review. You will be surprised to hear with what care those cases are reported by men we do not know. We say here "sterilization"; they say "sterilized at 212° for so long." It was impossible in the report to make all these classifications. At the same time the committee has taken particular pains not to vouch for the statements made. We do not know how many are accurate, of course, and so we only took the figures received, added them up and gave you the results. That only expresses the tabulation of these cases. In regard to Dr. Freeman's paper, I would like to express my own custom and belief about sterilization and Pasteurization of milk. I do not believe that sterilization does the harm usually attributed to it. It has been the custom among many people for a long time to so-called scald the milk, which raised it to near the temperature of boiling water. I think we do find comparatively little harm from this. At the same time we should get as near as possible the mother's milk. The sterilized or Pasteurized milk is simply a lesser evil. Any condition of this kind is an evil, and the only question is whether the evil of omitting it is not greater than the evil of doing it. Certainly, in my mind it is better to boil the milk thoroughly and long, if necessary, to insure clean milk. If you cannot do that I would prefer Pasteurization, or better than that, raw milk.

Dr. Holt: Most of us believe that at times Pasteurization of the milk is absolutely necessary, especially among certain people at certain times; but here is a thing from the report that may be dangerous and let us admit that. I have seen cases precisely like those reported in which there seemed to be no question about the preparation of the food, and the change from boiled milk or milk which was raw was the only step toward recovery. In my early cases I gave no fruit juice but only changed the food. It seems to me there are many things done in private practice that cannot be done outside. But that there is danger in the prolonged use of sterilized milk, it seems to me, is something we cannot escape if we believe these men have told the truth. It is a thing that will occur at times, and when a baby gets sore gums and sore legs we will know what is wrong.

Dr. Booker: I would like to say that I believe in sterilization of the milk as a preventive measure and not as a food for the whole year. The proper time for using it is from June to October. In the cooler seasons, when we have tolerably pure milk, the raw milk is the best.

Dr. Freeman: Dr. Booker referred to the difficulty of Pasteurizing in poor practice where you cannot have the proper apparatus. It is perfectly practicable to Pasteurize at 80° C. without any apparatus at all, if we will exert a little care, the milk being put on the stove and watched until a film forms on it. That is not true of diluted milk but of pure milk. That requires about fifteen or twenty minutes as a rule. It gives you some error, perhaps, in the way of over-heating rather than under-heating. In regard to Dr. Caillé's remark that one of the disadvantages is that you have to keep all milk cool afterwards, I think that is not true. In sterilization, where pressure was used and the sterilization continued about twenty minutes, we found a growth of bacteria within a day.

On motion, the majority report was adopted by a vote of 18 to 1.

THE BOSTON

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ON THE MULTIPLICATION OF PROFESSORS.

In a recent article in the *Harvard Graduates' Magazine*, Dr. Thomas Dwight, Professor of Anatomy in the Harvard Medical School, discusses tersely, but very decidedly, the question of the increase in the number of professors in the university at large. His general position is unequivocal. He is flatly opposed to the tendency toward expansion of the number of professorships, through the subterfuge of such titles, for example, as associate professor; he believes firmly that each department must have but one head, and that it is as absurd for such an office to have two incumbents as it is impossible for a regiment to have two commanders.

Dr. Dwight states that in ten years in Harvard University the professors have increased at the rate of 32 per cent. and the assistant professors at the rate of 65 per cent., and that many of the latter will soon expect promotion. Owing to the large number of assistant professors and their expectation of promotion, Dr. Dwight sees a certain menace to the university. He believes in dropping an assistant professor when the term of his appointment has expired, if greater merit is to be found elsewhere, but if retained for a second five years, what is to happen at the end of that time? If not dropped, he must be promoted; such at least is the unwritten law. There are three courses, all of which Dr. Dwight looks upon askance, other than dismissal. First, the subject taught may be divided, a principle which, with few exceptions, has already been overdone. Secondly, in Dr. Dwight's words, "When the division can no longer be made properly, it may be made improperly by tacking some more or less frivolous or delusive addition on to the title." This, no doubt, is directed at the prefix "clinical." In the third place, an associate professor may be appointed, "perhaps more honest but probably more disadvantageous." The two latter methods he regards as unjust both to the university and to the head of the department concerned.

What then, is to be done? Evidently here is a real quandary and one which must sooner or later face every progressive institution of learning. Dr. Dwight thinks that, as a rule, the fear is unfounded, that good men are unwilling to remain in a subordinate position for a long period of time; he also thinks that their places may usually be filled by even better men, and that their departure is in no way an unmitigated evil to the parent university. But should, on the other hand, an associate professor be appointed, a difficulty comes when the professor retires, or so at least Dr. Dwight thinks, for then the associate is not to be got rid of, and the assumption apparently is that he must be an inferior man.

The whole article is full of excellent suggestions and should have a salutary influence; it is clearly written from the standpoint of the professor and represents admirably his side, but only his side of the question. There can be no possible doubt, speaking generally, that one of the most pernicious customs in this country is the hopeless multiplication of titles in our educational institutions and particularly in our medical schools. Evidently the places are made for the men and not the men for the places. Within a few days, in conversation, a physician from the West, himself a professor, said that he should prefer a position in the department of "Theory and Practice," but since there were already six professors in that department he felt that it could hardly be further subdivided. The situation is too absurd for serious contemplation. The same conditions, unfortunately, prevail, very near home, and even men of great distinction in their profession are glad to be dubbed with a professor's title, as if it were an honorary degree. Such a situation is unbearable to any right-minded person, and no doubt is doing more to discredit medical teaching than any other one thing. If any protest can avail, it should be forthcoming to check this growing tendency, and we entirely agree with the spirit of Dr. Dwight's article in this regard.

But Dr. Dwight is speaking solely of our conservative larger universities, and even then he finds cause for a warning; other things being equal, the dignity of a university depends upon the care with which its promotions are made. A conservatism in this direction is its most important safeguard. But looking at the matter from a still broader point of view, it must at once be admitted that the ultimate welfare of an institution depends upon the intellectual character of its teaching force. If a university or a medical school is to be truly great it must have nothing short of great men at the head of its various departments. It is just at this point, then, regarding the matter from a purely theoretical point of view, that we think Dr. Dwight's argument falls short of its logical conclusion.

It is certainly possible that the head of a department may be incompetent; he may fall short of the standard of his position in many ways; his methods may be antiquated, he may well have failed to keep pace with the progress in his chosen field; he may be a poor teacher, and a man whose presence in so important a position is a detriment rather than an inspiration. However seldom this may happen, it is at least a possibility which must be met. Evidently nothing could be more deadening in its influence to a whole department than an inefficient man at its head. In our country, and particularly in our medical schools, even the best, there is too often indication that a high position is held as a means and not as an end in itself. It is regarded as valuable because it leads to other things; the mercenary spirit is still too rife to permit of the position being always estimated at its true dignity, and if it is not, the position and ultimately the university must of necessity be the sufferer.

All these unfortunate possibilities Dr. Dwight passes over. Although admitting fully the personal accountability of the professor, and the nature of his trust, he fails to allow for his possible shortcomings, which as human nature is constituted must surely often exist. There is all through his paper the implication that a person who has attained a professorship must be the right man for the place, and a fit director of his department. He nowhere admits the possibility of the dismissal of a full professor, but in speaking of the assistant professor he puts himself on record as in favor of drastic measures. Of reappointment, he says: "Probably this must be the rule while human nature is what it is; but, brutal as it may sound, it is a pity that the fact of holding the place should count against greater merit, should such be obtainable."[1] We know it is impossible, but we must often feel that it is also a pity that any office should be exempt from the rule which Dr. Dwight lays down for the assistant professorship.

But evidently, whether fortunately or not, and whatever his attainments, the professor, once appointed, must stay. Admitting, for the sake of argument, the foregoing, it seems to us reasonable and fair that subordinates in increasing numbers should be given places, always provided their work justifies their appointment. We see no danger to the university in the establishment of the position of associate professor or clinical professor, nor can we see the most remote infringement on the rights of the full professor from the making of such places. He will remain the head of his department always in name, and also in fact, provided his intellectual attainments make him a leader; if they do not, he will be superseded in spite of himself, and should be. Such leadership in no way depends upon a title, but always upon the man himself. If he be really strong and confident of his powers, he need have no anxiety on the score of his associates, be they professors, or assistants of any other sort.

From the point of view of the subordinates we also believe in advancement. It is a legitimate encouragement to their efforts, and we are convinced that the failure to advance men has frequently meant the loss of admirable teachers and investigators. It does not injure a university to be liberal, and certainly the bestowal of a title like associate professor, means nothing more than a recognition of distinguished merit, an attainment, in other words, equal to that of the full professor. When given for such cause, it is hypercriticism to find fault. Such appointments mean added strength in almost every instance, when bestowed in the proper spirit. Why, under these circumstances, a department should "suffer from two heads," it is hard to see. That depends wholly upon the original head, and upon his capacity for leadership, as already indicated. Not infrequently the true strength of a department comes from its assistant and associate professors.

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[1] Harvard Graduates' Magazine, June, 1898, p. 486.

In general, then, we feel very strongly that appointments to teaching positions should be made and retained by the merit-system alone, and that that merit-system should prevail from top to bottom and not be arbitrarily laid aside at any point in the sequence of office. We do not, therefore, agree with Dr. Dwight's conclusion. Speaking of the desirability of a head, which we have in no way questioned, he goes on to say: "What is true of the university as a whole, is, I conceive, true of each department, of which the professor is the natural head. To him belongs the credit of success, from him should be exacted the penalty for failure. To reward merit among the subordinates with a duplicate title and with a share of the rights and duties that belong to the head is nothing more nor less than paying in fiat money. What is worse is, that this is done at the expense of the original holders of the positions."[2]

THE RELATIONSHIP OF PELVIC DISEASE TO NERVOUS AND MENTAL AFFECTIONS.

There is no doubt as to the frequent coincidence of nervous and mental disorders with uterine disease. Whether the pelvic ever stands in direct causal relation to the nervous disease is a question which authorities at the present day are slow to answer in the affirmative. Naturally the specialist, who sees everything from the narrow point of view of his hobby, and who insufficiently recognizes the complexity of causes which are concerned in every biologic or physiologic phenomenon, will sometimes fail to discern in a case of hysteria or neurasthenia anything but a lacerated cervix, an endometritis or a salpingitis demanding treatment, and will quite ignore other factors of prime mportance; and he will be quite disheartened when his radical operation fails to cure the nervous malady. Although the generative organs of woman are intimately allied to her nervous organism, it is not quite rue that woman is, as Michelet says in his celebrated definition, "Une matrice servie par des organes," and here is not now a general belief in a constant relation xisting between hysteria and morbid states of the uterus; in fact, it has been shown that hysteria is not eculiar to the female sex. Moreover, when hysteria appears in the male, it is very generally due to causes other than sexual.

Neurasthenia is a general disease of the nervous system. The influence of overwork, mental and physical, in the production of this common malady, of traumatism, of infectious diseases (especially typhoid fever and *la grippe*), of the depressing passions and emotions, of the abuse of stimulants and narcotics has been insisted upon by all authorities. If morbid states of the uterus may cause neurasthenia, it can only be by their intensity and persistency, and by entailing profound disorders of the general nutrition, of the neurons in particular. It is quite in accord with experience that repeated uterine hemorrhages entail anemia and may entail severe neuroses or psychoneuroses; but the same result would be entailed by prolonged hemorrhages from any other organ. If intense prolonged pain in the pelvis may cause hysteria or any other neurosis in a predisposed subject, so may pain in any other part of the body.

The same may be said of epilepsy, chorea and insanity. It is only exceptionally that these diseases are brought about by the morbid irritation of a grave pelvic disease, or are of known reflex origin.

These views coincide with opinions expressed at the American Medical Association, in Denver, by several of the speakers, notably Dr. Frederick Peterson, of New York, and Dr. F. X. Dercum, of Philadelphia. The doctrine that "a simple laceration of the perineum may cause all the classic symptoms of neurasthenia . . . which disappears when the perineum is restored" found no support from them.

Dr. Peterson thinks that "the pelvic organs play but a small part in nervous complications, which have to do with the entire organism of woman." He affirms that "the pelvic organs have little if any effect upon psychic conditions." "The field of the gynecologist is very limited in the nervous domain."

Dr. Dercum declared that hysteria may exist without pelvic disease. If the two coexist, they have no relation to each other. A woman with some pelvic condition, as laceration of the cervix or perineum, or displaced uterus, may not complain until neurasthenia develops, when she commences to suffer from the symptoms of the pelvic disease. If pelvic disease exists with neurasthenia, the pelvic symptoms become more marked because of increased irritability. He denied the possibility of nervous and mental diseases arising from pelvic operations. The pelvic condition demands operation for the local lesion only, and not to relieve the nervous malady. In cases of profound hysteria, an operation should never be undertaken unless the surgical condition is very urgent. The insanities are not due to local organic disease, but to disease of the neurons, as a result of various derangements of tissue metabolism. Pelvic operations will not cure insanity.

The doctrine of the "reflex effect" of diseases of the pelvic organs on the general nervous system, is apparently being relegated where it belongs.

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[2] Loc. cit., p. 488.

MEDICAL NOTES.

DR. WILLIAM OSLER will succeed Dr. William H. Welch as Dean of the Johns Hopkins Medical School in October.

YELLOW FEVER. — There have been no new cases of yellow fever at McHenry, Miss., in several days, and it is hoped that no more will occur.

PRACTITIONERS IN GREAT BRITAIN. — According to the "Medical Register" for 1898, the total number of legal medical practitioners in the United Kingdom is 34,642. There were 1,066 names removed from the "Register," and 1,230 names were added to the list. This is nearly 200 less than the average number admitted annually during the past five years. The net gain in the number of medical practitioners is therefore only 164.

DEATH AT ONE HUNDRED AND SEVENTEEN. — Mr. Patrick Haggins, said to be the oldest man in Pennsylvania, died recently in Scranton, Pa., aged one hundred and seventeen years. His age is said to be authenticated by records and certificates which show that he was born in County Londonderry, Ireland, November 1, 1781. Mr. Haggins's father died at the age of one hundred and eleven years and his mother at one hundred and seven.

THE FRENCH SURGICAL ASSOCIATION. — The twelfth Congress of the French Surgical Association will be held at the Faculty of Medicine in Paris, beginning October 17, 1898. There will be two principal subjects for discussion, namely, "Nephrotomy," introduced by Guyon and Albarran, and "The Treatment of Goitre (cancer and exophthalmic goitre excepted)," introduced by Reverdin, of Geneva. The Secretary of the Association is M. Lucien Picqué, of Paris.

THE CALCUTTA GENERAL HOSPITAL. — A novel feature of the new general hospital for Europeans in Calcutta, India, the corner-stone of which was recently laid, will be a system of ventilation during the hot and rainy seasons by cold and dried air. During the hot and rainy seasons Calcutta has a temperature ranging from 85° to 95° F., and a humidity which frequently reaches 90 per cent. It is proposed to establish a uniform temperature in the wards, of from 75° to 80° F., and a humidity reduced to about 60 per cent., as a necessary part of the process of cooling the air.

THE PASTEUR MONUMENT. — The monument to Pasteur, which is to be erected in Paris in the space in front of the Pantheon, is now almost completed. M. Falguière, the sculptor, has introduced certain modifications into his original design, in which Pasteur was simply represented as overcoming Death, which was in the act of flight. Now a group of a mother with her child, thanking Pasteur, has been added on the right, while behind the central figure Fame is shown crowning him with laurels. The international subscription to the memorial now amounts to nearly £13,000.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the two weeks ending at noon, July 6, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 32, scarlet fever 13, measles 81, typhoid fever 14.

THE RHODE ISLAND MEDICAL SOCIETY. — The eighty-seventh annual meeting of this society was held in Providence on June 2d, under the presidency of Dr. W. A. Gorton.

THE BURRELL ETHER PRIZE. — The Herbert L. Burrell Ether Prize has been awarded for the term of six months ending July 1st to Mr. Arthur S. Hartwell and Mr. George F. McIntire, who were recommended by the committee as being of equal merit.

IMPORTANT! The *New England Anti-Vivisection Society Monthly* for July, 1898, makes the following startling statement: "It requires ten times as much strychnine to kill a chicken as would suffice to kill a pheasant; yet HALF A DRACHM of this poison has proved fatal to human beings."

NEW YORK.

THE RED CROSS HOSPITAL YACHT. — The hospital yacht, formerly the Admiral, recently purchased for $40,000, sailed on June 29th for Key West with a stock of medical and hospital supplies and two x-ray outfits. On board were four surgeons of the Red Cross Society, Drs. Soliosso and Carbonell, of Cuba, and Drs. Lesser and Sewall, of New York.

PROFESSORS FLINT AND DENNIS OF CORNELL UNIVERSITY MEDICAL DEPARTMENT. — The newly arranged medical department of Cornell University in New York has received two important accessions from the former faculty of Bellevue Hospital Medical College. Dr. Austin Flint, for over a quarter of a century Professor of Physiology and Secretary of the Faculty of the Bellevue School, is to be Professor of Physiology, and Dr. Frederick S. Dennis, for several years past Professor of Surgery of Bellevue, is to be Professor of Clinical Surgery in the Cornell school. A well deserved compliment was paid in the appointment of Dr. Austin Flint, Jr., to the chair of obstetrics in the University and Bellevue Medical College. It is less than ten years since young Dr. Flint was graduated from Bellevue, but his marked ability was early recognized by the late Prof. Wm. T. Lusk, who took him as an assistant. The high reputation of this distinguished medical family is thus well maintained from generation to generation.

DR. FOWLER APPOINTED SURGEON OF VOLUNTEERS. — Dr. George R. Fowler, the eminent Brooklyn surgeon, having received an appointment in the Volunteer medical service with the rank of Major, has been ordered to report immediately to Gen. Fitzhugh Lee, at Jacksonville, Fla.

Typhoid Fever at Camp Alger. — Eight cases of typhoid fever having occurred among the soldiers of the New York Cavalry Squadron at Camp Alger, Virginia, a medical board consisting of Major Coole, Chief Surgeon First Division, Major Along, Chief Surgeon Second Division, and Major Phillips, Brigade Surgeon, made an investigation of the source of trouble and have now reported that four of the cases were contracted before the men left home, as the disease developed within a few days after their arrival at the camp. The other four, contracted while in camp, they state, are without doubt the result of carelessness in drinking water while on practice marches. The board is prompted to this finding because the water used by the cavalry command in camp is either boiled or water that is shipped from New York and certified to as being pure.

Sailing of the "Relief." — The United States hospital ship *Relief*, formerly the John Englis, of the Maine steamship line, sailed for Santiago on July 2d. She is completely fitted up for hospital purposes and under ordinary circumstances can accommodate 300 patients, but in case of emergency is capable of receiving twice that number. The medical staff is under the charge of Major George H. Torney, and consists of eight surgeons, including a microscopist, Dr. Gray. There are four hospital stewards, and assistant stewards, and sixteen specially selected nurses, ten male and six female, from Bellevue Hospital. While the *Relief* flies the Red Cross flag she is not under the control of that organization, but is a regular Government vessel, with every one on board enlisted in the United States service. About thirty of the graduate nurses of the Red Cross Society have started for Tampa within the last few days.

Miscellany.

THE CLINICAL SOCIETY'S COMMITTEE ON ANTITOXIN IN DIPHTHERIA.

In its main results the investigation into the use of ntitoxin in diphtheria, undertaken by a committee of he Clinical Society of London, according to the *Lancet*, armonizes with the experiences which have from ime to time been published in different quarters. The ummary report read by Dr. Church at the last meeting of the Society gives in general terms conclusions hich are eminently favorable to the value of the reatment.

The committee would appear to have taken great ains to avoid fallacies and to have made a rigid selecon of the reports furnished to them from various ospitals in order that erroneous inferences might be voided. By comparison of the series of cases treated ith antitoxin with another series not so treated it ould seem that the use of the serum was marked by reduction in the fatality of diphtheria from 29.6 per nt. to 19.5, a reduction most marked in patients nder the age of five years. But perhaps the most riking evidence of the efficacy of antitoxin, particurly when it is early administered and in adequate amount, is to be found in the results of tracheotomy. It would seem that since its employment there has been a diminution of cases requiring tracheotomy and, what is more obvious, a very marked lessening of the mortality among those subjected to this operation. A fall in fatality-rate from 71.6 per cent. to 36 per cent. speaks volumes and by itself must carry conviction as to the powerful action exerted by antitoxin upon the local process.

The committee inquired into the relative results accruing from variations in the period of the disease at which the injections were made, and also the comparative effects of different amounts injected at once. It was stated, however, that no connection could be discovered between the amount of antitoxin injected and the subsequent occurrence of paralysis. It is instructive to learn that in very nearly one-third of the cases some form of rash, mostly erythematous, occasionally urticarial, supervened at periods varying in the majority of from six to twelve days after the injection. These rashes were accompanied by rise in temperature in about one-half of the cases and in a certain number by joint-pains. As regards suppression of urine no difference was observed in the liability to this grave event amongst those treated and those not treated by antitoxin.

The general result of the inquiry is succinctly yet sufficiently stated to have been "that in the cases treated with antitoxin not only is the mortality notably lessened, but the duration of life in fatal cases is also prolonged," and it is added: "The injection of antitoxin may produce rashes, joint-pains and fever; with these exceptions no prejudical action has been observed in the series of cases investigated to follow even in cases in which a very large amount of antitoxic serum has been used."

The fact that tracheotomy and not intubation is the operation with which the English statistics deal is a curious evidence of insular conservatism. Since the introduction of antitoxin into practice intubation has displaced tracheotomy in this country, and in many European hospitals to a greater extent than ever before. The report as a whole is interesting as adding one more to the long list of favorable antitoxin statistics in diphtheria.

THE CUSTOM OF "DHARNA."[1]

The legal practice in India of *Dharna*, or sitting at a debtor's door and not eating until the debt is paid, still obtains in that country and is as old as the laws of Manu. The debtor must either pay up or move away, or else the creditor will starve himself to death.

This would seem to us a very silly proceeding on the part of the creditor; but Dr. S. R. Steinmetz, in a study of the custom printed in the *Revista Sociologia Italiana* for January of this year, points out that when the meaning and origin of the usage are appreciated, it is by no means so foolish as it looks. Should the creditor die from hunger, the debtor is held responsible for murder, and the terrible penalties of blood revenge will be wreaked upon him by the family of the creditor. Not only the debtor himself, but all his kin or gens will become the targets of a merciless vendetta With this certainty in view, any sacrifice on his part would be wiser than to allow the creditor to perish.

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[1] Science, July 1, 1898.

METEOROLOGICAL RECORD

For the week ending June 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.72	66	70	62	80	64	72	S.W.	S.W.	17	8	O.	O.	.56
M..20	29.70	68	77	59	74	59	66	N.W.	W.	17	7	C.	F.	
T...21	29.80	66	58	73	86	64	75	S.W.	N.W.	12	7	O.	C.	.20
W..22	30.02	61	67	55	69	74	72	N.	N.	9	8	C.	C.	
T...23	30.13	63	72	54	84	74	79	N.	S.W.	7	10	F.	C.	
F...24	29.80	73	85	61	72	55	64	W.	S.W.	10	11	O.	C.	
S...25	29.50	80	92	68	60	68	64	S.W.	N.	12	4	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, June 25, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York . .	3,438,899	1078	428	16.29	9.81	6.66	1.80	2.88
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	387	152	17.16	8.84	9.10	.78	3.96
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	237	120	24.78	6.30	17 22	.84	2.52
Boston . . .	517,732	171	49	8.12	11.60	1.74	1.16	.58
Cincinnati . .	405,000	82	—	7.32	13.42	4.88	—	1.22
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	138	67	25 55	11.68	19.71	—	1.46
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	45	11	11.11	11.11	6 66	—	—
Worcester . .	105,050	26	14	7.70	11.55	3.85	—	—
Fall River . .	95,919	22	11	16.60	12.45	16.60	—	—
Nashville . .	87,754	32	10	15.65	28.17	12.52	3.13	—
Lowell . . .	87,193	35	8	11.44	20.00	5.72	—	2.86
Cambridge . .	86,812	16	7	12.50	12.50	—	—	12.50
Lynn	65,220	—	—	—	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	13	7	15.38	7.69	15.38	—	—
Somerville . .	57,977	24	6	8.33	—	—	—	—
Lawrence . .	55,510	14	9	14.28	14.28	14.28	—	—
Springfield . .	54,790	18	8	22.22	11.11	22.22	—	—
Holyoke . . .	42,364	12	5	16.66	8.33	8.33	—	—
Salem	36,062	10	3	—	—	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	9	2	11.11	—	—	—	—
Chelsea . . .	32,716	17	0	—	5.88	—	—	—
Haverhill . .	31,406	4	1	—	25.00	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	5	0	—	20.00	—	—	—
Taunton . . .	27,812	5	0	20.00	—	—	—	20.00
Quincy . . .	22,562	4	1	—	25.00	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	8	2	—	25.00	—	—	—
Everett . . .	21,575	1	0	—	—	—	—	—
North Adams .	19,135	5	0	—	20.00	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Chicopee . .	17,368	15	8	20.00	20.00	20.00	—	—
Brookline . .	16,164	3	1	—	—	—	—	—
Medford . . .	15,832	3	0	—	33.33	—	—	—

Deaths reported 2,451: under five years of age 932; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 401, consumption 280, diarrheal diseases 210, acute lung diseases 197, diphtheria and croup 61, whooping-cough 29, cerebro-spinal meningitis 27, typhoid fever 25, measles 23, scarlet fever 20, erysipelas 6.

From cerebro-spinal meningitis New York 12, Baltimore and Boston 3 each, Philadelphia, Providence and Somerville 2 each, Worcester, Holyoke and Hyde Park 1 each. From typhoid fever New York 11, Philadelphia 7, Washington 4, Baltimore, Boston and Lowell 1 each. From measles New York 14, Philadelphia and Baltimore 3 each, Boston 2, Cincinnati 1. From scarlet fever New York 15, Baltimore 3, Philadelphia and Malden 1 each. From erysipelas New York 3, Boston 2, Washington 1.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TWENTY-TWO DAYS ENDING JUNE 30, 1898.

Austin, H. W., surgeon. Relieved from duty at Bureau, and directed to rejoin station at Boston, Mass. June 23, 1898. Relieved from duty at Boston, Mass., and directed to proceed to Philadelphia, Pa., and assume command of Service. June 30, 1898.

Irwin, Fairfax, surgeon. Upon being relieved by Surgeon H. W. Austin, to proceed to Boston, Mass., and assume command of Service. June 30, 1898.

Wheeler, W. A., surgeon. To proceed to Cleveland, Ohio, and assume temporary command of Service during absence of Surgeon D. A. Carmichael. June 16, 1898.

Glennan, A. H., passed assistant surgeon, To proceed to Egmont Key Detention Camp, Fla., for special temporary duty. June 9, 1898.

White, J. H., passed assistant surgeon. To proceed to Fontainebleau, Miss., detention camp for special temporary duty. June 14, 1898.

Geddings, H. D., passed assistant surgeon. To proceed to Fontainebleau, Miss., detention camp for special temporary duty. June 9, 1898.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Statesville, N. C., for special temporary duty. June 9, 1898. To proceed to Reidsville, N. C., for special temporary duty. June 28, 1898.

Brown, B. W., passed assistant surgeon. Granted leave of absence for five days. June 28, 1898.

Stewart, W. J. S., passed assistant surgeon. Granted leave of absence for two days from July 1, 1898. June 25, 1898.

Decker, C. E., assistant surgeon. Granted extension of sick leave for one month from June 23, 1898. June 23, 1898.

Tabb, S. R., assistant surgeon. To proceed to Fontainebleau, Miss., detention camp for special temporary duty. June 13, 1898.

Clark, Taliaferro, assistant surgeon. To proceed to Brunswick Quarantine, Ga., and assume temporary command of Service during absence of Sanitary Inspector R. E. L. Burford. June 22, 1898.

Foster, M. H., assistant surgeon. To proceed to Savannah, Ga., and assume temporary command of Service. June 13, 1898.

BOARD CONVENED.

Board convened June 22, 1898, to report by letter on the physical condition of Assistant Surgeon C. E. Decker. Passed Assistant Surgeon A. H. Glennan, Chairman; Passed Assistant Surgeon W. G. Stimpson, Recorder.

RESIGNATION.

Norman, Seaton, assistant surgeon. Resignation accepted to take effect June 22, 1898.

BOOKS AND PAMPHLETS RECEIVED.

Twentieth Annual Report of the Board of Health of the City of Lowell for the year 1897.

Some Observations on Syphilis of the Nervous System. By J. W. Courtney, M.D., Boston. Reprint. 1898.

The Sanitary Redemption of Havana: The Need and the Means. By George Homan, M.D., St. Louis, Mo. Reprint. 1898.

Notes on Malaria in Connection with Meteorological Conditions at Sierra Leone. By Surgeon-Major E. M. Wilson, C.M.G. London: H. K. Lewis. 1898.

Wesen Uwache und Behandlung der Zuckerkrankheit. (Diabetes Mellitus). Von Dr. Albert Lenné, Im Bad Neuenahr. Berlin: Verlag von S. Karger. 1898.

Ueber Naftalan. Von Dr. Friedrich Rosenbaum, Arzt am Michael-Krankenhause in Tiflis. Sonderabdruck aus der "Deutschen Medicinischen Wochenschrift," 1898, No. 14.

Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia University, New York. Vol. V, Part II. For the Collegiate Year 1897–98. Reprint.

Die Technik der Speziellen Therapie für Aertzte und Studierende. Von Dr. F. Gumprecht, Privat docent in Jena. Mit 181 Abbildungen im text. Jena: Verlag von Gustav Fischer. 1898.

Original Articles.

APPENDICITIS.[1]

BY MAURICE H. RICHARDSON, M.D., AND G. W. W. BREWSTER, M.D.

REMARKS BASED UPON A PERSONAL EXPERIENCE OF 750 CASES; INCLUDING 150 CONSECUTIVE CASES SUCCESSFULLY OPERATED UPON "IN THE INTERVAL."

In the present communication a few observations are recorded which, it is hoped, may aid a little in the solution of some of the questions which have arisen in connection with this extremely important disease. It is not intended to discuss the subject in detail, but rather to bring up certain features in which we have taken especial interest. The total number of cases observed includes all those in which the question of appendicitis has been raised. Though in some the symptoms were doubtless due to other lesions, yet in the great majority of cases the diagnosis was shown, either by operation or by autopsy, to be appendicitis. The total number includes not only the cases operated upon by ourselves, but also a few in which the operation was performed by others after we had seen the patient; it includes likewise cases in which we have performed secondary operations, for the cure of hernia, for the removal of the appendix after a drainage operation, or for the closure of a fecal fistula. There are a few in which, after operations by others, we have found hopeless conditions not admitting further interference.

The mass of material is so great that we shall offer at this time only a few remarks, hoping to bring out the views of others upon some of the questions that continue to arise in connection with appendicitis.

The total number of cases up to January 1, 1894, as published in a revised reprint from the *American Journal of the Medical Sciences* was 213. From January 1, 1894, to the end of 1897 we saw in private 435 cases; during the same period, in Dr. Richardson's service at the Massachusetts General Hospital, there were 86, making a total of 734. The cases seen thus far in 1898 have increased the number to 756.

It would be interesting to consider in these cases many points which the scope of the present communication cannot include, but which we hope to bring forward at some future time. For present purposes a few points only are presented, and those chiefly dealing with the question of immediate interference in acute cases, and with the so-called "interval operation."

The most important facts bearing upon questions of treatment may perhaps be best emphasized by a careful investigation of the fatal cases. However grave the successful ones may have seemed at the ime, the fact remains that they *were* successful. Treated in any other way than that in which they were treated, they could not have done more than ecover. In considering the fatal cases, however, the uestion arises whether by any other method of treatment than that which they received they might have een saved.

Of the total number of cases, there have been classed s chronic 69 in which operation, whether advised r not, was not performed; 151 classed as chronic (reapsing or recurring) were operated upon with success.

In private practice there were seen 149 acute cases which recovered without operation. Some of these were afterwards operated upon in the interval.

There were 63 deaths after operation in acute cases, and 31 patients were moribund when first seen, dying almost immediately. There were 221 recoveries after operation. Of these in 100 an abscess was simply drained; in 112 the appendix was removed; in 9 we have no record as to the method of operation.

Operated upon in the quiescent state there were 151 cases and 151 recoveries.

In going over our records it is probable that a few cases have been overlooked. The statistics here given are in the main, however, correct,—certainly no fatal cases have been omitted.

Up to 1894 there were 12 cases in the list of those which were not operated upon that were moribund when first seen. Since that time there have been 19 similar cases, making a total of 31, a percentage of 6.8 in 464 acute cases. Of these 464 acute cases 284 were operated upon, 63 dying after operation. The total mortality of the cases operated upon is 21 per cent. This large mortality is owing to the advanced period of infection at which operation was attempted, for in almost every case there was found to be a general peritonitis. The operation was undertaken as a forlorn hope in some of the cases — cases in which even our present improved methods of technique could offer no effectual means of success. In some of the early cases operation was performed under conditions so hopeless that, had we possessed our present experience, we should not have interfered. Indeed, in the list of cases published in 1894 there were included among the fatal operations one in which the appendix was removed after death, — an error in statistics which is hardly justfiable even when presenting the dark side of one's experience.

In a certain number of cases, however, the fatal result has been owing to the following causes: In one or two there has been a pulmonary embolism. In several an acute septicemia, without a general peritoneal infection; in one pneumonia; in one (doing well) suicide. In one, death followed operation upon a subphrenic abscess after a successful appendectomy by another surgeon. In several cases a secondary abscess has caused death, even after removal of the appendix and thorough separation of all existing adhesions. In several of the fatal cases a localized infection was made general by direct contamination of the healthy peritoneum, in spite of all efforts to prevent this accident.

The danger of converting a localized into a general infection by operating under certain conditions ought perhaps to receive more consideration than it does. That such a catastrophe is not infrequent we are convinced. Moreover, a general infection thus occurring in cases of the severer kind is rapidly and, we believe, almost surely fatal. This type of case is seen most frequently on the third or fourth day. Though the patient's general appearance, temperature, and pulse may be good, it will be noticed that an operation, even the most rapid, will be attended by an immediate constitutional depression deep enough to excite the gravest alarm. In such cases one is only too glad to get the patient to bed alive. It is idle to contend that in such cases this or that method of treating the general peritoneum will give the patient more than an inconsiderable chance. In most cases of death after operation the patient has survived less than twenty-four hours.

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[1] Read before the Boston Society for Medical Improvement, Februy 21, 1898.

On the other hand, fatal cases occur in which the operation is safely withstood, but in which in the course of two or three days a general infection supervenes. In some of these cases cultures taken at the time of the operation have shown no infection of the effused serum; in others this free fluid has been found to be infected. Though a large and constantly increasing percentage of recoveries takes place in these proved general infections, yet a very considerable number proved fatal.

In view of the cases of similar severity and similar local signs which have recovered without operation, and which have later been subjected to the so-called "interval" operation, it seems to us clear that the question of interference on the third or fourth day should be most carefully considered.

It has been demonstrated in more than one case, moreover, that as early even as the first twelve hours a general infection has taken place. In several of these cases an acute intestinal obstruction was supposed to be present. Operation revealed a general fecal contamination. In several the constitutional depression was such that operation, though attempted, was hopeless. Cases of this description will probably be in the future almost if not quite as fatal as in the past, for in them the patient barely survives the shock of the briefest operative measures.

The cause of infection may in some of these cases be appropriately called operative. In some instances we have found two and even three areas of infection. The appendix itself sloughing and perforated is surrounded by thick pus, dark green, or cream-colored. Adjacent to this, especially when the appendix is situated in the pelvis, a localized peritonitis will be found, comprising a large amount of fluid enclosed between adherent intestinal coils, bladder, rectum and pelvic walls. This fluid varies in color, consistency and odor and we may say in virulence. It is often yellow and opaque, of coffee-grounds appearance, or greenish yellow. It is often fecal in odor. This fluid, though not surrounding the appendix, is at some point in direct connection with it. The third area comprising the rest of the peritoneal cavity, whether infected or not, will be found to consist of serum either clear or slightly opaque. Whether this fluid is infected or not can be demonstrated only by culture and bacteriological examination. The fact that it is sometimes turbid does not prove that it is septic.

The course of the infection in cases of this kind is by direct contamination, though apparently the different fluids are shut off from one another by adhesions. It is probable that one surface of the diseased appendix starts the one, another the other. The infection of distant regions takes place, probably, through minute extravasations from the original foci, — contaminations which do not occur until a considerable serous exudate has formed in the general peritoneum. It is not improbable that the three areas of infection differ in age as they do in gross appearances; that this first infection causes a gangrene of the appendicular wall; that this in turn affects its contiguous tissues; that soon after a more or less extensive appendicular abscess supervenes; that a localized peritonitis follows either from the abscess or from a new focus at the appendix itself; and that finally the general and fatal infection occurs. Fortunately this course is confined to a comparatively few cases, and a fatal result by no means follows. Successful interference in this, as in most severe cases, depends upon restraining the infection within moderate limits. This can best be done, in our opinion, by Dr. Harrington's method of gauze packing. Instead of keeping as far as possible away from the peritoneum, and incising well to the outside, Harrington makes his incision toward the median line, well inside the tumor. This cut seeks the immediate opening of the peritoneal cavity without separating the adhesions about the appendix. It gives information at once as to the condition of the general cavity of the peritoneum. Moreover, the situation and extent of the tumor may be determined, though digital exploration must be very carefully made for fear of breaking into the localized infection too soon.

The situation having been recognized with tolerable accuracy, the next step consists in walling about the infected area with gauze. This may be done with great deliberation and nicety if the patient's condition permits. The appendix is separated with the finger, and its immediate locality drained and disinfected. When the appendix is at the brim or below it, a second area of infection is often found. This is allowed to drain outward, and is immediately washed out and disinfected. Should this general serous exudate prove sterile, the patient will recover. Should it prove infected, he may recover, or he may die: it depends on the nature of the infection.

When, however, in spite of every care these infective fluids escape, welling up from their cavities and spreading over the whole field, the chances of recovery are much diminished. Not that recovery is impossible under these conditions, for many cases go on to convalescence; but we cannot but regard the dangers of general infection and death as extremely grave, in spite of careful irrigation by salt solution and the latest methods of treatment.

The fatal cases after operation make a deplorable list. Many of these were recognized as practically hopeless, but the operation was, nevertheless, undertaken. We were sure enough of the fatal result and should have advised against operation but for the occasional recoveries in the face of the most adverse circumstances. Yet subsequently the question always arose whether it would not have been better not to interfere in such cases, in the hope that there might remain a chance of recovery which a desperate operation removed.

A few cases have been included in the list of fatalities in which the operation was performed by others. Most of these fatal cases had their warning, as the history of their lives previous to the fatal attack conclusively shows.

The cases which resulted fatally without operation include the cases which were moribund when first seen. The list is a long one; but the number, in this community at least, is steadily diminishing. It is extremely desirable, however, that the number of cases in which the surgeon is called only when the conditions are extremely grave should also diminish.

The cases successfully operated upon include a large number in which the outlook was grave; a few in which it seemed practically hopeless. The majority of cases were, however, encouraging at the time of operation.

Localized abscesses of a week or more duration practically all recovered under simple drainage. Appendectomies for gangrene and perforation usually recovered if the tumor was small and well localized. Many recovered with the demonstrated general infections; many after extensive contaminations during operation.

It would be interesting to consider the subsequent history of cases simply drained. That this method of treatment is advisable in many cases, we are convinced. We limit its use first to cases of long standing — a week or more — in which there is an abscess with firm walls; and, secondly, to other localized collections in which the patient's condition is too serious to permit a search for the appendix. The former almost always recover, and may be operated upon later in perfect safety when the hernia which so often follows operation in the acute stage may be sewed up. The latter may be tided over the stress of impending calamity and have the appendix removed at a more favorable opportunity.

In a considerable number of the abscess draining cases there has been evidence of complete gangrene of the appendix. In many, fecal concretions have escaped with the pus. In some, subsequent operations have shown that the appendix remained in practically all its former virulence. We have not been able as yet to convince ourselves that there is any very considerable number of recurrences after drainage; yet we believe that a hernia in the scar or the slightest grumbling in the region of the appendix should be followed by operation.

Fecal fistula so commonly follows removal of the appendix in acute cases in which there has been an extensive suppurative process that we look upon it as almost unavoidable. It may be encouraging to those who see for the first time this disagreeable complication to know that almost without exception fecal fistulæ heal spontaneously, even if the opening is a large one. Of our own cases we have operated upon but one. In that an abscess broke into the cecum shortly before the operation. A fecal fistula persisted. We finally operated for this fistula as well as for a hernia in the scar and for the removal of the appendix. The fistula was in the cecum about two inches from the base of the appendix.

In one of the most prominent private cases the entire contents of the intestines came out of the wound for months. In this case the appendix was not removed. There was an appendicular abscess in the deep pelvis. An opening was made through the vagina and in the right iliac fossa. Both became in the course of a few weeks fecal fistulæ. Both closed. The formation of a fecal fistula depends somewhat upon the seat of the gross perforation, though we have known one to occur when the opening was at the base, the middle or the tip, — the closer to the cecum, the more likelihood of a fistula. The seat of the perforation has, too, a great influence on the prognosis. We used to think that the fulminating cases depended upon bacteriological considerations, upon sluggishness in the peritoneum in opposing adhesion-barriers, and perhaps upon other causes. It seems clear now however that the violence of the infection is very largely dependent upon the size of the hole, its seat with reference to the cecum, the size of the appendicular lumen, the patency of Gerlach's valve, the liquidity of the cecal contents. These, even opposed by a most vigorous and absorptive peritoneum, will break down barriers that would successfully resist a less forcible attack. Moreover, the very rapidity of attack, the great volume of fecal escape, tear aside the hasty barriers which the peritoneum tries to raise and invade the abdomen to its farthest recesses. This seems the most reasonable explanation of these rapidly fatal cases in which an exploration shows in the first hours of the disease a fatal peritonitis. Indeed in such cases we find the appendix perforated near the base. In one recent case the stump was gangrenous so near the cecum that no ligature would stay on.

It seems not unreasonable to state in connection with the class of cases thus far considered that the question of operative interference is not so simple as it might at first glance appear; that the greater one's experience in all classes of acute cases, the greater the number that will justify serious doubts as to the advisability of interfering in every case "as soon as the diagnosis is made." This rule may be a good one if every case can be seen and operated upon at the very outset — most cases could be saved by following such a rule; but at the time the case comes to the physician for treatment or to the surgeon for operation those conditions so favorable to operation have given place to others and the patient, fully under the malign influences of the disease, must be treated in the way which in his particular case is, on the whole, the safest. That immediate operation is demanded in every case, and that that operation shall in every case be the removal of the appendix, seems to us a position which is rendered untenable by the facts as they are thus far known. That most of the severe cases seen after the symptoms are fully developed require interference at some time during the attack seems fully proved; but that that time shall invariably be as soon as the diagnosis is made must challenge serious doubt. For example, not to go into this question too fully at this time, a patient in whom a severe attack is rapidly subsiding should not be operated upon so long as his symptoms continue to improve. An aggravation of symptoms after a temporary subsidence demands almost invariably an operation and an operation with greater chances for success at the end of a week than upon the third or fourth day. On the other hand, a case that has been not only not improving, but increasing in gravity should be immediately explored.

In many of the successful operative cases the interference was postponed from day to day until it was clear that recovery without operation was highly improbable.

In some instances — a very few — the operation proved fatal; in others, the patient after a delay died suddenly, unrelieved. We believe that operation ought to have been immediately performed in a certain number of these cases. On the other hand, interference was resorted to on several occasions when subsequent developments showed that it would have been better to wait. These were cases of moderate severity in which there was a localized tumor without general infection. The fatal results in several of the cases justify the query whether it would not have been better to wait.

These remarks, it should be stated, apply to those cases first seen when the disease was at its height. Cases seen by the surgeon in the very beginning, when the symptoms both local and constitutional are severe, should be, as a rule, explored immediately.

In reviewing those acute cases not operated upon, we must include 31 which were moribund at our first visit, as well as those in which a policy of delay seemed best. The latter deserve especial emphasis inasmuch as it is upon these that the strongest arguments in favor of universal exploration must be based. Those cases which prove fatal after operation may be quoted either in favor of earlier interference or of no interference. It cannot be said that either method might not have been successful. The chances, it is true, favor the former, for it must be admitted in view of the safety of the "interval" operation that appendectomy before perforation would have been successful in most cases. Unfortunately, as before stated, so early an operation is impracticable, for in our experience the first symptoms in severe cases are caused by contact of the infected and infecting appendicular area with the contiguous peritoneum, and no operation can be early enough to prevent in such cases the local contamination. Nevertheless, it seems to us proved that the earlier the operation, up to a certain time — say to the second or possibly the third day — the lower the mortality.

The statistics throwing light on this question are not convincing: for example, in 180 acute cases treated medically 31 died, a mortality of 17 per cent. — a lower mortality than that after the operation in acute cases. But some of these 31 cases, fatal under medical treatment, might have recovered after operation. On the other hand, of the 63 fatal cases operated upon a considerable number died which in all probability would have recovered under medical treatment. The truth is that, had all these cases been seen by experienced surgeons in the first or second day, practically every fatal case would have been operated upon at a time when there would have been a strong probability of cure. But furthermore, on the other hand, a certain number of the successful cases not operated upon would have been hastened to their death; and a certain number would have been drained late in the period of safety; for it must not be forgotten that many a case proves fatal before aid is called, and that the late operations are successful in a large ratio, because the cases, being "the fittest, have survived" the dangers of the early and critical days.

The cases in which a wrong diagnosis was made have an exceptional interest, because it is generally thought that the diagnosis of appendicitis is easy. In most cases it is easy, but at times a correct differentiation is impossible. A lesion sometimes mistaken for acute appendicitis is acute cholecystitis. The gall-bladder when acutely inflamed and so placed that it cannot be felt causes symptoms which resemble closely those of acute appendicitis with intestinal obstruction. We have in three cases made so positive a diagnosis of appendicitis as to make the appendix incision, only to find a normal appendix. Further search has revealed an acutely inflamed gall-bladder. An occasional source of error is in the ileo-cecal tumor of tuberculosis or malignant disease. A blood-count will usually solve the problem, but for obvious reasons this is at times impossible. Acute obstructions unaccompanied by tumor or other characteristic signs may lead to an erroneous diagnosis of appendicitis. In most of them a constricting band has been found.

(To be continued.)

"Phossy Jaw" is the English slang for phosphorus poisoning, cases of which have recently occurred in some of their large match factories.

ARMY MEDICAL ORGANIZATION.

BY JOHN VAN R. HOFF,
Lieutenant-Colonel, Chief Surgeon, Third Army Corps.

[The following circular, which has been issued for the information and guidance of the medical officers of the Third Army Corps, at Chickamauga, gives the fullest and most detailed account of the organization of an army medical corps which has yet come under our notice. It is of such interest to our civil as well as military readers at the present time that we publish it in full. Ed.]

Circular No. 1.

Headquarters Third Corps, Office of Chief Surgeon,
Chickamauga Park, June 19, 1898.

The following is published for the information and guidance of the medical officers of this corps, namely:

1. The Regimental Dispensary, as its name implies, is intended for the treatment of trivial cases only. All serious cases must be sent to the divisional hospitals. Every case excused from any duty whatsoever must be entered in the regimental register of sick and wounded and continued on that register, whether the patient be treated in quarters or division hospital, until it is disposed of by return to duty, discharge, death, desertion or transfer to a general hospital. It is of the utmost importance that this register be kept accurately, and that the report of sick and wounded, which is based upon the register, be rendered promptly, in which connection particular attention is invited to the "Directions for Preparing the Register of Patients" recently distributed to each regimental surgeon. This report must be rendered to this office within five days after the expiration of the month for which it is made.

2. The Regimental Hospital Stewards will ordinarily be mustered with their regiments. The private of the hospital corps on duty as orderly will be mustered with the ambulance company of his division.

3. In addition to the duties prescribed in Circular No. 3, Surgeon-General's Office, May 18, 1898, for regimental surgeons, they should instruct the officers of the regiment in first-aid and the prescribed methods of transporting the wounded. (See General Orders, No. 60, Adjutant-General's Office, Washington, D. C., Series of 1897.)

4. The Field Division Hospital, which is in effect made up from the different regimental hospitals, is the central medical feature of the division, and upon its effective administration depends the success of the medical department. It should be organized in three brigade sections in such a way that one or more sections may be readily detached without destroying its entity, and so far as practicable, the sick of each brigade should be assigned to its designated section. (See Paragraph 9.)

5. The duties of the medical officer commanding such a hospital are sufficiently outlined in the above-referred-to circular. Next to the care of the sick his most important duties lie in the keeping of the records, and the making of reports as prescribed in regulations and orders. The men of the hospital corps under his command look to him for subsistence, clothing, pay and instruction, which he is under obligations to see that they receive. In supplying the entire division with medical supplies, and in anticipating future requirements in this direction, care is demanded.

6. The Division Ambulance Company, in camp, furnishes transportation for the sick and such other assistance as may be required of it by proper authority. It is essentially a company of instruction to which all the men of the hospital corps in the division,

except those attached to the field hospital, belong. On the march, it becomes an ambulance hospital, furnishing shelter as well as treatment for the sick. On the field of battle, it organizes the dressing and ambulance stations, it collects and transports the wounded from the field, and oftentimes acts in place of the field hospital when the latter fails to reach the battlefield. The function of this organization is exceedingly important, and in our service is yet largely undeveloped. The interior economy of the ambulance company is practically identical with that of a company of the line. (See Paragraphs 264 to 286, inclusive, Army Regulations, 1895.) The standard of an ambulance company in celerity of movement, care of equipment, instruction of men, and general "smartness" should equal that of a light battery of artillery in the regular establishment.

7. The 28 saddle horses at present allowed to a division will until further orders be distributed as follows, namely:

Hospital steward at division headquarters, 1; orderlies (1 for each brigade surgeon, 1 for each medical officer with regiment), 13; field hospital (trumpeter, senior N. C. O., transport N. C. O., assistant transport N. C. O., commissary N. C. O., 1 each), 5; ambulance company (quartermaster, senior N. C. O., acting Q. M. sergeant, transport sergeant, acting commissary sergeant, trumpeter, 1 each; orderlies 3), 9.

The remaining non-commissioned officers and men of the hospital corps will march. The field hospital forms part of the advance (fighting) train, and the ambulance company is distributed (by brigade section) throughout the division.

8. In addition to the six medical officers attached, the field-hospital detachment numbers 99, and the ambulance company 114 enlisted soldiers. Both of these organizations are divided into brigade sections, each capable of independent action. Lieutenants of the line, detailed under the provisions of Paragraph 2, General Orders No. 76, Headquarters of the Army, A. G. O., current series, are attached to the field hospital and ambulance company, respectively. They act as quartermasters for their organizations. The combined divisional medical organization is in effect a battalion, under the immediate command of the division chief surgeon.

9. Besides the subdivision of the field hospital into brigade sections, it is divided into the medical and transportation departments, a train of 17 four-mule wagons being required for the latter.

Its personnel is distributed as follows:

1 medical officer (commanding), 5 medical officers, 1 quartermaster (lieutenant of the line), 6 hospital stewards, 3 acting hospital stewards, and 90 private soldiers (hospital corps).

Of this number, 1 quartermaster, 2 hospital stewards (as trainmaster and assistant), 1 blacksmith, 1 artificer, 1 cook, and 17 drivers are assigned to the transportation department. In camp the quartermaster is the police officer.

The remaining personnel, except the commanding officer (who supervises everything), pertains to the medical department of the hospital, and the duties are distributed as follows:

1. Executive officer, who is in effect the adjutant of the organization: he aids in the work of supervision, has charge of all the records of the hospital, and all public property, except that pertaining to the quartermaster's department.

2. A medical officer is assigned to the special supervision of the subsistence department of the hospital; he superintends the drawing and issuing of rations, the keeping of accounts, the issue of special stores, etc., which, however, with skilled assistance, will take but a portion of his time.

These officers usually remain with the hospital, whether operative or not. The other medical officers are assigned in charge of the wards and operating tent, and do such other additional work as may be necessary. (See Circular No. 3, Surgeon-General's Office, May 18, 1898.) When the hospital is inoperative they may be temporarily attached to the ambulance company, which then becomes the ambulance hospital.

The non-commissioned officers and privates will be distributed as follows:

1 hospital steward, senior non-commissioned officer, whose duties are essentially those of a first sergeant; he looks after the management and material requirements of the 99 men of the organization:

1 hospital steward in charge of dispensary, 1 in charge of mess, 1 in charge of property, 1 in charge of wards; 1 acting hospital steward in charge of records, 2 on duty in wards; 1 private on duty as clerk, 1 on duty in property department; 35 on duty as nurses, 2 on duty as cooks, 2 on duty as assistant cooks, 2 on duty as cooks' police, 26 on duty as police, special details, guards, etc.; 1 trumpeter.

The ambulance company is also divided into medical and transportation departments. Its wheel equipment consists of 25 ambulances, and there is a train of 4 wagons. Its personnel is distributed as follows:

1 medical officer (commanding), 5 medical officers, 1 quartermaster (lieutenant detailed from the line), 7 hospital stewards, 3 acting hospital stewards, 104 privates (hospital corps).

Of this number, 1 quartermaster, 1 hospital steward (Q. M. sergeant), 7 privates (4 drivers, 1 cook, 1 blacksmith, 1 saddler), are on duty with the train, which marches with the ambulances.

The remaining personnel pertains to the medical department, for, as has been stated, the ambulances form the hospital of which the drivers and orderlies are an essential part. The duties are distributed as follows:

1 medical officer (commanding); 1 executive medical officer; 1 subsistence medical officer; 3 medical officers (one to each brigade section) in charge of patients (additional medical officers and hospital corps men may be attached from the field hospital during the march if such be found necessary); 1 senior N. C. O. (first sergeant); 5 hospital stewards (2 ambulance sergeants, 1 dispenser, 2 bearer sergeants); 3 acting hospital stewards (1 commissary sergeant, 1 assistant ambulance sergeant, 1 bearer sergeant); 97 privates (1 trumpeter, 1 cook, 25 ambulance drivers, 25 ambulance orderlies, 40 litter bearers, 5 orderlies).

The Dressing Station party consists of

2 (or 3) medical officers; 4 non-commissioned officers; 15 attendants; 2 cooks; 2 orderlies.

The wagon-train rendezvous here and the personnel may be utilized.

The Dressing Station is divided into three sections:

First Section (for slightly wounded). — 1 medical officer, 1 acting hospital steward (clerk), 7 attendants.

Operating Section. — 2 medical officers (or more), 1 hospital steward, 6 attendants.

Mortally Wounded Section. — 2 attendants (a chaplain may well be here).

Dispensary Kitchen. — 1 non-comissioned officer, 2 cooks.

As soon as the dressing station is formed the rest of the company moves forward and establishes an ambulance station at the farthest point to the front, at which the ambulance wagons rendezvous, and between which and the dressing station they are constantly plying. Each ambulance has a driver and orderly, and a box beneath the driver's seat in which are carried beef extract, tea, sugar, hardbread, etc., and every fifth ambulance, which must be especially marked, will carry surgical supplies, as anesthetics, anodynes, antiseptics and dressings. Each ambulance should carry an axe, two hand-litters, two lanterns (one red), and a galvanized iron pail.

Ambulance Station party: 1 medical officer (if possible), 1 non-commissioned officer, 1 private, 1 orderly. Remaining officers and men — 2 medical officers, 2 hospital stewards, 1 acting hospital steward, and 24 privates, with 12 hand-litters — are divided into two platoons, and go out to render first aid, gather up, and bring in the wounded. When the work of collecting is completed, the company rendezvous at the dressing station, and when the work there is accomplished, and the wounded transferred to the field hospital by the ambulances, the company goes into camp near the hospital.

The field hospital is evacuated to the rear as rapidly as possible, so that it may be free to move with the troops.

As under the provisions of the Geneva Convention the personnel of the medical department is neutralized, if unarmed, nevertheless, as it is necessary to preserve order at a place where large numbers of unruly people are sure to congregate, a provost guard must be detailed from the line to maintain order and prevent interference with the work of the dressing station and hospital. If this is not done arms should be issued to the hospital corps.

The medical equipment of the ambulance company is not officially prescribed, but is indicated by its special functions. All experience has taught that the pannier, or chest, is the most convenient form in which to carry the field medical equipment. The field supply table provides a very meagre outfit, which certainly will not meet the requirements of the situation, and must be supplemented from the hospital supplies, for, as has been stated, the dressing station will often substitute the field hospital. It is directed that in this corps the following equipment will be taken, if obtainable:

6 medical chests, Nos. 1 and 2; 6 surgical chests, Nos. 1 and 2; 3 sterilizing chests; 1 operating table; 3 field operating cases; 6 boxes containing 12 gross gauze bandages, 3 gross plaster bandages; 66 rubber bandages, 36 suspensory bandages, 20 kilogrammes sterilized absorbent cotton, 1,000 packets first aid, 1,000 packages sublimated gauze, 200 packages iodoform gauze, 600 packages sterilized catgut ligature, 600 packages sterilized silk ligature, 30 metres unbleached muslin, 20 kilogrammes oakum, 20 packages common pins, 20 dozen safety pins, 50 spools No. 1 adhesive plaster, 12 spools No. 2 adhesive plaster, 8 metres isinglass plaster (1 metre rolls), 20 kilogrammes plaster-of-Paris (2 kilogramme tins), 10 metres rubber sheeting, 20 metres oiled silk (5 metre rolls), 60 pieces wire for splints, 60 boxes compressed cotton sponges, 6 Esmarch's tourniquets, 12 wash handbasins, 12 cases blankets, 150 gray blankets, 150 rubber blankets, 1 field desk, 200 bedsacks, 200 pillow ticks, 30 hand-towels, 12 brushes for cleansing, 6 agate buckets, 3 commode chests, 6 food chests (for dressings, etc.), 1 mess chest, 2 dippers, 6 lanterns, 20 hand-litters, 6 orderly pouches.

Two hospital tents, complete, should be taken for use as dressing and operating tents.

Each man of the ambulance company and hospital corps detachment will be equipped as follows:

1 pouch, H. C.; 1 litter sling; 1 waist-belt and plate; 1 haversack complete; 1 canteen complete; one-half shelter-tent, with 1 pole and 5 tent-pins, in which is packed the clothing prescribed in Paragraph 199, Drill Regulations, H. C. He will wear the prescribed uniform and leggings.

The duties of Brigade Surgeons and of the Chief Surgeons of Divisions are sufficiently outlined in Circular No. 3, Surgeon-General's Office, May 18, 1898. These officers are of great importance, and upon their devotion depends to a large extent the successful administration of the division.

As medical officers as well as the enlisted soldiers of the hospital corps are in need of instruction in what may be called the military features of their work, division chief surgeons will organize schools of instruction for their officers, in which they will be carefully taught in the duties pertaining to their positions, from text-books and papers prescribed in a letter addressed to division chief surgeons, dated June 9, 1898 (also G. O. 58 and 76, current series, Headquarters of the Army).

Schools for non-commissioned officers, and privates of the hospital corps, with regiments, will also be organized, in which they will be instructed in the making out of the various reports, the keeping of the required records, etc.

The instruction in the field hospital and ambulance company must be of the most complete character, covering all points requisite to the making of a thorough sanitary soldier.

Finally, it should be remembered that the field hospital and ambulance company must be as mobile as the command to which they are attached, and no effort should be spared to place both of these organizations in condition to move at an hour's notice.

SOME MODERN METHODS OF THE TREATMENT OF PHTHISIS, AND ITS SYMPTOMS.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

The awakening interest in the treatment of phthisis so evident at the present time throughout the medical world is inspired, I think, by two facts: first, the establishment of the unity of the disease through the discovery of the tubercle bacillus; and, secondly, a deeper realization of its curability.

Both pathological and clinical evidence afford abundant proof that pulmonary tuberculosis is susceptible of cure by nature, either assisted or unassisted by art. This fundamental fact, clearly and fully realized, has stimulated the profession to study anew the causes and conditions of the disease, the means of its prevention, and its treatment when existing. Of its causes and prevention I have spoken elsewhere.[2] It is my purpose in this paper to outline some of the modern methods of treatment, which at present produce the best results.

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[1] Read before the Massachusetts Medical Society, June 8, 1898, and recommended for publication by the Society.

[2] The Pray prize essay of the New Hampshire Medical Society for 1897.

As the two factors, the infecting germ and a favorable soil, must coexist to produce the disease, so the treatment has consisted either in attempts to destroy the tubercle bacillus or imprison it; or in transforming the favorable into an unfavorable soil; or a combination of these two lines of attack. All attempts made to destroy the bacillus *in situ* have thus far, as we know, proved futile. What serum therapeutics may accomplish in this disease in the future we cannot say, but the antitoxins have produced such brilliant results in other infectious diseases that we may be hopeful that eventually the tubercle bacillus may meet its fatal foe from some such source. Meanwhile, we have the other line of attack left us, namely, to develop and strengthen the resisting power of the consumptive until his pulmonary tissue presents no longer a favorable soil for the infecting germ. This is the plan universally adopted by the leading phthsio-therapeutists both here and abroad, and it has produced the best results yet attainable. It is all included in "rest, extraordinary feeding, and a life in the open air; mental and bodily rest,[3] overfeeding of a fearless and heroic description, and perpetual fresh air."

The bare statement of this method makes it seem simple enough, but the detail of its accomplishment, however, demands strenuous exertion, a determined will, and great patience both on the part of the patient and the physician. An exact and rigorously adhered to plan of life is required, and nothing must be left to chance or the caprice of the patient. I believe it is always best to tell him plainly his condition, and the treatment demanded, and thus obtain his co-operation in our efforts. He must realize that whatever in his former habits interferes with the new plan must be abandoned. He is like a settler in a new country; a new life and environment is before him requiring changed life habits, and he is to realize that not what enters into his body medicinally is to have much effect upon his disease, but what goes in as food and air is mainly to decide the issue.

The best results from this hygienic-dietetic treatment are undoubtedly obtained in closed institutions or sanatoria, in whatever climate they are situated, because in such institutions the management of the patient's life can be more exactly and continuously affected when constantly under the eye of the physician; and further, he has the advantage of the equipment there existing for the special treatment of this disease. Much, however, can be accomplished outside of a sanatorium, even at the home of the patient, and when he is compelled to follow some occupation. The main elements entering into the hygienic-dietetic method are:

(1) Out-door life in a pure air, free from dust and smoke.

(2) Abundant alimentation, consisting of properly selected and prepared food, rich in fats and carbohydrates.

(3) Rest or exercise, or both according to the individual condition.

(4) Hydrotherapy. And supplementary to these:

(*a*) Such general medication as from time to time seems to be useful in co-operating with the above measures.

(*b*) Symptomatic medication, to relieve any symptom which interferes with the general plan, and which cannot otherwise be removed.

[It is well to repeat that all medication is simply subsidiary to the open-air and food treatment, and occupies the place of least importance.]

The open-air treatment is such a radical departure from the former notions regarding the management of the disease that it is difficult at first to convince the patient and his friends of its importance, and the thoroughness of its execution, as well as to disabuse him of his fears of such constant exposure to the weather. Not an hour or two a day out of doors on pleasant days is meant, but whole days, and day after day are to be spent in the open air, in cloud or sunshine, warm or cold, stormy weather alone excepted; and at night the windows should always be open in the sleeping room. This cannot all be accomplished at once, especially with those who have been accustomed to an indoor life, as have most consumptives. They must be gradually hardened and trained to it; an hour or two a day at first, and on pleasant days. Gradually these out-of-door exposures can be increased and less regard paid to the weather and variations of temperature, until there will be but few days unavailable for the treatment.

The question naturally arises as to the climate in which this plan can be pursued. Are not especial climatic conditions necessary? and are we not obliged to send our patients away to find them? Of course, some climates are admittedly more favorable than others; as, for instance, those of the high altitudes, which possess especially desirable characteristics; but, as Dettweiler says, "in the treatment of phthisis there does not exist either specific means or specific climate. Phthisis is curable everywhere, in every climate." Wherever one can obtain pure air free from dust and smoke, protection from sharp winds, and a fair number of sunny days, there the free-air treatment can be carried out, and outside of the cities and manufacturing towns one can almost anywhere in our State find these conditions. "Even in the midst of large towns," as Weber says, "the air in open spaces and even in the streets is very much purer than within the houses." Moreover, such a dust-free atmosphere utilized in a methodic and continuous manner will produce results, I believe, comparing favorably with those in the well-known so-called health resorts. The climate of Falkenstein, for instance, possesses no very great advantage over that in many portions of New England; it is variable, has frequent rains, and the proportion of sunshiny days throughout the year is not extraordinary; and yet the results obtained compare favorably with those of other sanatoria more advantageously situated climatically. The secret is in making the most of such climatic conditions as are available, and thoroughly realizing the inestimable value of pure air in the treatment of phthisis. "If indeed pure air," says Dr. Henry MacCormac, "were a thing of price, of fictitious price I mean, for otherwise it is priceless; if people had to dive for it into the sea depths, or grovel for it in the mine, then would they value and appreciate it." The effect of the open-air treatment is striking; there is a gradual reduction of fever, a gain in appetite and weight, sleep is improved, and night-sweats diminished; cough, which may be temporarily increased, is in the end lessened, and there is a sense of comparative well being, and improvement of spirits. I am well aware that in private practice it is far more difficult to establish and maintain this open-air treatment than in the sanatoria arranged for the purpose, but with a little ingenuity and persistence it can be approximately accomplished, I believe, in most cases.

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[3] Treatment of Consumption. Harris and Beale, 1895, pp. 376-379.

As the life in the open air must be principally one of rest, some spot must be selected, preferably facing the south, where the patient can recline upon a deck or reclining chair, and be protected from the wind and rain, — for a moderate rain does not contraindicate the treatment. A veranda with movable curtains at the sides; a small light wooden hut or shed, that can be easily transferred from one place to another, and turned around according to the direction of the sun or wind; a tent with a raised wooden floor, and curtains capable of being open or shut; an awning on a housetop; a hammock under the trees, are some of the contrivances by which this may be accomplished. The environment of each individual case will suggest others. The recumbent position is preferable for several reasons: the feet and legs can be better protected with wraps, and even hot-water bottles in cold weather; the circulation of the blood in the lower extremities takes place more easily, and, according to Volland, the blood supply to the apices of the lungs is increased, thus favorably influencing the nutrition of the diseased parts. As one becomes habituated to this open air exposure, he will pay less regard to variations of temperature and but few weather conditions will prevent it. In the Continental sanatoria it is carried out in summer and winter, in rain and snow; high winds being almost the sole weather contraindication. The question might be asked, Why is not a large well-ventilated room with an open window as good? A moment's reflection, I think, will satisfy one that a patient cannot be so continuously bathed in fresh air indoors as out, even in the best ventilated room — the one is aëration, the other hyper-aëration. Then, again, the out-door air is purer than it can be in any living room.

I have said that the life of the consumptive out of doors must be principally one of rest, and this is especially true at the beginning of the treatment. The general system is in a depressed condition, the circulation poor, and the heart inadequate for its work. Rest, mental and physical, and abundant and nutritious food, with as little expenditure of vital force as possible, are the measures indicated, and will best aid in forming fat and blood. Much exercise is a mistake, I believe. The experience of the Dettweiler system of uninterrupted rest, continued for months, has abundantly vindicated its value.

With febrile cases rest should be the invariable rule admitting of few exceptions; for experience has proved that rest either in the open air or in a well-ventilated room with open windows is the quickest and most certain way of subduing this symptom. At the sanatorium of Hohenhonnef the fever patients are not even allowed to lie out in the reclining chairs for fear the moving might aggravate the fever. This matter of absolute rest for febrile cases of phthisis I have seen so often disregarded that I desire especially to emphasize it. When the fever is intermittent, and the morning temperature is normal, a limited amount of exercise may be advisable, but such cases should be under careful observation. Afebrile cases can, as a rule, take a certain amount of exercise, depending largely upon the condition of the heart. This should not be so severe or prolonged, however, as to exhaust the patient or produce dyspnea or excessive perspiration. The kind of exercise will depend somewhat upon the environment and available conditions, but walking either on the level, or up gentle ascents — Brehmer's "hill climbing" — is the simplest and most free from injurious effects, and can, moreover, be easily regulated. The physician should determine the amount and not leave it to the judgment or caprice of the patient.

Whatever form of exercise is adopted, deep breathing or lung-expanding movements should constitute a part of it. The "breathing tube" is serviceable for this purpose, permitting a free, full inspiration, and an impeded, gradual expiration; or one may simply stand erect with the hands on the hips and take slow, deep respirations. The chest expansion may also be assisted by arm movements in either the erect or recumbent position. As with all else connected with the hygienic-dietetic treatment, these breathing exercises should be taken regularly, so often, and so many times. Of course, if the discretion of the patient can be relied upon, various other forms of gentle exercise, depending upon his condition, may be useful as combining with the exercise pleasurable diversion, or in the form of some light occupation, such as gardening, driving, or other work upon the land. It must be borne in mind, however, that all this applies to afebrile cases.

If the impossibilities of establishing an out-door life at or near the home of the patient, appear insuperable, which I believe will not be so often the case as one might at first think, then a change of residence is demanded which will render this attainable. Wherever the patient goes he must be under careful and constant medical supervision and be thoroughly imbued with the significance of the open-air treatment; however admirable the climate, it must be utilized to the fullest extent in order to realize its beneficial influences. Continuous out-door life is the only one for the consumptive, for him it *is* life. This is not the place to consider the different climates applicable to phthisis. I will only say that experience so far has proved that the medium or high altitudes have produced the best results, largely I am inclined to think because they afford the purest air; but it is well to repeat again here Dettweiler's words, that consumption can be cured in any climate.

FOOD.

Of equal importance with the air treatment is the feeding of the patient. "Air and food both of the best quality possible are the most potent factors in treatment." An abundance of nutritious, easy assimilable food, containing a due proportion of proteids and carbohydrates, and rich in fats, is required. Brehmer attached great importance also to all kinds of vegetables. Much attention must be given to the quality and preparation, as well as to the method and time at which the food is to be taken. There should be frequent variety, adapted to individual taste and condition, and the service should be such as to render it appetizing and attractive. Experience has shown that the amount of food required can be best taken by frequent small meals, generally five a day, arranged somewhat as follows: At seven or earlier, a glass of warm milk in bed or while dressing, with a spoonful or two of brandy or limewater if indicated. At 7.30 to 8, breakfast, consisting of tea, coffee or cocoa, bread and butter, bacon, fish, poultry or meat. At 10 or 11, a glass of milk or a cup of broth or beef-tea, or a sandwich and a glass of wine. At 1 or half-past, dinner, consisting of soup, meat or poultry, or fish or game, with fresh vegetables and a light pudding or fruit. Also alcohol in some form may be allowed at this meal, if the physician considers it desirable. At 4 o'clock, a glass of milk or a cup of tea or coffee with much milk, or bread and butter or rolls. At 7, supper, with one or two courses, and vegetables, similar to the meal in the middle of the day. At 9 or 10 on going to bed, a glass of milk, or bread and milk, or milk with some farinaceous food like oatmeal porridge. If milk alone is taken at this meal two or three teaspoonfuls of brandy may be put in it. In pyrexia the nourishment must contain less solid food and be taken more frequently. It is not enough to dismiss the matter of diet by telling the patient to eat all he can of good food; in that case we may find he is taking but very little nourishment, his appetite may be lacking, the digestion impaired, so that at the time when he most needs to be fed we shall find he is taking the least food. We may aid the appetite and digestion by some temporary simple medication, although generally the out-door life will prove the best tonic. By persuasion we can induce him to take a little, and this will increase the desire for more. Sometimes we must insist that a stated amount of food must be taken. The fancies of the patient can sometimes be followed to advantage. Good cooking and attractive service also aid materially. By ingenuity, constant attention and insistence, and frequent and small feedings, we can generally succeed in having our patients take a liberal amount of nourishment, a much larger quantity than at first seemed possible. It is well to bear in mind that the digestive powers of a consumptive are often greater than the appetite indicates. Periodic and frequent weighing of the patient will indicate the success or failure of the method of feeding adopted.

Milk, either as such or in the form of koumiss or kefir, or when it constitutes the principal ingredient in some of the various "foods," is a most valuable adjunct to other kinds of nourishment, and in certain conditions, such as gastro-intestinal disturbances, may form the entire diet. It can be made more digestible and agreeable by adding soda or some of the various alkaline mineral waters, such as seltzer or apollinaris, or a small amount of brandy; or a small quantity of coffee, tea or cocoa will render it more palatable in some cases, while in others it is best borne peptonized. Care should be taken that it is obtained from tested cows, or if not it should be boiled. When used with other forms of nourishment four or five glasses a day will be enough. In the so-called "milk cure," when it is the exclusive article of diet, as much as ten to twelve glasses are taken in the twenty-four hours. Its true office, however, I believe, is to supplement the regular diet.

Alcohol may be regarded either as a food or a drug, and practically it makes little difference how we look at it. Of its value in the majority of cases I am convinced, especially when fever exists. The method of administration and the daily dose must be determined by individual conditions. Regarding the form in which it should be used, it does not make so very much difference in my opinion. Dettweiler has a predilection for brandy diluted with water or milk. Whiskey can be used in the same way. Various wines, heavy or light, Hungarian, Port, Sherry, Tarragona, Rhine, Italian or California, can be used with the meals. Brehmer does not consider beer as adapted for consumptives. When the appetite is wanting, digestion enfeebled, the circulation poor, and pyrexia exists, alcohol in fairly large quantities is indicated, if it can be taken without discomfort, and will alleviate in a marked degree these symptoms. With patients, however, who rapidly increase in weight and blood tension, alcohol increases the liability to hemoptysis and is also dangerous for those who show a disposition to hemorrhage.

Cod-liver oil, which is sometimes classed with foods, sometimes with drugs, is, by a vast experience in its use, acknowledged to be the most valuable single nutritive agent in all the consumptive's dietary. "I have no hesitation," says Dr. C. J. B. Williams, "in stating my conviction, that this agent has done more for consumption than all other means put together." Of all the fats it is the most easily digested and assimilated, and can be tolerated by the majority of patients, and for long periods of time, if one begins its use cautiously, one or two teaspoonfuls a day. Wherein its peculiar efficacy resides, whether in the oil itself or something contained in it, is still undetermined. It seems reasonable, however, to suppose that the inorganic substances and biliary salts which it contains are largely influential in its easy digestibility and absorption, and hence rendering it more nutritive than any other fat food. At all events, it is surely a fact that a patient will gain weight from cod-liver oil when he can do it in no other way. Daremburg and others consider the darker colored oils more efficacious than the pale; the latter, however, are generally prescribed. The majority of consumptives can take cod-liver oil with benefit. There are, however, some contraindications, gastric or intestinal catarrh, diarrhea, and fever if high or continuous. When there is only a slight rise in temperature in the evening, a moderate dose can generally be taken. It is most valuable in the quiescent periods, and the least so or even sometimes harmful, in the active, when the degenerative changes are rapid. I always give it, if possible, alone, either directly after meals, or in two or three hours. It can be floated upon milk, coffee, whiskey, brandy, ale, porter or lemon juice. I have recourse to the emulsions only as a last resort.

The various malt extracts, so extensively used now, have a certain limited value, if not exactly as food, as an aid to digestion, and as a very useful vehicle for cod-liver oil. Of course, they bear no comparison in value to the latter.

Hydrotherapeutics, which occupies an important place in the hygienic treatment of phthisis in foreign sanatoria, does not seem to have been generally appreciated in this country, at least in private practice. By the hydropathic treatment the body is hardened, thereby giving it greater protection against cold; the circulation is accelerated and strengthened; the appetite stimulated; and tissue metamorphosis promoted. It is used symptomatically in pyrexia, night-sweats and various nervous phenomena. It consists of warm baths, ablutions, cold friction or sponging, the wet pack, and douches. Cold sponging is the simplest method, and if a chill is feared or the extremities are cold, the patient can stand in warm water and hold with both hands a hot pack to the pit of the stomach. (Ransome.) For cold friction the patient stands near the bed, stripped, and is wrapped in a sheet wrung out in cold water; the whole body is then rubbed firmly and rapidly; the sheet is then removed and a dry one folded about him, and he is rubbed again, and then dresses quickly. The cold friction may be partial and applied while the patient is in bed.

The wet pack is applied while the patient is lying upon a bed covered with a blanket. A coarse linen sheet is wrung out in water of a temperature of from 70° to 50° F., and tucked about him, and this covered with a blanket. In this he remains from one-half to an hour, and it is well to have a window open while he is in the pack. Instead of the full pack certain portions of the body only may be included, as the trunk, the upper half, or the limbs. The end to be attained by the wet pack is to stimulate the skin activity and thereby relieve the congested thoracic organs.

Chest compresses consist in the application of napkins wrung out in cold water and covered by flannel. The Winternitz cross-band is extensively used upon the Continent in phthisis, and is said to relieve and lessen the cough, favor expectoration, and improve the respiration. It is applied by winding about the chest from one axilla to the opposite shoulder and reverse, a linen cloth or sheet wrung out in cold water until the whole chest, front and back, is covered, and then applying in like manner a dry flannel cloth. The cold douche, only applicable to mild cases with fairly good reactive power, consists of a rain or cascade douche from above, or a hose with a jet or sprinkler from the side. This is generally used in the morning under the immediate supervision of the physician, beginning with five seconds and gradually increasing to not over forty. The patient is then rubbed dry with a rough sheet.

Ablutions can be applied to all patients, and consist in bathing the body, especially the chest, front and back, with a sponge wet in water at the temperature of the room, and then rapidly drying it with a rough towel or horse-hair glove. In the case of night-sweats, diluted spirit or vinegar may be substituted for pure water. Ablutions are given in bed and generally in the morning. When the patient is feeble or neurasthenia exists, massage is useful.

In the hygienic treatment the clothing demands consideration especially while the hardening process of out-door life is being established. The tendency, not to say danger, is in wearing too much and too heavy clothing, especially about the chest. The capillaries of the skin are relaxed, excessive perspiration induced, thereby rendering the body surface more sensitive to changes of temperature. The under garments should be loose enough to allow a layer of air beneath them. "Inside our dress," says Pettinkoffer, "we should carry the air of the South whereever we may be. . . . We live in our dress like an unclothed tribe in a Paradisian country, where the air is constantly calm and the temperature from 75° to 94° F." Experience has proved that the innermost garment should be of wool of a weight adapted to the season, of light open texture, and loosely fitting. (Ransome.) Chest protectors belie their name and are a source of danger by rendering the skin of the chest more sensitive. "The best chest protector," says Ransome, "consists in well douching the chest night and morning with quite cold salt water."

(To be continued.)

The form of the judicial oath known as "kissing the book," has been abolished in Maryland.

THE RELATION OF EPILEPSY TO OTHER DISEASES.

BY EDGAR J. SPRATLING, B.SC., M.D., PALMER, MASS.,
First Assistant Physician Massachusetts Hospital for Epileptics.

The relation of epilepsy to other diseases is so intimate, so interwoven and mutually dependent, as to cause and effect, that its separation is tedious, made more so by the constant changing of these relations; in cases it is impossible to tell where the epilepsy begins and the other disease ends.

Even before a child is born the very same factors may make its future heavily burdened with tendencies toward a dozen or more of ailments; and as the finer the mechanism of a structure the more readily does it become disarranged; thus do we have the selective cells of the kidney, of the liver, quickly giving way before an opposing force; this is equally true of the brain, for there we see first its more delicate attributes becoming clouded or obliterated.

The cerebro-spinal system as a whole being of more delicate structure than any other part of the body, we would, without thinking, expect its substance to suffer first at the onslaught of disease; but when we take time to consider, it comes to us that the brain and cord are better protected than any other organ, both by the structures about them, and by their own histological arrangement. Only through the minutest capillaries or by the finest of mechanical processes, osmosis, can a disease of the flesh touch the parenchyma of the brain or cord. But like the Quebec of Montcalm, its strength is also its weakness, the fortification is all on one side; the structural partial immunity of the central nervous system from acute diseases makes it particularly liable to degenerative processes, and makes reconstruction doubly slow, in some cases impossible.

It is also very evident that troubles having developmental origins, or such aids to their origins, will be found more often here than in the general body, such being the fact; and whenever we have developmental insufficiency or degenerative impairment of the neural matter, we are sure, relative to the extent and position of such defect, to have mental or nervous manifestations. And no matter how this defect is brought about, the evidences will ever remain the same for like position and amount.

Now it follows that the special disease arising from such or such defective nervous arrangement will be determined by the extent and quality of its basis. Destruction of one set of brain cells would give paralysis, of another amnesia, of broader areas dementia, while different degrees of the destructive process would give slight palsy, or slight forgetfulness, or perhaps slightly disarrange the delicate poise and equilibrium of the movements. Then why not have just a hint at vacuolation, or other equally obscure impairment of a certain group of higher control cells, or their fibrils, allowing the epileptic convulsion?

Let us speak of the part played hereditarily by other diseases. We find by statistics that epilepsy plays not so great a part in reproducing itself as is played by other diseases in producing it, but that is partly accounted for by the infrequency of procreation by epileptics. Being a disease largely of early life, its subjects are in a great measure precluded from marriage. On the other hand, where there is a chance for transmission by a parent, there is just as surely the opportunity for transmitting other diseases or weaknesses, and most likely from the very nature of the case, a taint clings to both parents, for a perfect, as the world speaks, man or woman would not be likely to choose an epileptic partner; though the value of that observation is largely determined in each instance by the age at which the seizures begin. Alcohol and syphilis together play a far greater rôle in the production of epilepsy than does it play in its own continuance. Rheumatism and tuberculosis occur more frequently in the parentage, though fill comparatively lesser rôles in the causation, as they themselves are largely evidences of that general condition, and of circumstances, making epilepsy a possibility. The condition that is shown in the parent by tuberculosis, rheumatism, hysteria, and various other diseases if not in some way counterbalanced or checked, goes a step farther in the offspring, adding some of the functional neuroses to the family burden.

Alcohol and syphilis go so nearly always hand in hand, that it is difficult to touch the stigma of the one without noting the odor of the other; and each alike lowers the tone of mind and body, inviting, as it were, the attention of various mental and physical ailments. Among the troubles thus invited in the immediate subject are almost all the forms of nervous diseases; prominent in this category stand epilepsy and the many scleroses, being themselves probably closely allied in all the essential causative points.

Chorea and rickets are but by-products in this grand onslaught upon the human health, being, as well, unmistakable signs of the possibility of intervention by other troubles. And a profound nutritive perversion or any other long-standing depressant complication would be likely to bring to the front one or more allied affections, the choice often falling upon epilepsy, a disease peculiarly prone to a parasitic existence, attaching itself to those already burdened by other weaknesses.

It is clear that direct heredity plays but a small part in the production of epilepsy, but rather by transference do we see the chief damage accruing. By direct heredity we mean, of course, that parent and offspring are affected alike, and moreover that the parent is so affected at the time of conception of the child. While by transference is denoted that the parent be diseased other than is the child.

Now, heredity is often made to appear far more potent than is really the truth; in this manner, A. B., epileptic, maternal aunt epileptic, paternal uncle died of paresis, brother died in infancy of convulsions. It is easily seen that neither of these three relatives could in any way transmit to A. B., yet by serious observers such cases are quoted daily. It is only when the direct line of descent is affected that we can attach a blame to heritage. But from the very nature of the case, the possibility of the acquirement of any functional disease is either developmental or degenerative n origin; and epilepsy being essentially functional, as the term is generally accepted, it follows that the condition making it possible must be brought about either n a perverted or defective development, or by a degenerative process.

An evident fact is that any one of a host of diseases n the parent might thus handicap the offspring or even later descendant: syphilis, alcoholism, "neuropathic diathesis," tuberculosis, cancer, some types of nsanity, and various others would tend that way; while a yet greater host in the subject itself would have the effect of producing a degenerated or arrested developmental condition giving the very same result.

It is sometimes asserted that epilepsy is entirely a disease of degeneracy; this cannot be unqualifiedly endorsed, and yet it is strongly tinctured with truth in a large majority of cases, though by no means in all. Unless, indeed, we broaden the term degeneracy to include all those cellular peculiarities that take origin either pre-natally or post-natally, but that would place us on very questionable ground.

Most interesting would it prove for one to trace a family tree from the seedling to the decay, watching the influence of environment, of the benefits and damages of new blood, more vigorous or more impoverished, as it adds a branch to the tree in marriage. We would see tendencies in one parent vitiated or enhanced by tendencies in the other, and the results of the union yet more modified in their future careers by environments.

In the notorious Jukes family in New York State this selecting and propagating of traits, both by breeding and by circumstances, has been closely observed, and the results found to be most startling. Cripples, moral and mental imbeciles, criminals and neurotics of all kinds crowd each into a mass of pitiful and abject humanity. And as we glance down the vistas of the ages how many noble and even royal pedigrees do we see dimmed — yes, even blotted from the book of time — by the blight of degeneracy. And in each instance is clearly seen epilepsy, ever eager to place its seal on the closing pages of a name. The great Cyrus left an imbecile daughter, an epileptic son and a cancerous daughter. The mighty name of Ptolomy, extinguished in the dying flame of Cleopatra's personality, was marred for twelve generations, in spite of the constant influx of new blood with almost each generation, by the dead weights of imbeciles, cripples and epileptics. And even in her son Cæsarion, the blood of the deified but epileptic Julius Cæsar could not withstand the fatal tendencies coming from both father and mother.

We might enumerate page after page of biographies showing that epilepsy is as well parasitic as peculiarly gregarious in its nature, lighting by preference upon victims already rendered helpless by long years of untoward conditions; in fact, it is rarely lonely, for it generally finds its various cousins busily sapping the life blood of the family into whose sphere it enters. And it is the duty of the neurologist to study those various and varying modifications making its entrance possible; for only by understanding, early recognizing and abolishing those conditions, can we hope to cope with this disease.

The point to be remembered most clearly is that epilepsy is never an *ipso facto* trouble, but its appearance must be aided and abetted by others; and that these other troubles are the real indicators for the commencing of the treatment. Persons showing these tendencies must be studied and cared for, and their offspring, should there unfortunately be any, should be doubly guarded hygienically, the slightest indication of a coming breakdown noted and corrected. Such a child should be guided carefully by and beyond all that legion of pitfalls, the inciting causes, without one of which no case of epilepsy could have its beginning.

We may feel assured that the time has nearly come when the epileptic condition, and even tendency, and not the seizure, will be first to receive our attention and the antagonism of our skill.

However, let us consider that at some future time.

Clinical Department.

RESULTS OF THE IMMUNIZATION OF FIFTY CHILDREN AT ST. MARY'S INFANT ASYLUM WITH THE ANTITOXIN OF DIPHTHERIA.

BY W. P. COUES, M.D., BOSTON.

During the latter part of February and March, 1898, an epidemic of diphtheria occurred at St. Mary's Infant Asylum, the origin of which was obscure.

It was decided, therefore, to immunize all the children in the house, and that no child should be admitted without receiving an immunizing dose of the serum.

The oldest child immunized was five years, the youngest one day. The serum was obtained from the Harvard Medical School, each bottle containing 10 c. c. of 1,000 units' strength. The largest immunizing dose given was 5 c. c. to the child of five years, the smallest ½ c. c. to the baby of one day. Children of six months to one year were given 4 c. c., those under six months 3 c. c. The injections were all given in the right axillary line. Most of the injections were made on March 22d to 24th; after this, each new child was immunized as it came in.

The older children were not affected in the least by the injections, playing as usual as soon as the dressing had been applied. The infants, on the contrary, were restless and cried for a considerable time after the injections. The temperature of three infants reached 101° five hours after the injections; the next morning two were at normal, and the third 99.5°. On the morning following the injections the younger children in the upper ward all had slight coughs; this was not noticed in the older children injected. The cough passed away in two or three days.

Urticaria occurred in 14 cases out of the 50 injected; it proved a late manifestation, occurring from nine days to two weeks after injection. A punctate erythema of brief duration occurred in two cases out of the 50 injected. In one case there was soreness and pain in the right knee-joint; this passed off in two days.

From February 15th to March 22d, 18 cases of diphtheria had occurred. From March 22d, the date the injections were begun, for a period of nearly three weeks, no cases of diphtheria occurred. At the end of this time the children were not immunized again. Cases of diphtheria began immediately to occur, and continued until all the children in the house were immunized again.

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Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY FRANCIS S. WATSON, M.D., BOSTON.

SURGERY OF THE KIDNEY.

In the *Lancet* of April 17th and the two succeeding numbers, are to be found the abstracts of three Hunterian lectures upon the above subject by Henry Morris, which are instructive and interesting. They begin with a short sketch of the history of this branch of surgery, in which the author traces the gradual evolution of the various renal operations, the establishment of nephrotomy, nephrectomy, and nephrolithotomy. The origin of nephropexy, partial excisions of the kidney, and the recent progress in the surgery of the ureter, are similarly outlined. The growth of the conservative tendency in renal surgery and its dependence upon the success of ureteral operations are shown. The writer predicts and urges a still further restriction of the practice of nephrectomy.

In the second lecture (*Lancet*, April 23d), renal calculus is dealt with in detail; it contains also an instructive study based upon observation of 44 cases of conditions simulating renal calculus and submitted to exploratory operation, which showed the absence of calculus, and in the large majority of cases revealed other conditions which explained the symptoms. Among these were movable kidney, a greatly congested kidney (the venous blood being retained because of the distortion of the veins at the hilum, or caused by pressure upon the vessels by tough perinephric cellular tissue), ureteritis, tuberculous disease, perirenal adhesions, suppurative cysts, renal and perirenal tumor. In a few cases the exploration showed no satisfactory cause for the symptoms; and these cases in the absence of more definite knowledge, one is obliged to designate as instances of nephralgia. Attention is called to instances of nephralgia which have been attributed to malarial poisoning, and of hematuria from the same source which have been described by Kirkham and Tiffany respectively. The latter part of the lecture deals with the subjects of unsuspected, quiescent, and migratory calculi, and ends with a number of conclusions, amongst which the following views are expressed:

The application of nephrolithotomy should be extended, and nephrotomy and nephrectomy restricted.

The theory that stone in one kidney, whether that kidney is painful or not, transmits pain to the opposite kidney is wholly unproved. Exploratory operations should always be made on the painful kidney in cases in which there is one-sided pain only.

Unsuspected renal calculi are very dangerous to their possessors, and when by systematic urinary examinations their presence is strongly suspected, operation for their removal should be promptly undertaken regardless of the absence of pain; and the same rule should be observed with regard to quiescent calculus.

The teaching that renal calculus with mild symptoms of recent date is to be treated expectantly, should be discarded. When its presence is strongly suspected, it should be searched for by exploratory operation, and, if found, removed.

The writer describes the technique of the operation for exploring the kidney and ureter. The incision ordinarily used by him begins an inch above and in front of the anterior superior iliac spine, and extends outwards and backwards to the outer edge of the erector spinæ muscle, about a finger's breadth below the last rib. The incision is lengthened more or less according to varying conditions, for example, the skin incision may be prolonged from the upper end of the cut, a short vertical incision may be carried upward from the upper end of the incision over the back of the twelfth rib, which is useful in facilitating the excision of the rib if required. More room may also be gained by incising slightly the outer edges of the quadratus lumborum. If more space is required anteriorly for exposing the course of the ureter, stopping hemorrhage, etc., the lower end of the incision may be prolonged downward, toward and then parallel to Poupart's ligament, about one inch above, as far as the internal abdominal ring if need be.

The kidney should be thoroughly freed from its attachments and brought outside the wound whenever it is possible. The pedicle of the kidney should then be compressed between the finger and thumb of the left hand, and the incision into the kidney should be made upon its convex border. The calyces are then explored through the wound by the finger.

Needling the kidney to detect calculus is unreliable, and should be discarded. In all cases the ureter should be explored by passing a catheter through it from the renal pelvis. If its orifice cannot be readily found through the kidney wound, a very small incision should be made in the posterior surface of the infundibulum and the ureter explored through this opening. Caution is given against cutting the renal vein through mistaking it for the pelvis.

Appended to these lectures is a table of Mr. Morris's nephrolithotomies in detail, and short abstracts of two other tables, containing, with the exception of the last one, a series of kidney cases operated upon by him. From these tables the following data are taken:

Nephrolithotomies, 34 cases, 1 death (sinus persisted in five cases).

Nephrotomies for calculus, 44 cases, 11 deaths.

Nephrectomy for stone, 18 cases, 5 deaths.

Exploratory operations, 42 cases, 2 deaths. Relief of painful symptoms occurred in all but seven. These operations were undertaken for cases simulating calculus, none being found. They show the large percentage in which relief may be expected from this operation in various other renal conditions in which the diagnosis has been that of calculus, or has not been possible prior to operation.

Nephropexy, 57 cases, 0 deaths. In one case only did failure to relieve occur.

Nephrotomy, nephrectomy, and partial resections for tuberculous disease of the kidney, 28 cases, 5 deaths from operation, 4 subsequent deaths from tuberculosis of other organs.

Nephrectomies for fistulæ, etc., 5 cases, 2 deaths.

Operation for hydronephrosis and pyronephrosis (nature of operation not specified). 20 cases, 3 deaths.

Operations for tumors of the kidney, 15 cases (1 retroperitoneal), 5 for cystic disease, 9 for malignant disease. One case of cystic disease died, and three of malignant disease following operation; two more of the latter died subsequently from recurrence.

Injuries of the kidney, 4 cases, 0 deaths. In two of them exploratory operation was done, in one nephrectomy, and in one ureterectomy.

The last table consists of 49 cases collected from various sources of calculous anuria in which operation was performed for this condition, of these, 25 died. Attention is called to the great mortality of this condition when left to itself.

OPERATIONS ON THE KIDNEY WITHOUT DIVIDING THE MUSCLES, ETC.

Mayo Robson,[1] describes a method of exposing and operating upon the kidney without the division of muscles, vessels or nerves. The operation is carried out in a similar manner to that advocated by MacBurney for appendicitis, and, as the writer states, it has been already practised by Abbe of New York, who applied it in doing a nephrectomy.

The division of the muscles is avoided by splitting them in the direction of their fibres instead of cutting them across; the incision begins on the inner side of the anterior superior spine of the ilium and is carried upward and backward obliquely toward the tip of the last rib. Fibres of the external oblique and its aponeurosis are split and retracted; the internal oblique muscle is then split in a line between the ninth costal cartilage and the posterior superior spine of the ilium. When the fingers are pushed through the internal oblique so split, the fibres of the transversalis are pierced and can be retracted along with the former. When this is done, the transversalis fascia is exposed; this is incised, and the perirenal fat is reached; upon separating this, the kidney is laid bare. If the pedicle of the kidney is moderately long, the latter can be brought out through the wound and its interior explored through an incision in its posterior border, or otherwise operated upon according to circumstances; if calculus is removed, the kidney wound is sutured. After cleansing the field of operation, the retractors are withdrawn, when the separated muscles at once fall together and close the wound. Its apposition may be further secured by the insertion of a few catgut sutures. The skin wound is then closed. Ordinarily not a single vessel ligature will be required. The advantages claimed for this method are: (1) that there is no division of the muscles, and hence no weakening of the abdominal wall; (2) no vessels are divided, hence time is saved and healing *per primam* made more likely; (3) no nerves are divided; (4) the operation is done with the patient lying on the back; (5) convalescence is shortened.

A RECENT SERIES OF ONE HUNDRED OPERATIONS FOR STONE IN THE BLADDER.

Freyer, in the same number of the *Lancet*, p. 1319, briefly refers to the results of the above-mentioned operations, and to some points of interest connected with them, amongst which are the following: The method employed was litholapaxy in all but two, in one of which a suprapubic, and in the other a median, lithotomy were done. There was no death in the whole series. Freyer has modified the instruments of Bigelow by substituting a fenestrated blade for the nonfenestrated blade of the lithotrite, by doing away with the tap at the top of the aspirating bulb, and by shortening the distance between the bulb and the bladder.

One stone of the series was an oxalate weighing three ounces and twenty grains. This the writer removed by litholapaxy in twenty-four minutes.

The writer denies the assertion that has been made that the results of litholapaxy performed upon the natives of India in which the greater part of his wide experience was gained, are more favorable because of greater power to resist surgical operations by them than by Englishmen. In corrobation of this he compares the mortality of 2,592 lithotomies performed upon Indian natives with 1,827 lithotomies collected by Sir Henry Thompson, in both of which it was nearly the same, namely, 13 per cent. and 12½ per cent. respectively. He also calls attention to the average age of patients operated upon in England and in India, it being eleven years greater in the former. The number of cases in which stone is complicated by prostatic hypertrophy is much greater in England than in India.

SUCCESSFUL NEPHRORRAPHY.

A successful case of nephrorraphy for the relief of threatening symptoms during pregnancy is reported by

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[1] Lancet, May 14, 1898, p. 1315.

J. Merkel.[2] The patient was in the fourth month of pregnancy, when she was attacked with severe abdominal pain on the left side and frequent and persistent vomiting. These symptoms were referred by the surgeon to an obstruction of the ureter produced by an abnormal position of a movable kidney; which proved to be the case on operation, the kidney being found rotated upon its long axis. After its reposition and fixation by nephrorraphy prompt and entire relief of the symptoms followed and the pregnancy went on to the normal term in a perfectly natural manner.

ULTIMATE RESULTS OF CASTRATION IN CASES OF PROSTATIC HYPERTROPHY.

In an editorial article of the May number of the *Annals of Surgery*, Pilcher gives some observations upon the ultimate results as a means of relief for obstructive hypertrophy of the prostate, as follows:

CASE I. Time since castration, three years. Present age, seventy-seven. Health excellent. Still has five ounces of residual urine, which are withdrawn twice daily by catheter. Urinates spontaneously every two or three hours.

CASE II. Time since operation, two and a half years. Age, fifty-eight. Notable improvement in bodily and mental vigor since operation. Had had a greatly overdistended bladder and dribbling urine. Still has 10 oz. residuum, and has to use the catheter. Prior to operation there was chronic retention, with 64 oz. in the distended bladder.

CASE III. Time since operation, two and a quarter years. Age, fifty-four. Some residual urine remains, and he continues to have cystitis. Is obliged to use catheter and bladder irrigation. Urination is now more difficult than during the first year after the operation.

CASE IV. Time since operation, two years. Age, sixty-seven. Health excellent. No mention made of the condition of the bladder.

CASE V. Time since operation, one and three-quarters years. Age, sixty-four. In good health and free from all urinary symptoms.

CASE VI. Time since operation, one and a quarter years. Age, seventy-two. In good health and free from all urinary disturbance.

CASE VII. Time since operation, one and a half years. Age, seventy-four years. In vigorous health. No mention of the condition of the bladder. It is unfortunate that the writer has not made a more detailed report of some of these cases.

In the first part of the article there is recorded another and striking case as follows: The patient, aged seventy-two years, suffered from obstructive prostatic disease not relievable by catheterization. Suprapubic cystotomy and double vasectomy gave him marked relief and restored the power of voluntary urination. Both results were temporary, however; and at the end of four months obstructive symptoms were again marked. He was then castrated. Gradual amelioration of the urinary symptoms followed; and at the end of four months he was performing the urinary function normally, and was in excellent health again.

LUMBAR NEPHROPEXY WITHOUT SUTURING.

Senn[3] exposes the kidney by the usual lumbar incision; the fat capsule removed over the posterior aspect of the organ, and the fibrous capsule scarified with a needle. The lower end of the kidney is brought forward into the wound and denuded, and a strip of iodoform gauze an inch wide is placed beneath the lower end of the organ, both ends of it being brought out over the wound margins. The floor of the wound on either side of the kidney is then packed with iodoform gauze strips in such a way as to hold back the fat capsule from the scarified posterior aspect of the kidney, leaving that surface well exposed. This is then covered with a thin layer of the same piece of gauze, and the whole wound is tamponed. The wound is left entirely without suture. The patient is then placed in bed, lying on the back, the foot of the bed slightly elevated; and he is kept there for four weeks. At the end of five or six days the gauze tampon and packing are removed and the wound closes by granulation. Both immediate and remote results are reported as being satisfactory.

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Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SURGICAL SECTION, DENVER, JUNE 7, 8, 9 AND 10, 1898.

(Concluded from No. 1, p. 14.)

SECOND DAY. — MORNING SESSION.

DR. G. W. MIEL, of Denver, read a paper entitled

PENETRATING WOUNDS OF THE POPLITEAL ARTERY.

The author stated that incised wounds of more than one-eighth of an inch in length required double ligation and extirpation of the part between. He stated that occasionally the artery was divided from within, and in his opinion one of the most difficult problems for a surgeon was what to do in a case of a complicated wound of the popliteal artery. He believed the first consideration should be the life of the patient, and under any circumstances recommended that the external wound should only be loosely closed. While complicated perforation of the popliteal artery showed a mortality of ten per cent., amputation of necessity seemed to be a much more serious operation than amputation of expediency.

DR. B. MERRILL RICKETTS referred to the work of Dr. Crile, of Cleveland, in this connection, who had tied the common carotid in a human being for from twelve to twenty-four hours, without injurious effect. He stated that he had recently torn loose the iliac vein while operating for the removal of a tumor, in which the results of ligation were most gratifying, and quoted a case which occurred in his brother's practice fourteen years ago where the deep profunda artery was shot off close to the femur. Amputation had to be performed, and the patient died forty-eight hours later.

DR. OLIVER, of Cincinnati, detailed a case occurring in a boy twelve years of age who had sustained a compound fracture at the epiphyseal line, which was reduced, but symptoms of obstructive circulation appeared on the second day, and amputation had to be performed on the ninth day. Subsequent dissection of the leg showed considerable effusion in the deep fascia, which no doubt caused the obstruction and resulting gangrene. It was found that two inches of the popliteal artery had been destroyed.

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[2] Munch. med. Woch., No. 31, 1897.

[3] Journal American Medical Association, December 11, 1897.

Dr. Tinker, of Philadelphia, referred to an experiment made some time since of dividing the descending aorta in an ass, firm union subsequently taking place.

Dr. Ricketts accounted for the success of this experiment on account of the large size of the artery, claiming that anastomoses are more successful in the larger arteries.

Dr. Miel closed the discussion by stating that temporary closure of the vessels was especially desirable in wounds about the mouth, throat and tonsils. He referred to a case of gangrene of the leg following amputation of the foot, where he had believed the circulation was good, the man subsequently dying from infection. He also related a case of compound fracture of the knee with injury of the popliteal artery where amputation was deferred, and gangrene resulted.

Dr. D. W. Graham, of Chicago, read a paper entitled

PRIMARY CARCINOMA OF THE AXILLA.

The author stated that frequently the first clinical manifestation of primary carcinoma of the breast was an enlargement of the axillary glands. He considered that pathologically the sweat glands were of great importance, as they are situated under the skin and not in it, and cases of carcinoma have been known to originate from them. He referred to the statistics on the subject of his paper, but did not believe that more than 18 of the reported cases were really primary carcinoma of the axilla. He concluded his paper by detailing two cases operated upon by himself.

Dr. Charles A. Powers, of Denver, commented on the great practical importance of this subject and urged the removal of every part of a gland when operating for carcinoma. He pleaded for early recognition and early extirpation in these cases, as being the keynotes to success, and commented on the difficulty of clinical differential diagnosis between a benign and a malignant growth.

Dr. Ochsner, of Chicago, called attention to the fact that he had seen three carcinomatous growths at a point at the inner limit of the axilla and the lower edge of the pectoralis major muscle, the nodule in each case being freely movable underneath the skin, and doubtless arose from glandular tissue, no doubt a portion of the mammary gland.

Dr. A. D. Bevan, of Chicago, called attention to two points, first, that there may be a small primary focus overshadowed by the secondary mass; or, second, the encapsulation of a piece of epiblastic tissue which has developed into carcinoma. The primary growth may be in the mammary gland and the secondary mass may be in the axilla.

Dr. J. B. Murphy asked whether the skin was movable over the tumor in the early stages in the cases cited by the author.

Dr. William L. Rodman, of Louisville, reported a case similar to Dr. Graham's of carcinoma of the axilla, which was removed, but was followed by death of the patient. He agreed with other speakers that a small lump in the breast may be overlooked and the growth in the axilla considered as primary when it is really secondary.

He laid great stress upon the danger of infection in operating upon these cases, and believed it to be even more necessary to remove the glands in the axilla than it was the primary growth in the breast itself.

Dr. Graham believed that many cases of fibroadenoma originated in the sweat glands as well as in the mammary glands, and stated that he did not see why a focus in the prostate could not just as well be secondary as primary. In one of these cases, the skin was movable over the tumor while in the other it was not, and he called attention to the fact that the sweat glands are under the skin and not in it. He believed that it was perfectly possible to have a supernumerary mammary nodule in the male as well as in the female.

Dr. M. L. Harris, of Chicago, read a paper entitled

CLINICAL RESULTS OBTAINED BY THE USE OF MY INSTRUMENT FOR OBTAINING THE URINE SEPARATELY FROM THE TWO KIDNEYS.

In reporting the results of the chemical and microscopical examinations of the urine obtained from the two kidneys, it was shown that a great difference existed, notably that that obtained from one kidney would be acid in reaction while that from the other was neutral. He claimed it was perfectly possible to collect the urine from the two kidneys by means of this instrument, even though a purulent cystitis might be present at the time. Four cases were quoted where the instrument had been used with excellent results and he later gave a practical demonstration of the use of the instrument.

Dr. McArthur, of Chicago, commended the author very highly on the excellence of the instrument and referred to some very gratifying results obtained by himself in its use. He mentioned a number of circumstances where the information elicited by its employment would be of inestimable value, and strongly advised the members of the Section to give it a trial.

Dr. Macbeth, of Denver, demonstrated a new surgical splint.

SECOND DAY. — AFTERNOON SESSION.

A paper entitled

THE USE OF MIXED TOXINS OF ERYSIPELAS AND BACILLUS PRODIGIOSUS IN THE TREATMENT OF INOPERABLE SARCOMA, WITH IMMEDIATE AND FINAL RESULTS BASED UPON A PERSONAL EXPERIENCE OF SIX YEARS

was read by **Dr. William B. Coley**, of New York.

The author stated that he had restricted the use of the toxins to inoperable cases, of which he had treated 84. In the case of children he usually employs the filtered toxins, but always prefers to use the combined toxins of erysipelas and bacillus prodigiosus. He described in detail the method of preparation, and pointed out that greater virulence was secured by passing through rabbits. He denied that, as stated by some authors, the results obtained were local, although, when possible, the injections were given locally, and claimed that the action was both systemic and local, the severity of the reaction depending largely upon the rapidity of absorption. As to the dose to be employed, it is his custom to begin with a minimum dose and slowly increase the strength daily, the maximum dose depending on the virulence of the culture. He did not believe treatment should be continued more than three weeks if no improvement showed itself by that time.

The paper concluded with a brief synopsis of several cases treated by the author by this method, with results obtained.

Dr. McArthur, of Chicago, spoke in favor of this method of treatment, and pointed out that it was only in inoperable cases that the author employed and recommended it.

Dr. Harris inquired why it was of no use in carcinoma.

Dr. Lewis, of Topeka, heartily commended this treatment, and gave the details of one case which put the toxins to a severe test but where a cure resulted from their use.

Dr. A. D. Bevan, of Chicago, called attention to the fact that, in his opinion, gummata were occasionally mistaken for sarcomata and treated as such, which accounted for a number of failures to successfully treat the condition.

Dr. Coley closed the discussion by stating that only in one case of epithelioma of the mouth had he seen good results follow the use of the toxins, so that he could not recommend them in carcinoma. He did not think that gummata and sarcomata would be confounded very often, except, possibly, round-cell sarcoma occasionally.

Dr. W. W. Keen, of Philadelphia, read a paper on

THE ADVANTAGES OF A PERMANENT ARTIFICIAL ANUS, AND OF TOTAL CLOSURE OF THE SACRAL END OF THE RECTUM IN OPERATIONS FOR CANCER OF THE RECTUM.

Details of several of the cases operated upon, with results, were given, and it was shown that several of the patients were sufficiently improved to be able to ride bicycles. Attention was called to the fact that the operation did away with the necessity of wearing a napkin at all times, which was one of the objectionable features of the old operations. The operation was shown on the blackboard and briefly described.

Dr. A. D. Bevan asked why the entire lower segment of the bowel was not removed instead of being closed, and **Dr. William N. Harsha**, of Chicago, suggested the possibility of the lower segment assuming the condition of a vestigeal organ.

Dr. Keen stated that to remove the lower segment added to the risk of the operation, and he did not consider that it could in any way be considered as a vestigeal organ, which was hereditary.

SURGICAL DEMONSTRATION.

Dr. Charles A. Powers, of Denver, demonstrated three cases instead of reading a paper, the first being a child, who, at the age of three months, developed a large congenital coccygeal tumor, which the author considered a tubulo-dermoid. The second case was one of appendicitis, upon whom three operations were performed, at one of which the Murphy button was inserted, and passed thirty days later. The third case was one of T-fracture at the elbow-joint, where good results were obtained by treatment in the flexed position.

Dr. Hyatt, of Pennsylvania, commented on the last case, and **Dr. J. P. Lord**, of Omaha, Neb., spoke on the relative merits of the flexed and extended positions in the treatment of these fractures, while **Dr. McArthur**, of Chicago, did not think either as good as wiring.

Dr. F. W. McRae, of Atlanta, Ga., pointed out that the case of appendicitis was an excellent illustration of the inadvisability of doing too much surgery at one sitting.

Dr. Powers briefly replied to those who discussed the cases.

Dr. H. A. Hare, of Philadelphia, read a paper entitled

THE MEDICAL ASPECT OF APPENDICITIS.

After dwelling at some length on the medical side of this question and on typhoid fever as a complication, the subject was divided into three classes: first, those that undoubtedly should be operated upon; second, those about which doubt exists; and, third, those that get well of moderate attacks and have no more. Some remarks were made on each class and its treatment.

Dr. H. D. Niles, of Salt Lake City, read a paper entitled

THE TIME TO OPERATE IN APPENDICITIS.

Almost the entire paper was devoted to strongly advocating immediate operation in all cases, the probable mortality when this is done being placed at not more than two per cent.

Dr. William N. Harsha, of Chicago, read a paper entitled

THE EARLY TREATMENT AND INDICATIONS FOR OPERATION IN APPENDICITIS.

The conclusion arrived at by the author was that twenty-four hours was long enough to wait before interfering surgically, during which time he advocated the use of codeine and cathartics.

Dr. W. W. Keen took exception to the statements in the papers by Drs. Niles and Harsha, especially as to the use of opium, the advisability of early operation in all cases and the two-per-cent. mortality, which he considered lower than could be hoped for in 100 operations on healthy individuals.

Dr. J. Ransohoff, of Cincinnati, commented on the great care needed in the diagnosis and treatment of these cases.

Dr. F. W. McRae agreed entirely with both speakers, adding that he believed every case of appendicitis in children should be operated upon.

Dr. James E. Moore, of Minneapolis, and **Dr. H. H. Grant**, of Louisville, pleaded for some definite line of action in cases of this disease. both by physicians and surgeons, while **Dr. William B. Coley** considered common sense was the most important factor in the treatment of these conditions always.

Dr. J. B. Murphy, of Chicago, argued strongly in favor of early operation, and believed that the probable two-per-cent. mortality was the maximum rather than the minimum when this was done in all cases.

Dr. Conner, of Chicago, commented on the very variable results of treatment of appendicitis, while **Dr. R. H. Reed**, of Rock Springs, Wyo., agreed with Dr. Murphy as to early operation, as did **Dr. Eagleston**, of Seattle, who was also in favor of the use of opium.

Dr. Ochsner, of Chicago, while believing that early operation if performed at all would lessen the mortality, stated that putting the part at rest by stopping all food by the mouth was beneficial.

Dr. Hare, of Utah, urged that the Section lay down the best general rule to be followed by country practitioners, and **Dr. Earl**, of Wisconsin, was in favor of early operation as a general rule.

Drs. Niles and **Harsha** briefly replied in closing.

THIRD DAY. — MORNING SESSION.

Dr. A. H. Levings, of Milwaukee, read a paper entitled

THE COURSE AND TREATMENT OF INJURIES TO THE PERIPHERAL NERVES.

Various forms of injury and repair were referred to, and the importance of asepsis and approximation of the ends without tension was illustrated. It was stated that absolute rest of the limb after repairing an injured nerve was not necessary.

Dr. Charles A. Powers, of Denver, related a case of his where sensation returned completely but function did not.

Dr. R. H. Reed, of Rock Springs, Wyo., demonstrated on the blackboard a method which had given him excellent results.

Dr. Levings stated that it was common for sensation to be recovered and not motion, and believed Dr. Reed's method a good one.

Dr. R. H. Reed read a paper entitled

POST-OPERATIVE INSANITY.

In addition to relating his own experience with these cases, the author had placed himself in communication with many of the leading surgeons of the country, and read extracts from their replies.

Very slight operations, it was shown, would sometimes be followed by marked insanity, as illustrated in some of the cases quoted. Details were given of a case operated upon for a local condition, who, although insane prior to the operation, was perfectly sane afterwards, and the difficulty of explaining this was commented upon.

Dr. A. J. Ochsner, of Chicago, discussed at some length, and gave his experience with seven cases of post-operative insanity, illustrating and emphasizing the points brought out in the excellent paper.

Dr. Reed closed by thanking the members for the extended discussion of his paper, and related a case of insanity which occurred as the result of a severe fright.

Dr. Henry O. Marcy, of Boston, read a paper entitled

TENDON SUTURE, ITS PREPARATION AND USES.

THIRD DAY. — AFTERNOON SESSION.

EXPERIMENTAL RESEARCH INTO THE EFFECTS OF TEMPORARY CLOSING OF THE CAROTID ARTERIES; REPORT OF CASE; EXHIBITION OF A NEW INSTRUMENT.

A paper on the above subject, by **Dr. George W. Crile**, of Cleveland, and for which the Senn medal was awarded, was read in part in the absence of the author, but was not discussed.

Dr. George W. Johnson, of Dunning, Ill., read a paper entitled

RADICAL CURE FOR HERNIA AND HYPERTROPHIED PROSTATE IN OLD MEN; REPORT OF CASES.

Dr. A. J. Ochsner agreed entirely with the ideas as expressed in the paper, and commented on the fact that herniæ in male children could frequently be cured by operating for phimosis, which he had found almost always present.

Dr. J. W. Mayo, of Rochester, Minn., said that the paper would be appreciated by those who had to do with patients in institutions. He had for some years done the surgical work in two large hospitals for the insane, one having 1,200 inmates and the other 1,000, and it had been the custom in those institutions for some years to do the radical operation for the cure of hernia among the inmates if otherwise proper subjects for operation. The insane by the nature of their malady being unable to properly retain their hernial protrusions by trusses often developed strangulated and gangrenous hernia and required formidable operations for relief; and among this class of cases, if hypertrophied prostate and resultant urinary difficulty co-existed, orchidectoryny has been done at the same time.

He heartily endorsed what the doctor had said as to the relief afforded and in this class of cases no reason of a sentimental nature can be entertained against it. From personal experience he stated that these patients stand operations well, but great care as to the preliminary cleansing of the skin should be taken. The insane are often filthy in their habits, with irritated skin, and this latter tends to develop the sebaceous glands which are the known habitat of the pyogenic organism.

In cases of large hernia, especially if unreducible, the patient should be put to bed, with the foot elevated to a moderate Trendelenburg position, for some days previous to the operation. This with a regulated diet will enable a safe return of the hernial contents, without danger of intra-abdominal tension from a sudden increase of the abdominal pressure.

Dr. Johnson closed by reading a large number of statistics.

Dr. Fred C. Valentine, of New York, read a paper entitled

A CONTRIBUTION TO THE STUDY OF THE SYMPTOMS OF CHRONIC GONORRHEA.

Dr. Bayard Holmes, of Chicago, read a paper entitled

ADRENAL TUMORS IN THE KIDNEY.

Dr. Howard A. Kelly, of Baltimore, read a paper entitled

PNEUMATURIA,

which he divided into four heads: first, those in which the air was mechanically introduced from without; second, those in which the gas developed in the urinary tract; third, those in which the gas reached the bladder from a surrounding area; and fourth, those in which the gas originated in the kidneys and ureters.

Dr. J. Ransohoff, of Cincinnati, and **Dr. A. F. Jonas**, of Omaha, Neb., each reported cases; and **Dr. D. W. Graham**, of Chicago, two cases.

Dr. James M. Anders, of Philadelphia, read a paper entitled

ETHER PNEUMONIA.

Dr. A. J. Ochsner stated that during the past four years he had instituted the plan of having his anesthetizers keep an accurate record of each case upon which he operated at the Augustana Hospital. During this period he had collected a little over 2,000 cases, and found that while the anesthetizer is making careful observations for his histories, he exercises a much greater amount of care in the administration of the anesthetic than is usual, and the disagreeable incidents are correspondingly fewer and less serious. During this period of time he had but two cases of pneumonia following anesthesia. Of course, in both of the cases the ether was the exciting cause.

The patient should be protected against sudden changes of temperature. The body should be covered with sterilized woollen blankets, and these with dry towels. No time should be wasted during the operation, for long-continued irritation from the anesthetic undoubtedly increases the likelihood of the occurrence of pneumonia. It is also very important not to permit the patient to inspire mucus from the pharynx.

Dr. W. J. Mayo discussed this paper fully, and considered it an important one, as all who are doing surgical work and using ether meet with cases of ether pneumonia. He called special attention to the necessity of having only clean apparatus for its administration. He stated that some five years ago the modified Clover inhaler was used at St. Mary's Hospital. As is well known, sponge is used, upon which the ether is poured for inhalation. These sponges were afterward washed and kept in alcohol and used again. About this time he operated upon a strangulated hernia in a man having a broncho-pneumonia at the time; but this, of course, under the circumstances, could not be considered. In a week he died of the pneumonia. Within a month there were three cases of pneumonia; and in the sputum of all streptococci were found in abundance, with and without the pneumococcus. Chloroform was substituted for ether and there was no further trouble. It occurred to him to have the sponges examined, and streptococci were found in abundance. The first case had infected the sponge used, and this in turn infected the vulnerable cases. Most of the operated patients escaped, as during this time a large number of cases were operated and had no trouble. The average mouth contains all sorts of germs; but the patient is used to his own germs and withstands their assaults better than from an actively infected stranger.

Operations on the stomach are often followed by septic pneumonia. The preliminary cleansing of the stomach previous to operation is seldom even reasonably perfect, and particularly is this true with a dilatation due to pyloric stenosis. The stomach in these cases will be found to contain a considerable quantity of material at the time of operation. As the stomach is elevated out of the wound, some of this material may be gravitated into the dependent esophagus and from there aspirated into the lungs. He reported losing one case from a septic pneumonia having its origin in this way. Great care is necessary to avoid this accident.

As the work on the stomach itself is not painful, the anesthesia need not be complete during these manipulations, and more ether given to close the incision later. He mentioned one feeble patient who was given a little anesthetic only for the abdominal incision, and who complained of no pain whatever during a somewhat prolonged operation on the stomach. A little anesthetic was used in closing the abdomen.

Dr. Harry M. Sherman, of San Francisco, Cal., read a paper entitled

TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

The following officers were appointed for the ensuing year: Chairman, Dr. W. J. Mayo, of Rochester, Minn.; Secretary, Dr. M. L. Harris, of Chicago, Ill.; Committee on Senn Medal, Dr. A. D. Bevan. of Chicago, Ill., Dr. Charles A. Powers, of Denver, and Dr. William B. Coley, of New York.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, Monday, February 21, 1898, the President, **Dr. R. H. Fitz**, in the chair.

Dr. Henry Jackson showed

AN INTERESTING SPECIMEN OF RUPTURE OF THE HEART.

The history is as follows: Mrs. G., white, age sixty eight. Previous health good, except for occasional attacks of indigestion. No symptoms suggestive of heart disease. Two sisters have "heart disease."

On Saturday, January 15, 1898, she was shopping in Boston, and as well as usual. Saturday night she had pain and distress in the region of the stomach, which she considered indigestion. She vomited and took two cathartic pills, resulting in several loose movements on Sunday, January 16th. Sunday she had great pain and distress in the region of the heart; the pain extended down the left arm. When seen by her son at noon on Sunday, she had severe pain; the pulse was very poor, intermittent and irregular; she was cyanotic. Morphine was given.

I saw her Sunday evening. Perfectly conscious. She vomited at intervals. She complained of great distress without definite pain. Heart-sounds fairly strong; no murmurs; action regular; area of heart not appreciably enlarged. The sounds were not accompanied by distinct murmurs, but there was a doubtful systolic sound along the left edge of the sternum. At the lower part of the left axillary region were fine râles, and a few coarse râles in the right lung.

Monday, January 17th. Two movements. Complained of gas in the stomach and bowels. Could not lie down in bed. No cough. Action of the heart rather better.

Tuesday, January 18th. Pulse hard to count; was about 100. The apex beat varied from 130 to 144; not intermittent. No murmur detected. Morphine was given, and in the evening the pulse was better. Nausea all day, and occasionally she vomited a small amount. Râles in the chest more numerous, especially at the left base.

Wednesday, January 19th. Heart-sounds feeble, but all the beats felt at the wrist; rate 100. She was decidedly more comfortable. Took more food. She slept a good deal during the day. At 11 P. M. was given morphine. At 1 A. M. she woke up, cried out, and in a few moments died.

She was perfectly conscious throughout her sickness.

Dr. W. T. Councilman was kind enough to make the post-mortem. The pericardial sac was filled with blood. In the anterior wall of the left ventricle was a large ragged tear and a small hole; the muscle was very soft and so discolored by blood that the heart looked as if it had been placed upon a block and hit with a hammer. The anterior coronary was completely occluded as the result of chronic endarteritis and secondary thrombus. Heart very slightly enlarged. Other organs practically normal.

Dr. Watson: Dr. Jackson spoke of the improbability of the patient living three days after rupture of the heart had taken place. I have recently seen the reports of some cases of rupture of the heart in which patients with penetrating wounds of the heart had lived a longer period than that. I cannot give the exact data.

Dr. W. F. Whitney: As to the closure of the coronary artery being the cause, it is well known that this is not always followed by softening and rupture. Curiously, on the day this specimen was brought in, there was another, from the City Hospital, in which there was also total occlusion of one of the coronary arteries at the place where it left the aorta; but in that heart there was not the slightest evidence of any degeneration, either fibrous or otherwise, as the result of this. The arteries elsewhere were in fairly good condition throughout, and we may suppose the nutrition had been supplied by means of collateral circulation around the apex.

A CASE OF ACUTE INTESTINAL OBSTRUCTION FROM A BAND, FOLLOWING CONFINEMENT.

Dr. F. B. Harrington: I would like to show a band which caused intestinal obstruction. It looks like a piece of good-sized catgut about an inch and a half long. The history of the case is briefly as follows: The wife of a physician was confined six days before I saw her. She had a perfectly comfortable day following the confinement. She then began to have great pain in the abdomen accompanied by vomiting. This kept up for five days, with greater or less severity. When I saw her there was fecal vomiting, distention and other signs of intestinal obstruction. On opening the abdomen it was found to be filled with a slightly brownish fluid. A fibroid about as large as an English walnut was felt on the right-hand side of the uterus. This fibroid was held firmly by a small band which was attached to the mesentery of the small intestine above. The tension upon this band was great, as it was practically bearing the weight of the uterus. Under this band was caught a loop of small intestine. Cutting the band freed the obstruction, and the gas passed readily through the previously collapsed intestine. The intestine was not injured by the pressure of the band to any extent. The band probably resulted from the attachment of the fibroid to the mesentery after the uterus had reached considerable size. In the process of involution after confinement the uterus pulled down the adhesion, forming a tense band which pressed upon the loop of intestine which lay under it. The patient made a rapid and complete recovery after the operation.

Dr. W. H. Baker: The case Dr. Harrington has just reported suggests the great importance in laparotomy of covering all denuded surfaces, not leaving any means of adhesions afterwards. It is thus possible by careful plastic surgery in the abdomen at the time of operation in many cases to prevent subsequent suffering. Although Dr. Harrington's case here is not one in point, yet still it suggests the importance of great care at the time of operation. Celiotomies are so common now we cannot be too careful to avoid any possibility of such adhesions or intestinal obstruction.

Dr. A. T. Cabot: I have here the x-ray pictures of an ankle-joint in which I did resection of the ankle seventeen years ago. The girl happened to come into my office the other day, and I took this picture. The operation consisted in removal of the whole astragalus and about an inch of the lower end of the tibia and fibula, the malleoli being taken off. I think these figures speak for themselves. She came in on account of a certain amount of pain in the foot, with a tendency to turn out. I think the pain was partly due to flattening of the arch, which will be remedied by a slight support in her boot.

Dr. Maurice H. Richardson and **Dr. G. W. W. Brewster** presented a paper entitled

REMARKS BASED UPON A PERSONAL EXPERIENCE OF 750 CASES OF APPENDICITIS, WITH A REVIEW OF 150 CONSECUTIVE CASES SUCCESSFULLY OPERATED UPON "IN THE INTERVAL."[1]

Dr. J. C. Warren: Dr. Richardson's system of collecting large numbers of cases is an excellent one; in this disease as well as in any other. Now that the domain of surgery is enlarging so extensively, we have new problems brought up to us continually; and the only way we can meet them properly is by grouping masses of cases in this way together and analyzing them as the results of our experience. I am sure the group which has been presented to us this evening is a most valuable and instructive one. A number of thoughts have occurred to me in the course of the reading of the paper that are of interest in the present standpoint of our knowledge and experience of the operation. First, in regard to the diagnosis. The plane on which we stand to-day is very different from the one on which we stood a few years ago. The problem is much easier; at the same time there are a certain remnant of cases which are liable to lead us into error. I think we have always to be cautious. I have come to the conclusion that in all cases of obscure abdominal trouble if we were to make the diagnosis "appendicitis" we should be right at least more than one-half the time, that lesion representing so large a proportion of acute abdominal inflammations. On the other hand, I have had several cases sent to me with an incorrect diagnosis. I recall one case which was sent to me for operation between the attacks. It turned out to be a case of painters' colic. Another case, in which the symptoms were urgent, proved to be a case of vesical calculus instead of appendicitis, some acute complication supervening upon an ailment which had existed really for over a year, but about which information had been withheld. In a third case no abdominal lesion whatever was found although several experienced diagnosticians had seen the case.

The question about the time to operate is one, of course, which is extremely important, but one which does not seem to be unanimously agreed upon at the present time. Although we all recognize the immense advantages of prompt surgical interference in the majority of cases, to operate in every case of diagnosis of appendicitis is a rule to which I do not think we can all subscribe. An abdominal operation, dividing as it does the abdominal parietes and exposing the abdominal cavity, is not a trivial ordeal for anybody to undergo. It should not be entered into lightly. It leaves behind certain disabilities: there are a scar and adhesions for one thing, the danger of hernia for another, and there is the inconvenience of being obliged to wear some form of apparatus afterwards, the possibility of secondary operation for the relief of fistula or for hernia looming up still before the patient, and then there is always the possibility which Dr. Richardson has indicated, to be sure by only one or two examples in his large series of cases, namely, of having symptoms come on after removal of the appendix, symptoms resembling an acute attack of appendicitis. I have had one such case in my experience, — a young man, an athlete, six months after an operation, was injured while coaching a foot-ball team and had a very sharp attack of localized peritonitis which laid him up for six weeks. There are of course adhesions there and other cicatricial formations which do not leave the patient just as well as if he had a perfectly healthy abdominal cavity. The time to operate, then, is one, as I have said, about which there is still a question. My feeling is that in acute forms of the disease, if seen early, it is best to operate at once, but in certain cases which have advanced far enough to make it evident that the affected area is a small one and is well walled off, it is proper to delay with the intention of operating after the acute symptoms have subsided, of operating between the attacks when we can operate by a different method from what we can when the wound is septic. It should be thoroughly understood, however, that under these circumstances the patient should be under the constant observation of a competent surgeon.

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[1] See page 25 of the Journal.

In regard to the technique of the operation, I am inclined to keep within the infected area rather than to go out into the open peritoneal cavity, although our present methods of walling off are so far superior to those formerly in use, still I should not feel authorized to adopt that as a routine method. In a grave case where it is desirable to inspect the rest of the abdominal cavity we might begin that way, otherwise I should prefer to open the infected area, and drain the abscess. I fully realize the importance of getting the appendix out at the time of the operation, at the same time I think it is wise not to feel under obligation always to do so, as there are circumstances, such as grave constitutional disturbance, when it is wiser to leave it perhaps for a second operation or to become obliterated or destroyed. I saw an autopsy on a patient recently who had no appendix. I presume it was obliterated by some inflammatory process in early life.

The question of the treatment of general peritonitis seems to me a very important one and one that interests me perhaps more than any other just at the present time. Out of about twenty-five cases of appendicitis in my service this winter at the hospital with four deaths, there was one case of general peritonitis successfully treated by Dr. Scudder. Finding a general peritonitis he made a large incision in the median line, washed out the abdominal cavity and sewed up the wound, leaving in salt solution, and the patient got well. A culture showed the organism to be a bacillus. I feel the necessity of being told a little more about the types of peritonitis from the point of view of etiology. A bacteriological classification of peritonitis with clinical illustrations would give valuable data on which to base an opinion as to prognosis.

The question of fecal fistula was alluded to by Dr. Richardson. I had one case in which there was a large artificial anus in the colon, on which I operated this winter, and during convalescence symptoms of intestinal obstruction suddenly occurred and the patient died, and at the autopsy it was found that there were several extensive slender adhesions running to different portions of the abdominal cavity, apparently independent of local adhesions. This patient had been operated on and the appendix removed outside the hospital and was sent in afterwards for cure of the artificial anus.

Hernia does not seem to me so frequent as some writers would lead us to suppose. In my experience I have had very few cases after the operation to operate upon. I think we can diminish the tendency gradually by the more careful methods of stitching up the abdominal wound, by provisional sutures, bringing the abdominal walls closely together and carefully watching the after-treatment. I think every surgeon who operates should inspect the wound himself and not leave it entirely to his assistant. Under those circumstances I think he can get the wound healed in a shorter time and the chances of hernia are correspondingly diminished.

Dr. F. S. Watson: Ever since our President, Dr. Fitz, first gave to the profession the knowledge upon this subject which has led to such important results, we have been accumulating data, and from the surgical point of view we have come to a fairly unanimous agreement with regard to many points concerning it.

In the first place with regard to diagnosis. This now presents but few difficulties, and I am happy to say that the days of delay on the part of the physician in summoning the surgeon are passing away.

The condition which has caused me doubt as to the diagnosis more often than any other is not that of gall stones, which the reader mentioned, but of acute salpingitis.

With respect to operative interference, my experience as compared with Dr. Richardson's is small; I have operated upon a little less than 100 cases, and watched the course of about 60 others in which no operation was done. So far as my experience goes, it leads me to incline to the opinion expressed by Dr. Cabot rather than to that of Dr. Richardson; that is to say, my tendency is to operate more, rather than less, frequently.

The cases in which I am not inclined to operate are those which one sees some time after the second or third day, and in which the attack is evidently subsiding. If I see the case earlier than this, however, even though it seems to be at the beginning one of moderate severity, I do not like to counsel delay. A few very unfortunate experiences from having waited, in this class of cases, brought me to this view some time ago. While it is probable that the majority of such cases will recover from that particular attack without operation, yet *I* cannot tell in any given case that this is to prove true of it, or whether it is to change at any moment into one of fatal severity; nor do I know of *any one* who can predict its subsequent course with any certainty. I am speaking now of those cases which are violent from the outset, though they are well marked enough examples of the disease. Now, if we wait under these circumstances, we shall in a certain number of instances be called upon by the sudden increase in the severity of the symptoms to operate; and no one will deny, I take it, that we have then allowed the more favorable time to have passed in which to operate. On the other side, it can only be urged that in a certain proportion of such cases, which I readily admit to be the majority, if we do not wait, we shall have operated where the patient would have recovered from the acute attack and allowed us the choice of operating in the quiescent period, or, if it is thought best, of waiting for a second manifestation of the disease before operating at all. Personally I prefer to incur the responsibility of having done the operation in some cases in which recovery might have occurred without it than that of having a fatal issue from the policy of waiting and having to operate after the milder seeming case has suddenly fulminated into one of unlooked-for virulence. There are one or two phrases that I should like to see expunged from the medical vocabulary as applied to the early cases. They are these: "Well, I think we will wait and see if the patient is not better to-morrow morning"; and "we will watch the case carefully and interfere if it seems necessary at any time."

I quite agree with the reader that it is better — if I understood him correctly — to postpone operation in acute cases that one is not called on to see until the fifth or sixth day, for a day or two longer sometimes, in order to allow of more thorough walling off of the general peritoneal cavity or the subsidence of the acute attack, if that becomes its evident course.

With regard to the desirability of operating between the attacks in cases of recurrent appendicitis, we are all, I fancy, in accord; and no better proof of the value of the procedure could be furnished than the series of brilliant results that has been presented to us to-night by Dr. Richardson.

To return to certain matters concerning the acute cases, I would urge that we should never decline operating in cases of general peritonitis arising in connection with appendicitis — unless, of course, the patient is moribund; for the record of recoveries after operation in apparently desperate conditions is constantly being added to by various surgeons, who under improved technique are enabled to save an increasing ratio of patients. I have been impressed with regard to the latter with the advantage of leaving a large quantity of hot saline solution in the abdominal cavity after thoroughly irrigating it with the same fluid, and also infusing under the skin one pint or rather more of the same solution at the time of operation and repeating it at intervals afterward.

I would call attention to another matter which has not been referred to this evening; it is that of closing the abdominal wound entirely after removing the appendix when it is acutely inflamed, but not perforated, and when there is no pus formation, though there may be adherent exudations upon its surface, and when the case is operated upon early. I did this first in 1893 under the above conditions, the patient making an uninterrupted recovery. Since that time I have repeated the experience in six other cases all of them making rapid and perfect recoveries, the wounds uniting uniformly by first intention. I have lately been told that Dr. Finney, of Baltimore, has treated a number of patients in the same way, and advocates it in appropriate cases. The idea upon which I based this manner of treatment was that they were cases which would probably have gone on to recovery had they not been operated upon, and I saw no reason why that result should not be made all the more probable by the removal of the cause of the disease, provided one felt confident of not having contaminated the peritoneal cavity, and had cleaned the field of operation thoroughly. The cases referred to are not to be taken as being recurrent ones. They were all first attacks, acute, some with severe symptoms; and with one or two exceptions they were operated upon in the first two days of the attack.

One word with regard to drainage. I do not like the use of gauze wicks; they may be useful to protect the surrounding tissues from infection, but they will only drain thin fluids and serve chiefly to obstruct the outflow of all else. The rubber drainage-tube remains with me the best means of evacuation. Glass or other rigid drainage-tubes have the disadvantage of sometimes injuring the intestines by pressure and causing fecal fistula.

Dr. Harrington: I was led to go directly into the abdominal cavity in acute appendicitis because I found that in the effort to remove the appendix one usually was obliged to expose the healthy intestine sooner or later.

I don't feel as Dr. Watson does about the matter of the wicks. I feel that they are of great value, not so much in the way of carrying off large quantities of fluid, but because of the non-septic adhesive peritonitis which they set up, which walls off the septic area from the rest of the cavity.

In these cases after you have emptied an abscess and packed it with gauze you seldom get a pouring out of pus for a day or two. During this time the gauze and wicks are absorbing whatever material there is, preventing its passage into the general cavity and strengthening the partition between the septic and the healthy areas. These wicks can be removed when they become saturated and fresh ones replaced. An interesting point to me in septic cases is the depressing effect of ether. Usually ether acts as a cardiac stimulant when first inhaled. In extreme septic peritonitis ether often acts immediately as a depressant. In some of these cases it has seemed to me that anesthesia of the abdominal walls produced by cocaine or by the freezing process might be tried to advantage. I fear that the closing up of the abdomen without drainage is likely to be carried too far. I don't believe that we can tell with certainty when a septic abdominal cavity will cease to form dangerous material which it cannot take care of. We have all had more or less experience with tapping abscesses in other parts of the body. They often refill. Sometimes they do not, but it is a dangerous experiment to make in the abdominal cavity.

McBurney has pointed out the danger of the reappearance of symptoms of acute appendicitis in cases in which the stump of the appendix contains a stricture which shuts off the cavity of the stump from the cecum. He advises the passage of a probe into the cecum through the stump before applying the ligature.

I feel very certain that cathartics and fruits will often bring on an attack of acute appendicitis in a predisposed patient. I recall the case of a man who came to the hospital for a simple operation. He was given very thorough catharsis and prepared for operation. There was unavoidable delay and the operation was deferred for a day or two. He was again prepared for operation, the vigorous catharsis being repeated. This was accompanied by free movements of the bowels and much pain during the night. In the morning it was found that the man had symptoms of appendicitis. He refused operation, went home and died in a few days from the attack with symptoms of septic general peritonitis.

We have to remember that long after operation for appendicitis obstruction of the bowels from bands and adhesions may occur. One of my own cases, a year after operation, died in a neighboring city without operation, with symptoms which seemed to me to have been those of intestinal obstruction. I did not see the case at this time. I have operated myself upon such a case in which the symptoms appeared more than a year after the original operation.

DR. E. H. STEVENS: One point has not been touched upon. A good deal has been said about pain in appendicitis, but nothing about tenderness: it seems to me a very important point in making a diagnosis. Tenderness localized over the seat of the appendix is of more importance than any other one symptom. In recurring (catarrhal) attacks of appendicitis there is often great pain, with little localized tenderness. There is a class of cases where the tenderness is so localized that the tender point can be covered by a silver dollar. If such a case has been going on for several days, it is a case to operate upon at once. This condition may exist with a normal pulse and temperature, but it is a condition of danger.

I think Dr. Cabot will remember a case in my own family. He had a chance to operate on two of my boys. One boy had had an attack that lasted a week; back in school a week, and then came down to breakfast in the morning saying the pain had returned; temperature normal, pulse 60. On examination a little spot was found that was decidedly tender on deep pressure. Dr. Cabot saw him the next day and thought it was a pretty mild attack; still perhaps it would be well to take it out. The inside of that appendix was very thoroughly diseased. I feel sure that within a very short time we should have had a perforation. That boy got well; the abdomen was sewed up at once. I have seen quite a number of cases of that kind where the thing which led me to an operation was the localized tenderness which remained without any pain and without any fever. It seems to me it is a very important point.

Another point is the question when to know you have a serious condition. This winter I have seen three cases of gangrenous appendices that were operated on within less than twenty-four hours of the first symptom, where the whole appendix was gangrenous, temperature below 100°, pulse below 80, where the only symptom was the general look of shock which the patient showed. The patient looked very sick, but the other conditions (pain and tenderness) were very little in evidence. Still, a gangrenous appendix throughout the whole length was found. It seems to me it is the most difficult matter in the world to know when to operate and when not to operate. Every operator must be guided by his experience.

DR. FITZ: To a certain extent the discussion is a confession of faith. We must not forget, however, that about 70 per cent. of cases of appendicitis have recovered without surgical treatment. Hence, if every patient is to be operated upon, a good deal of unnecessary operating will be done. We must bear in mind also that many patients are unable to have the benefit of the surgical skill of this community or of other large communities, and in the country, as a whole, it is perhaps more in the interest of the patient with appendicitis to escape immediate operation than to be operated upon.

DR. A. T. CABOT said, that, in regard to the question when not to operate (because that is the hardest thing for a surgeon to decide), he could only say that in his practice he found that the cases he did not operate on were getting constantly fewer rather than more. He expressed his indebtedness to Dr. Harrington for showing him the advantage of opening into the peritoneal cavity above the infected area, and thoroughly surrounding the seat of infection with a wall of gauze before going into it. He said that for two years with hardly an exception he had followed that method of treating all those cases of local tumor that he formerly had treated by cutting directly into the infected area and draining the abscess. The operation done in this way has seemed as safe as an operation for simple drainage of the abscess and has the decided advantage of removing the appendix and obviating the danger of subsequent attacks or of a persistent fistula connected with the appendix.

Dr. Cabot said that the two classes of cases in which he would postpone operation were those in which the patient was so sick that he could not bear the operation, where there was some chance that the abscess might drain through the intestine and thus relieve itself, and the cases in which the patient was so distinctly getting better that it seemed wise to wait until the subsidence of the attack and to then operate in a quiescent period.

One point not mentioned in regard to the detail of the operation is the great importance of draining the pelvis. It is quite common to find much pus in the pelvis and that is the low point into which the abdominal fluids naturally gravitate, and which, therefore, in all these cases, should be adequately provided with drainage. This can be accomplished with a combination of a wick and a tube.

DR. RICHARDSON: As one's experience and familiarity with abdominal operations increase, the safety of exploration and of aseptic operations is so conspicuous that he is inclined, perhaps, to radical rather than to conservative views. Such, at least, is my own tendency — an inclination which ought, I am sure, to be most carefully watched and restrained. In the question of operating in the interval for suspected appendicitis, for example, the procedure seems so simple and so safe that it is more than probable that unnecessary operations are done. An occasional death will take place as the result of these unnecessary operations. In certain forms of acute appendicitis my reluctance to operate arises from the deplorable mortality in that group — by no means small — in which operation converts a localized peritonitis into an uncontrollable general one. I have observed one thing in connection with abstract discussions and with concrete cases — we never have any difference of opinion, at the Massachusetts General Hospital, in a given case, as to the necessity of operating upon that case — and I venture to state that the surgeons and physicians, meeting here from different hospitals to discuss this question, would all at the bedside give the same advice. The trouble is that in our discussions here we are not talking about the same conditions.

X-RAY PICTURES OF AN ANKLE-JOINT.

DR. A. T. CABOT showed the x-ray pictures of an ankle-joint in which he did resection of the ankle seventeen years ago. The operation consisted in removal of the whole astragalus and about an inch of the lower end of the tibia and fibula, the maleoli being taken off. The final condition of the joint as shown by the skiagraph was very good. The os calcis rested firmly against the broad lower end of the tibia and fibula, and the arch of the foot was quite well preserved.

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THE CARE OF OUR WOUNDED SOLDIERS.

It has been said that the treatment of the wounded on the field of battle has ever in the past been characterized by neglect and cruelty. This, as a general proposition, cannot be true. Cyrus, Alexander, Cæsar, Hannibal, Napoleon loved their soldiers, and doubtless after every battle endeavored to save whom they could of the wounded, though millions must have perished through want of the knowledge and appliances of modern surgery.

It may be stated, however, as a truth to which there are too few exceptions, that kings and generals have been willing that their armies should fight and die for them, but that the unfortunate victims of missile and weapon were often abandoned to a terrible fate. Not seldom, in the nature of the case, it was impossible to give aid; the wounded died before succor could reach them or were dispatched without mercy by the enemy into whose hands they fell.

The annals of human misery have been sketched by many authors, but the chapter that adequately depicts the sufferings of the injured on the battlefield is yet to be written.

It may truly be said that the systematic organization of surgical means for the alleviation and amelioration of those wounded in battle is of modern date. In what other age of the world has mankind witnessed a Red Cross organization, caring alike for all the wounded, whether friends or foes; sanitary commissions carrying their beneficent arrangements into the very heart of the battle; or even the splendid surgical outfit with which every civilized government now supplements its army supplies? When have surgeons ever before displayed such heroism on the battlefield — a heroism which has led men, like Church, at the battle of La Quasina, off Santiago, to rush to the rescue of the wounded between two lines of fire, and with bullets pelting all around them, apply dressings and bandages and carry the injured men from the field to a place of safety? There never was a time when so much could be done for the injured soldier as to-day. By the antiseptic knowledge and skill which every army surgeon possesses, troublesome and dangerous septicemic complications, so common in the past, may be guarded against and in large measure eliminated; wounds of the viscera will not be as fatal as they once were; and compound fractures will not always be regarded as necessitating immediate amputation; even that bugaboo of past ages, hospital gangrene, will become rare. The violent antiphlogistic *régime*, so much in vogue half a century ago, will not, either in theory or practice, be adopted by the army surgeon.

There will, in the present Spanish-American war, be an improvement over the late War of Secession in the medical and surgical care of the sick and wounded, just as there have been advances in therapeutics and in surgery — and in no respect more than in antiseptic surgery — since that war terminated. A glance over that magnificent work "The Medical and Surgical History of the War of the Rebellion" will indicate the progress which has been made since 1865 in antiseptic surgery, to say nothing of the improved technique of multitudes of operations. The entire science of bacteriology, moreover, with all of its practical applications to medicine and surgery, has been developed since the late war. That once famous "Commentaries on Surgery," by Guthrie, was a favorite text-book of the army surgeon during the early sixties; a book which would be wholly inadequate as a guide to the modern army surgeon. The Röntgen-ray apparatus will undoubtedly be a valuable adjunct to the military surgeon in helping him to locate bullets, determine the extent of bone injuries, etc., and it is gratifying to note that the United States Army is to be well supplied with these instruments.

It may be said, then, in conclusion, that the military surgeon of to-day has a far better outfit for his work of caring for our wounded soldiers than his predecessors of thirty odd years ago. He will be expected, therefore, to do better work and save a larger percentage of lives. Unfortunately, however, the means and weapons of modern warfare are deadly and destructive to a degree never known in the past, necessarily, therefore, every battle will be attended with a larger mortality. Our soldiers on the battlefield in Cuba are meeting with lesions by shot and shell and ball at which our surgeons stand aghast, and the surgical history of the present war bids fair to be something unique.

Fighting seems to be becoming a business whose end is to kill the most men possible in the briefest space of time, while from the humanitarian side unprecedented efforts are put forth to rescue as many lives as possible before bleeding arteries have allowed the last drop of blood to escape, or open wounds have had time to become septic. It is not enough that an army should be sent into the field to attack the enemy; with it must be sent litters, awnings, ambulances and a complete outfit of hospital stores and surgical appliances, and the army department will meet public retribution which fails in these particulars.

The ideal arrangements, which, of course, will often from the difficulties of the situation fail of complete realization, is the providing of several ambulance stations, an arrangement which worked very well in the late war with the South. There is a first station immediately in rear of the battle-line to which the wounded are brought; stimulants are administered against shock, bleeding vessels compressed or tied, and bandages applied. Then they are hurried to a second station still more remote from danger, where a more thorough examination is made, where wounds are more carefully dressed, and they are thence transferred to the division hospital, which contains, or should contain, complete medical and surgical outfit. There has been some complaint that our army in Cuba has been slow in coming up to these requirements, but if the war continues the war department ought to be found equal to every demand.

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INTRACEREBRAL INJECTIONS OF ANTITOXIN IN TETANUS.

THE experiments of Roux and Borel, reported at the Madrid International Congress of Hygiene, on the intracerebral injection of antitetanic serum, were of great interest.

Acting on the theory that the frequent failure of the antitoxin treatment of tetanus is due to the fact that the antitetanic serum when injected into the blood became so dispersed and diluted as not to be carried in sufficient amount to the central nervous system, where alone its action can be effective, they practised intracerebral injections of the serum on 45 tetanized guinea-pigs, 35 of which recovered. Of 17 others which received injection of much larger quantities of antitoxin under the skin, only two survived.

On the basis of these experiments, Chauffard and Quenu have reported in *La Presse Médicale* for June 18th, a case in which the intracerebral injections of antitetanic serum were successfully employed in the human subject.

The patient, a healthy male, sixteen years of age, suffered a crush of the index and ring fingers by a falling sash. The incubation period was fourteen days, and on the seventeenth day trismus was present, but there was no affection of the muscles of deglutition or respiration, and there were no spasms. Twenty cubic centimetres of antitetanic serum were injected under the skin.

On the eighteenth day there was well-marked tonus of the muscles of the trunk. On this day M. Quenu trephined over the anterior part of the squamous portion of the temporal bone on either side, and through a hypodermic needle injected into each frontal lobe about two cubic centimetres of a concentrated serum at a depth of five or six centimetres. Slight improvement immediately followed the anesthesia, but the usual slow course observed in tetanus cases which end in recovery, whether or not under antitoxin treatment, ensued.

On the twenty-first day 20 c. c. of serum were injected subcutaneously, and 10 c. c. respectively on the twenty-fourth, twenty-fifth and twenty-sixth days. On the thirty-first day decided improvement was first manifested.

The writers in commenting upon their case are naturally unwilling to attach undue importance to a single case, but insist on the severity of the disease and the positive evidence afforded, and the editor of the New York *Medical Journal* is induced to remark, "It seems to us that Roux and Borel have now made a substantial advance in the serum treatment of tetanus."

Although the result in this single case was good, it seems to us that there are many reasons which suggest that the optimistic view expressed by our valued contemporary is somewhat premature.

In the first place, granting, as we must, that the central nervous system is the point at which the tetanus serum must take effect, it is not only the psychomotor centres, but the lower centres in the remainder of the brain and cord, and not simply those in the frontal lobe upon which the antitoxin must act. The antitoxin which is injected into any given part of the cerebral substance will inevitably be absorbed by the lymphatics, enter the venous circulation, and be distributed by the arteries to the remaining nervous tissue, exactly as it is as when injected into any other portion of the body. Although a certain amount may reach the posterior portions of the brain and the cord by direct diffusion, it is doubtful whether a larger amount would be diffused through the nervous system, as would reach it by a direct intravenous infusion into a vein of the arm.

Only a comparatively small amount of the serum could be injected into the brain without danger of producing at least grave cerebral edema, if not the actual destruction of centres and tracts of more or less importance at the seat of injection. Unless the preparation employed by Quenu and Chauffard were of vastly greater strength than the antitoxic serums ordinarily employed, it would be possible to inject only a fraction of an efficient dose into the cerebral tissue.

In order to administer the dose which Behring considers necessary (500 units), it is necessary to inject from 250 to 500 c. c. of the serums such as are provided by the New York and Massachusetts State Boards of Health. Such amounts it would be manifestly impossible to inject into the cerebral substance, and only by showing that diffusion adequate to make up for the necessarily small dose would result, can we hope that the method would prove efficient.

From one case, as the authors state, it is impossible to make deductions of value, and with regard to the alleged positive character of the evidence in this particular case we are compelled to demur. The case in the first place can hardly be called acute, as the incubation was long, fourteen days, and on the eighteenth day, when the intracerebral injection was made, the symptoms certainly were not severe. The course of the disease thereafter did not differ from that of the average case of tetanus which recovers.

The efficiency of the antitoxin treatment according to the methods previously in use, can hardly be regarded as proven, and there is reason to believe that the dosage has been almost uniformly insufficient. The case reported by Quenu and Chauffard was of so mild a type that it is of little value in estimating the worth of their procedure.

Although the experiments of Roux and Borel are suggestive, they require further confirmation before judgment can be pronounced as to their value. Therefore, while admitting the boldness of the operation and the brilliancy of the result in this case, it is incautious to affirm that a substantial advance has been made.

The experiments of Roux and Borel may have been suggested by the extremely interesting fact recently demonstrated by Wassermann and confirmed by Marie and others, that emulsion of normal cerebral tissue, when injected mixed with tetanus toxin, has an absolutely protective effect upon the animal (rabbit or guinea-pig) upon which the injection is practised. The activity at present exhibited in both the experimental and clinical fields upon the serum treatment of tetanus gives reason for the hope that such substantial progress will be made in the early future in treatment as has been recently effected in prophylaxis. But only by a slow and careful analysis based on a number of cases, which it will require much time to collect, can safe conclusions be based. Hasty speculation from a single case will not further the advance of knowledge.

MEDICAL NOTES.

Dr. Senn Chief of the Operating Staff before Santiago. — Lieutenant-Colonel Nicholas Senn has been detached from his duties as Surgeon to the Fifth Army Corps at Chickamauga, and appointed Chief of the Operating Staff of the Sixth Corps now before Santiago.

Murderers of Surgeons Taken.—It is reported that seven Spanish soldiers, who are known to have been in the band of sharpshooters who fired upon our ambulances at Santiago and killed Drs. Danforth and Troval, have been taken by our troops. It is probable that they will be hanged.

Gift of a Hospital to the Red Cross. — Mr. James Armstrong, of New York, has offered the Red Cross Society the use of his country house at Centre Hill, Fla., as a hospital. The house has twenty large rooms and is built on the highest point of land in the State, about seventy miles from Tampa.

Yellow Fever at Santiago? — As we go to press there are unconfirmed rumors of yellow fever among our troops before Santiago. It has been recognized for some days that cases of "low fever" were quite numerous; and the burning of the village of Siboney by the orders of General Miles upon his arrival is a suggestive circumstance.

Hospital Train in a Wreck. — The hospital train bearing the wounded to Fort McPherson, was in a rear-end collision six miles south of High Springs, Fla., on the evening of July 10th. No one was hurt, but the private car was demolished. The train, after some delay, proceeded to Fort McPherson.

Tetanus-Serum bearing the control number 13, made by Meister Lucius & Bruning, of Höchst-am-Main, is announced as withdrawn from the market, owing to the contents having deteriorated in immunizing units. As some of the firm's products find their way to America, and delay in the use of a proper tetanus-serum would be serious, the notice seems worth calling attention to. — *Philadelphia Medical Journal.*

The Danger of Yellow Fever in Key West.— There have been two cases of illness recently at Key West, which it is suspected may have been yellow fever. One of the patients was a sailor, who recovering from appendicitis was taken seriously ill and died in two days. The other case was an attendant at the Marine Hospital, and as the diagnosis in his case was doubtful, it may be questioned whether either case was genuine yellow fever.

Women-Nurses at the Brooklyn Naval Hospital. — Miss Helen Long, the daughter of the Secretary of the Navy, is, with three companions, regularly detailed as a nurse at the Naval Hospital at Brooklyn. They have been students in the medical course at the Johns Hopkins University, but have offered their services, during the summer vacation, to help take care of the sick and wounded sailors. This is said to be the first time since the Civil War that there has been volunteer female nursing done at this hospital.

Casualties of a Small Boy for One Week. — S. M. Worthington, M.D., of Versailles, Ky., writes: "My legacy to posterity, S. M. W., Jr., aged one and one-half years, swallowed a pin on Sunday; passed it on Monday. Swallowed three pins and five buttons on Tuesday; passed them all in one action on Wednesday. On Thursday, procuring my hypodermic syringe case, he took an unknown quantity of tablets of morphine, gr. $\frac{1}{4}$, and atropine, gr. $\frac{1}{150}$. By constant attention through that day and night he sufficiently revived to be taken riding on Friday. The horse shied. The hub shot through, throwing all out of the cart, and, catching in the fellœ, dragged the wheel flatwise. When I regained my feet the horse was running furiously up the rocky road, the boy lying on the wheel. Some sixty yards away he slid off on the roadside grass, without injury of any kind. On Saturday he rested from his labors in casualty. Sunday returning, he went with me to church and proved the promise, 'He giveth his beloved sleep.'" — *Medical Record.*

Kissing the Book. — "At the Central Criminal Court on June 23d Mr. Justice Grantham said that the testaments on which witnesses were sworn had been in use for a great many years, and he thought that it was time that the proper authorities should supply new ones. No one, however, seemed to know upon whom this duty devolves. A copy of the Gospels can, we believe, be procured for a penny, so it ought not to be difficult to supply new copies, but we earnestly hope that when new ones are supplied advantage will be taken by the judges to point out that the Scotch form of oath is perfectly valid and should invariably be preferred. We need not again go into the arguments against the practice of 'kissing the book,' and we merely mention the circumstance because it seems to us a favorable opportunity of doing away with the practice altogether." So says the London *Lancet*. If people will persist in kissing the book when a simpler and cleaner form of oath has been legalized, it would seem hardly worth while to take the trouble of providing new bibles for them to infect.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 13, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 18, scarlet fever 9, measles 45, typhoid fever 6.

Dr. H. C. Tinkham, of Burlington, professor of surgery in the University of Vermont, has been elected dean of the medical faculty, to succeed Dr. A. P. Grinnell, who had been dean for the past twenty-four years.

NEW YORK.

The Cornell Medical School. — The new Cornell Medical School has secured a lease of the building standing on the grounds of Bellevue Hospital for many years past occupied by Bellevue College, and will also have the use of the Loomis Laboratory building recently connected with the New York University Medical School. As Cornell University is a "co-ed" institution, its medical department will naturally have to accept students of both sexes, and it is stated that a large number of young women have already applied for admission.

The Summer Corps of the Board of Health. — The usual summer corps of extra physicians of the Board of Health, fifty in number, for work in the tenement-house districts of the city, have been appointed, and commenced their house to house visitation the first week in July. For this season at least their field of operation will be confined to the limits of the former city of New York, now comprising the Boroughs of Manhattan and the Bronx. All that is sought is to keep a supervision over the most densely populated sections, and there can be no question that a considerable saving of life is each year effected through this means. By the detection of unnoticed sanitary defects and of incipient cases of disease among young children much good is accomplished, and the work of the visiting physicians, who are provided with tickets for distribution, is ably seconded by the St. John's Guild, the Association for Improving the Condition of the Poor, the Children's Aid Society, and other similar agencies.

The Floating Hospital and Sanitary Station. — The St. John's Guild inaugurated the work of its floating hospital and sanitary station at New Dorp, Staten Island, on July 6th, and daily trips, except Sundays, will be made during the continuance of hot weather. Among the improvements introduced this year is a diet kitchen for the preparation of modified milk, in accordance with physicians' prescriptions. The distribution of modified milk has also been introduced this season at the sterilized milk depots maintained by Mr. Strauss at the recreation piers and at various other points among the tenement population. This work, as formerly, is under the direction of Mr. A. L. Kinkead, of the Health Department. The Association for the Improvement of the Condition of the Poor has erected new and commodious buildings at "Sea Breeze," its property at West Coney Island, which has an ocean front of 350 feet. These buildings will accommodate one hundred convalescent children and sixty mothers with their babies, and afford facilities for meeting the requirements of the additional number of day excursionists which it is proposed to entertain during the present summer. There will be four all-day excursions each week, in place of three, as formerly.

Opening of the Playgrounds for Vacation. — An important innovation having in view the welfare of the children of the poor has been made this summer, and on July 6th, the playgrounds of twenty of the public schools in the most crowded districts of the city were thrown open for the first time in the vacation season. On June 13th the Board of Education appropriated the sum of $15,000 for this purpose and referred the arrangement of the matter to a special committee. In the report of this committee, which was made to the Board on June 29th, it was recommended that the grounds should be used for play and for regular class exercises. But to avoid any semblance of restraint over the children's amusements it was suggested that supervision sufficient only to assist in the organization of games and sports should be employed. In the opinion of the committee the children of the kindergarten age would require more supervision and assistance than those of greater age, and it was thought that, in addition to games, the teaching of sewing and various kinds of constructive work might be profitably introduced. It was also recommended that on account of the nature of their work the supervisors and their assistants should be selected from kindergartners and young men and women recently graduated from college. There can be little question that by thus removing the tenement children from the streets a very excellent work has been accomplished. The Board of Education has also made provision for the usual vacation schools, where such children as desire may have the opportunity for short sessions of study during the summer.

Miscellany.

THE HEALTH OF SANTIAGO DE CUBA.

We learn that during the past ten years there have been two epidemic visitations of yellow fever in Santiago and its neighborhood, with cases scattered in the intervening years, so that the infection of the fever must be considered to be there and ready at any time, under favorable conditions, to cause an outbreak among our unacclimated men when they leave the mountains and enter the city. In November, 1890, after a period of freedom from fever, the disease was introduced into Santiago and its vicinity by workmen from Spain who had been ashore for some days at Porto Rico while *en route* to Cuba. Yellow fever was then prevailing at Porto Rico and some of the Spanish emigrants became infected. These settled in Santiago and introduced yellow fever among the people employed at the Juragua Iron Works. The disease prevailed at these works for twelve months, attaining its maximum in June, 1891, during which month there were 57 cases, of which 21 were fatal, among the 1,300 people in the employ of the Iron Company. During the twelve months the epidemic gave a sum of about 265 cases, of which 100 were fatal. A few cases occurred in the winter of 1892–93, and again in the winter months of 1894; but in July, 1895, something like an epidemic was again lighted up, lasting until November and giving 107 cases, of which 47 were fatal. The disease prevailed at these periods among the population of Santiago. Since then only sporadic cases have occurred. — *Journal of the American Medical Association.*

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THE NEW SERVICE BULLET.

"A description of the new service bullet which has been invented to supersede the Dum-dum bullet was published in the *Times* of June 28th. The Dum-dum bullet was introduced in India for the purpose of stopping the rush of fanatics (*ghasi*). It is a solid bullet of hardened lead enveloped in nickel all but the point which was left bare, so that on impact the bullet 'set up,' or expanded, inflicting much more severe wounds than the fully-enveloped bullet, which in most cases passed through the body unaltered, much as if it were a bolt of steel. It is stated that the new service bullet is of the same diameter (0.303), the same length (1⅝ inches), and the same weight (215 grains), as the Lee-Metford. 'The case is of nickel, the base only being left empty' (*sic*) — it is evident here that 'case' means the 'envelope' of the bullet, not the cartridge case. The conical end is left empty, and when it strikes a man burrs, opens backward, and lodges in the body, penetration being lessened and shock increased. We have not seen the bullet in question, and are dependent on the *Times* report; but as we read it the new bullet seems in some ways to resemble the later pattern Snider bullet in which there was a cavity in the conical apex, which, containing air compressed on impact, burst open violently and inflicted most severe wounds. In the bullet it would appear that the cavity will be formed by the nickel envelope being left empty in the nose or apex, and on impact the compressed air will act as an explosive, burst and burr the envelope, which, spreading open, will present a large striking surface, and cause immense injuries to trunk and limbs. It would be interesting to know if any experiments with this new bullet have been made on the bodies of animals in the presence of military surgeons, and, if so, what their report has been. Professor v. Bruns made some incisive remarks on the Dum-dum bullet, going so far as to call it an inhumane projectile; but if the new service bullet acts as it is reported to do, probably some stronger language will result."[1]

The above account of the new service bullet adopted for the British army would indicate that the principle of the Dum-dum bullet is being carried to an extreme.

The reports of the severity of the mutilations caused both by the Spanish and American bullets in Cuba, would seem to indicate that there was no present need of following the English lead in attempts to increase their death-dealing properties.

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Correspondence.

REPORT OF AMERICAN MEDICAL ASSOCIATION'S COMMITTEE ON DEPARTMENT OF PUBLIC HEALTH.

Milwaukee, July 5, 1898.

Mr. Editor: — Permit me to call your attention to an error that appears in the report of the American Medical Association meeting, recently held in Denver, on page 618 of your issue of June 30, 1898. The report states that I "read the report of the Special Committee on Department of Public Health." "The bill, already familiar to the profession, was referred to and its salient points outlined; the report closed with the following resolutions." Then follows a copy of resolutions, which are not correct; and after that the report states, "On motion the report was referred to the Executive Committee, with power to act."

The facts in the case are as follows: The report, together with the bill which is now pending before Congress, and which is known as the "Spooner Bill," was presented to the Association together with the following resolutions:

> *Resolved,* That the Committee on Department of Public Health be continued; that the bill as now perfected and before Congress, and which is submitted with this report, be and hereby is approved, and that the committee be authorized to use their best endeavors to have it passed by the Congress of the United States, at such time as in their judgment it seems proper and wise.
>
> *Resolved,* That the members of this Association do all in their power, by urging upon their representative members of Congress to have this bill passed.
>
> *Resolved,* That this Association appropriate the sum of one thousand dollars, or so much thereof as may be necessary for the use of the Committee, in the endeavor to have this bill passed by Congress.

On motion this report was accepted. Another motion was made and duly seconded to amend the last resolution by referring the same to the Board of Trustees, as it was necessary for all matters pertaining to appropriations to be referred to that board. This motion to amend was carried. A motion was then made to adopt the report and resolutions as amended, which was carried. Thus the Association adopted the report and resolutions with the exception of the last resolution, which was referred, for constitutional reasons, to the Board of Trustees.

I make this explanation, as in times past much has been said to the effect that the Association never adopted the recommendations of the committee. It would appear on this occasion that the Association did adopt this report, and at a very full meeting of the Association.

Very respectfully yours,
U. O. B. Wingate, M.D., *Chairman of Committee.*

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[1] British Medical Journal.

METEOROLOGICAL RECORD

For the week ending July 2d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	29.70	82	90	73	60	33	50	W.	W.	17	12	C.	C.	
M..27	30.04	72	78	68	57	61	59	N.W.	S.	6	5	O.	O.	
T...28	30.02	66	71	60	87	95	91	E.	E.	8	6	R.	O.	.02
W..29	29.96	70	79	60	93	75	94	N.W.	S.	5	7	O.	C.	.04
T...30	30.04	71	80	62	96	77	86	N.E.	S.	3	12	O.	C.	
F....1	30 03	78	90	66	66	43	54	W.	N.W.	12	4	O.	C.	
S....2	30.20	74	81	67	50	58	54	N.E.	S.W.	8	12	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 2, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York . .	3,438,899	1292	578	19.04	9.66	11.90	1.68	2.03
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	555	284	26.46	8.46	21.06	.54	1.80
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	285	164	9.10	7.35	2 80	1.05	2.80
Boston . . .	517,732	182	56	9.90	14.85	3.30	1.65	.55
Cincinnati . .	405,000	103	—	13.72	7.84	12.74	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	177	89	38.08	5.60	29 68	—	1.68
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	52	15	13.44	9.60	9 60	—	1.92
Worcester . .	105,050	29	10	3.45	6.90	—	—	3.45
Fall River . .	95,919	32	14	18.78	6.26	15.65	—	3.13
Nashville . .	87,754	33	11	6.06	3.03	3.03	—	—
Lowell . . .	87,193	35	15	22.80	11.40	29.95	—	2.85
Cambridge . .	86,812	25	8	20.00	4.00	8.00	—	—
Lynn	65,220	13	3	15.38	24.07	—	7.69	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	11	6	36.36	9.09	27.27	—	—
Somerville . .	57,977	11	4	36.36	9.09	9.09	—	—
Lawrence . .	55,510	20	5	5.00	15.00	5.00	—	—
Springfield .	54,790	19	6	10.52	15.78	5.26	—	—
Holyoke . . .	42,364	17	10	23.52	17.64	11.76	—	—
Salem	36,062	7	1	—	—	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	9	2	11.11	11.11	11.11	—	—
Chelsea . . .	32,716	8	0	25.00	25.00	—	12.50	12.50
Haverhill . .	31,406	8	3	—	12.50	—	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	6	2	—	16 66	—	—	—
Taunton . . .	27,812	11	3	—	9.09	—	—	—
Quincy . . .	22,562	5	1	—	20.00	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	4	1	—	50.00	—	—	—
Everett . . .	21,575	5	4	20.00	—	—	—	—
North Adams .	19,135	1	1	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Chicopee . .	17,368	24	14	50.00	4.16	50.00	—	—
Brookline . .	16,164	—	—	—	—	—	—	—
Medford . . .	15,832	3	3	—	—	—	—	—

Deaths reported 2,996: under five years of age 1,316; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 606, diarrheal diseases 409, consumption 291, acute lung diseases 210, diphtheria and croup 57, whooping-cough 37, typhoid fever 33, measles 26, cerebro-spinal meningitis 20, scarlet fever 18, erysipelas 6.

From typhoid fever Philadelphia 10, New York and Washington 8 each, Boston 5, Baltimore and Cincinnati 1 each. From measles New York 15, Philadelphia 5, Baltimore 4, Washington 2. From cerebro-spinal meningitis New York 7, Boston, Cambridge and Holyoke 2 each, Philadelphia, Baltimore, Washington, Lynn, Somerville, Springfield and Everett 1 each. From scarlet fever New York 16, Baltimore and Washington 1 each. From erysipelas New York 3, Philadelphia, Boston and Nashville 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending June 25th, the death-rate was 15.1. Deaths reported 3,247; acute diseases of the respiratory organs (London) 171, measles 89, whooping-cough 83, diarrhea 61, diphtheria 36, scarlet fever 21, fever 12.

The death-rates ranged from 9.6 in West Ham to 24.3 in Newcastle-on-Tyne; Birmingham 16.2, Bradford 14.1, Croydon 10.9, Gateshead 16.6, Hull 14.5, Leeds 16.1, Leicester 12.5, Liverpool 17.4, London 14.5, Manchester 19.9, Nottingham 12.1, Portsmouth 12.9, Sheffield 15.7, Sunderland 21.4, Wolverhampton 13.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 25, 1898, TO JULY 1, 1898.

Acting Assistant Surgeon **Eugene H. Hartnett**, U. S. A., ordered from this city to duty in U. S. General Hospital, Fort Monroe, Va.

Acting Assistant Surgeon **Henry S. Greenleaf**, U. S. A., ordered to report in person to the Major-General, commanding the Army, for duty.

Acting Assistant Surgeon **S. Melville Waterhouse**, U. S. A., at General Hospital, Fort Myer, Va., ordered to accompany Artillery Battalion from Washington Barracks, D. C., to San Francisco, Cal.

Acting Assistant Surgeon **Thomas A. Smith**, U. S. A., is relieved from duty on U. S. Hospital Ship "Relief," New York City, N. Y., and ordered to Fort Slocum, N. Y., for duty.

First-Lieut. Franklin M. Kemp, assistant surgeon, to San Francisco, Cal., for duty with expedition to the Philippine Islands.

Acting Assistant Surgeons **J. W. Donnelly**, **Stephen M. Long** and **D. T. Laine**, U. S. A., ordered from this city to Tampa, Fla.

Acting Assistant Surgeon **R. Fleming Jones**, U. S. A., is relieved from duty at Fort Bliss, Tex., and ordered to Tampa, Fla.

Captain Charles E. B. Flagg, assistant surgeon, ordered from Columbus Barracks, O., to duty in General Hospital at Fort McPherson, Ga.

Major W. Fitzhugh Carter, surgeon, U. S. A., ordered from Nashville, Tenn., to Tampa, Fla., for duty with 4th Army Corps.

Acting Assistant Surgeon **Edwin P. Hayward**, U. S. A., from Kansas City, Mo., to duty in Leiter General Hospital, Chickamauga, Ga.

Acting Assistant Surgeon **C. F. de Mey**, U. S. A., ordered from Louisville, Ky., to San Francisco, Cal., for duty with Philippine expedition.

RECENT DEATH.

Charles Lorenzo Knowlton, M.D., M.M.S.S., died in Northampton, July 5, 1898, aged seventy-four years.

BOOKS AND PAMPHLETS RECEIVED.

Massage Gynécologique (Méthode Thure Brandt). Par Gustave du Frumerie, Médecin-Gymnaste. Paris: G. Steinheil, Editeur. 1897.

Report of the Commissioners of Education for the Year 1896–97. Volume I, containing Part I. Washington: Government Printing Office. 1898.

Electricity in the Diagnosis and Treatment of the Diseases of the Nose, Throat and Ear. By W. Scheppegrell, A.M., M.D., Ex-Vice-President American Laryngological, Rhinological and Otological Society, etc. With 161 illustrations. New York and London: G. P. Putnam's Sons. 1898.

System of Diseases of the Eye. By American, British, Dutch, French, German and Spanish authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D., of Philadelphia, Pa. Volume III. Local Diseases, Glaucoma, Wounds and Injuries, Operations. With 50 full-page plates and 186 text illustrations. Philadelphia: J. B. Lippincott Co. 1898.

The Extra Pharmacopœia. Revised in accordance with the "British Pharmacopœia," 1898. By William Martindale, F.L.S., F.C.S., Member of the Council of the Pharmaceutical Society, and late Examiner. Serotherapy, Organotherapy, Medical References and a Therapeutic Index. By W. Wynn Westcott, M.B. Lond., H. M's Coroner for Northeast London. Ninth edition. London: H. K. Lewis. 1898.

Original Articles.

APPENDICITIS.[1]

BY MAURICE H. RICHARDSON, M.D., AND G. W. W. BREWSTER, M.D.

REMARKS BASED UPON A PERSONAL EXPERIENCE OF 750 CASES; INCLUDING 150 CONSECUTIVE CASES SUCCESSFULLY OPERATED UPON "IN THE INTERVAL."

(Concluded from No. 2, p. 28.)

In two cases a Meckel's diverticulum has been demonstrated by my colleagues after a diagnosis of appendicitis had been made by myself.

Two cases have been observed in which malignant disease appeared soon after the removal of what seemed to be an ordinarily inflamed appendix. In one there was the usual history and physical signs of acute appendicitis. Operation was performed and a large abscess in the right iliac fossa was drained. Some months later the diagnosis of peritoneal tuberculosis was made by examination of the ascitic fluid that was withdrawn. We opened the abdomen and found extensive and hopeless cancerous infiltration.

In another case at the Massachusetts General Hospital the removal of a chronically inflamed appendix was followed in a few months by an extensive cancerous infiltration of the whole ileo-cecal region.

In one instance an acute epididymitis complicating mumps led us a long journey, and in three others pneumonia proved to be the cause of an acute right-sided abdominal pain. In one of these the appendix was successfully removed by another surgeon, but showed no signs of disease.

A tumor at the ileo-cecal valve was in one case supposed to be appendicular. It proved to be an acute tuberculosis of the mesenteric glands of the meso-colon. A dissection carried thoroughly as far as the receptaculum chyli was permanently curative.

In women an acute salpingitis often simulates an acute appendicitis. In some instances the infection from the tubes has invaded the appendix. A differentiation is at times impossible.

There have been included in our list, doubtless, other cases in which the diagnosis was wrong. As a rule, however, it is safe to say that the typical history, physical signs and course of appendicitis make the diagnosis plain. Excepting the cases of referred pain, as in bronchitis and pneumonia, explorations were demanded. In many of the cases of mistaken diagnosis the lesion was hopeless; in others operation was timely and successful, especially in cases of cholecystitis. In the acute obstructions the same heavy mortality followed as in most similar cases.

However imperfectly surgery has been able thus far to repair the damage, more or less irreparable, caused by acute inflammations of the vermiform appendix, the removal of this useless organ in the period of health has proved one of the most brilliant and successful operations of modern surgery.

In the early days of this operation, before its almost perfect safety had been demonstrated, — in this city by Porter, Cabot, and others, — one of the writers was inclined to oppose what seemed to be, in many cases at least, an unnecessary and unjustifiable operation. On June 14, 1893, we were called suddenly to see an intimate friend and colleague who had had three years before a violent attack of peritonitis, supposed to be of appendicular origin. In the interval he had been advised to submit to operation; we found him dying; he lived but an hour. At the autopsy a general peritonitis was found, proceeding from a gangrenous and perforated appendix. This was an object-lesson which had a marked effect. In August we performed our first deliberate appendectomy upon a young man in perfect health who had had various previous attacks of moderate severity. From that time to the present the efficacy and safety of the operation have been repeatedly demonstrated, until the procedure seems warrantable not only in the cases of repeated attacks of undoubted appendicitic origin, but even in cases in which a lesion of the appendix is only suspected; not only in these, but in all cases in which there has been only one severe attack.

The statistics of the early operations as collected by Bull showed a mortality of two per cent. It seemed then probable that, counting the unpublished cases of death, the mortality would be increased. On the contrary, in the hands of the most experienced operators, the death-rate is less than two per cent. We have operated one hundred and fifty-one times since August, 1894 without a single death.

We approach the operation with confidence, instead of with dread. Though there is in all abdominal operations an element of uncertainty, in this that uncertainty seems almost infinitely small.

Before considering those symptoms which indicate a chronic appendicitis — symptoms which constitute danger signals demanding a careful lookout and an intelligent appreciation — it seems well to discuss for a moment the anatomical and pathological peculiarities of the appendix.

First in importance is that variety of acute lesion which results in a sudden and extensive local gangrene. This is of embolic or thrombotic origin, and may without warning involve the appendix and the meso-appendix. It is undoubtedly induced by variations from the normal which invite a local infection. These variations may be owing to ulceration of the mucous membrane from foreign bodies, neoplasms, fecal concretions or tuberculosis. The infective processes may be caused by extension of inflammation from the cecum; by abnormal positions of the appendix, and by variations in size or in shape. They may result from strictures in the lumen, obstructions at various points from other causes, with consequent appendicular colic and distention with septic fluids.[2]

These abnormal conditions may induce a mild local infection with transitory pain, persistent or remittent; they may without warning result in total gangrene with a local or a general infection.

The chief question is whether these lesions produce, as a rule, premonitory symptoms. We believe that they do. Serious lesions may have been preceded by similar serious attacks, or they may have been preceded by mild attacks, by premonitory grumblings which ought to have been observed and recurrence provided against. In many cases an attack severe enough to produce the gravest danger has presented a history of occasional transitory pain described as indigestion, bilious attack, stomach-ache and the like. In many cases such a history of trivial pains and indigestion has been proved clinically and anatomically to be dependent upon the appendix. In many the appendix has been shown to be constricted, and to be filled with imprisoned septic fluid. Such cases undoubtedly cause appendicular colics, and may result in gangrene; for anything that interferes with the circulation of the appendix, anything that irritates its mucous membrane, may open the door for bacterial invasion. Once having entered, the bacterial process may go on to the most effectual gangrenous disorganization.

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[1] Read before the Boston Society for Medical Improvement, February 21, 1898.

[2] Since reading this paper we have seen for the first time a complete gangrene of the meso-appendix without gangrene of the appendix. The patient was a girl of fifteen, seen March 21, 1898, at Winchester with Dr. Mead. She had had within the year two attacks of colic, with faintness, nausea and purging. The attack during which we saw her began Saturday, four days before our visit, with faintness and abdominal pain. The patient rapidly grew better, however. There was no constitutional disturbance; the bowels were free. The attack was supposed to be like the previous ones. At five o'clock Wednesday she was seized with severe pain and nausea. The abdomen became rigid; temperature 101°; pulse 128; no dulness; no tumor. The abdomen was opened at ten P. M. The appendix was enlarged, injected, unperforated. The meso-appendix was dark green gangrenous and offensive. The interior of the appendix was gangrenous. The patient made a good recovery.

The severity of the attack is often out of proportion to the seriousness of the pathological lesion found. In some instances the appendix and its surroundings show most extensive changes when the previous history has been quite trivial. In other cases the clearest histories are followed by little anatomical change in the appendix. At times only a change in position is noticed; at others a slight constriction in lumen. That an appendix apparently normal may be the seat of a serious infection is shown by a case operated upon in the period of quiescence. In this case the patient, a young girl, had one of her usual attacks at three A. M. The operation was performed five hours later. The appendix was found to be covered with a recent greenish exudation, after the removal of which the appearances were precisely like those of an appendix which had been removed the day before and which had been pronounced to be normal. Though it be admitted that many appendices removed in the interval are apparently normal, this hasty conclusion can hardly be explained by the almost invariable disappearance of the previous symptoms.

One of the most important considerations in connection with the indications for appendectomy in the interval is the nature of the previous attacks. The preliminary attacks are in many instances so frequent and transitory, that even the most radical operator would not, we think, advise interference. In many the attacks of pain are accompanied by symptoms of indigestion. Indeed, indigestion is given as the premonitory symptom of many of the attacks, even of the severest forms. That indigestions have some bearing upon inflammations of the appendix is, we think, proved, first, by the disappearance of digestive symptoms after removal of the appendix, and, secondly, by the occurrence of undoubted attacks of gangrenous appendicitis following indiscretions in diet and acute indigestion. In support of the latter statement we would mention two recent examples. The first was a simultaneous attack of pain in the two children of a family. Both had taken something which disagreed with them, and both had attacks of acute abdominal pain, with vomiting. In one the attack rapidly subsided — the attack of indigestion, cholera morbus, "biliousness" or whatever it may be called; in the other there was a gangrenous and perforated appendix which jeopardized the patient's life, but which was successfully removed. Another still more striking instance was in a family in which three of the boys were suddenly seized with abdominal pain and vomiting. There was only one thing of which they had all eaten. All three boys had attacks of acute indigestion, accompanied by severe cramps and vomiting. Two of the boys immediately recovered. The third, the oldest boy, had severe pain, persistent vomiting, right iliac tenderness and rise of temperature. It seemed very improbable that one case should be unlike the other two — all having had apparently the same cause and the same initial symptoms. Influenced by this belief, we performed no operation during the acute stage. As the symptoms subsided, it became more and more evident that this boy had had an attack of appendicitis. We removed the appendix some two weeks after the temperature had become normal, and found signs of recent inflammation and of long-continued old inflammation; in fact, the appendix must have been for years a menace to the boy's life.

In many cases the premonitory symptoms are dependent, probably, upon a stricture in the canal of the appendix, and are owing to a spasm of the appendicular muscles. As demonstrated by Abbe's method of alcoholic injection there may be in these cases, one or more strictures in the lumen. The symptoms in this class of cases are severe but transitory pains in the region of the appendix. In some instances the restrained fluids cause sufficient distention to make palpation of the appendix possible. In this class repeated attacks of colic, unaccompanied by constitutional or other symptoms except possibly vomiting, are most important symptoms. In such cases, after one or more attacks of colic, the patient may develop the severer type — that accompanied by local infection, gangrene and perforation.

In a large percentage of the cases the premonitory attack is a definite, unmistakable appendicitis with a localized and more or less extensive peritonitis, accompanied by tumor. In considering the significance of an early attack in cases of this kind, and in deciding upon the best time for interference, we must bear in mind that these cases of localized peritonitis show unmistakable signs of their recent origin and that the exudate may be actively septic.

It may be said with reference to the symptoms of the early attacks that in all in which there is no physical evidence of localized peritonitis the diagnosis may be in doubt. The cause and nature of the symptoms must therefore be scrutinized with the greatest care to avoid unnecessary operation. In some cases the right-sided pain may be owing to a spasm of the colon, dependent upon some functional or organic disease of that viscus; in other instances it may be owing to a renal stone; in still others, to neurasthenia. The frequency of right-sided abdominal pain in neurasthenic women must be admitted, and the value of the symptom in patients of this class must be carefully weighed.

But whatever the difficulties of diagnosis, however grave the dangers of a secondary attack, it must be borne in mind that removal of the appendix, even after symptoms which in themselves seem trivial, is not depriving the patient of a useful organ. Arguments against frequent resort to mutilating operations, like normal ovariotomy in cases of persistent ovarian pain, or in cases of the imaginary pain of neurasthenia — arguments against an operation which deprives the patient of a useful organ — do not apply to the removal of the appendix for similar and trivial reasons; for in removing the appendix we are taking away an organ which in a very considerable proportion of the population is a menace to health and even to life. Patients convalescing from the operation have a feeling of thankfulness that the appendix is removed, even if the pain for which the operation was performed still persists; they know at least that the pain is not appendicitis, and that they run no risk from that widely-dreaded disease.

Years of immunity after one attack of appendicitis, give no security against a second. In several of the worst cases we have seen in adults, the first attack occurred in childhood.

The chief point in connection with the premonitory signs is to recognize the significance of slight symptoms. In definite cases with localized tumor, or other signs which point unmistakably toward a chronic appendicitis, the advisability of interference is unquestionable. In uncertain cases, however, it is at times extremely difficult to weigh properly the evidence pointing toward a chronic lesion. When there is doubt, it seems best to give the patient the benefit of that doubt and to operate.

In the 150 interval cases there has been a great variety of pathological conditions, and a wide range in the symptoms by which the operation was justified. The symptoms varied, too, with the lesion upon which they were dependent. The difficulties of operation depended largely upon the type of inflammation. In all cases in which the disease was confined to the appendix, and in all cases in which the symptoms were dependent upon a faulty position and shape, the operation was comparatively easy; in cases in which there had been a localized peritonitis, or in which the disease had been of many years' standing, it was extremely difficult. In some cases of long standing the appendix was found so buried in a mass of fibrous adhesions that it was impossible to tell where the bowel ended and the appendix began. Once or twice the inner layers were separated from the outer, a mucous tube being extracted from a fibrous cylinder, not unlike the unsheathing of a sword.

In some cases the operation was difficult from the remote situation and firm adhesions of the appendix; in others the appendix was withdrawn from the wound with the greatest ease. In no case did we fail to find the appendix and remove it. In all chronic cases except the earliest, McBurney's incision was used whenever possible. A non-adherent, deliverable appendix requires a very short cut in a thin-walled abdomen; an adherent appendix a longer one. We have been seldom obliged to abandon the McBurney cut. This method seems to us on the whole the best. In several instances the appendix or its surroundings have had a suspicious look; there have been yellowish masses, or a grumous fluid, or distinct pus. In these cases we have invariably drained for forty-eight hours. The rapidity and thoroughness of the convalescence have not been interfered with. Several of the few cases which have been fatal in the hands of others have been sewed up without drainage. There need be but a single wick going down to the suspicious area. This is removed in forty-eight hours and the wound closed with a stitch left in provisionally at the time of operation. The appendix and its mesentery are tied off with silk, great care being taken to provide against hemorrhage. The actual cautery is used to separate the appendix. Its stump is burned close to the ligature, and the whole depressed into the cecal wall. and buried there beneath four or five fine silk sutures. The wound is closed by one or more silkworm-gut sutures.

Convalescence requires two weeks, the patient going home on the fourteenth day. In the list of chronic cases many unusual and interesting ones are included, but our limited time does not permit even a passing allusion to them. With but one or two exceptions the symptoms have disappeared after operation. It is interesting to note that there have been, long after appendectomy, two attacks of what would be confidently diagnosticated as appendicitis. In one case there was only pain; in the other pain, tumor and fever; the latter was an acute case. The results, with these few exceptions, have been so gratifying that but one opinion can be entertained as to the value of the operation. From a feeling of strong doubt as to the advisability of the operation in the interval, we have been led to one of confident enthusiasm; from one of extreme conservatism to one of marked radicalism.

With reference to the treatment of acute appendicitis, on the other hand, we feel more inclined to conservatism than formerly, provided only that we can see the case in the first hours of the attack with the opportunity of careful observation. When we see a case in which we are in doubt about interference, we are often influenced by the patient's distance from surgical aid. One may safely watch for the most favorable moment in a case in a hospital when he would not delay if the case were in a remote town. The safest plan, on the whole, is to consider each case as it stands, operating in some, delaying in others, the question of operation and delay to be decided only by those experienced in the disease. The safety and efficacy of the interval operation make it desirable whenever possible to bring the patient through his acute attack without operation. Severe cases, however, should not be allowed to run in the false hope that an operation can be avoided.

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SOME MODERN METHODS OF THE TREATMENT OF PHTHISIS, AND ITS SYMPTOMS.[1]

BY EDWARD O. OTIS, M.D., BOSTON.

(Concluded from No. 2, p. 34.)

Under general medication I shall speak only of creosote, the alkaline hypophosphites, strychnia, arsenic, and iodoform.

Creosote, known in the days of Louis, and of late years popularized by Sommerbrodt, is perhaps as extensively used at the present time as cod-liver oil. No drug could have retained its hold so long without possessing intrinsic value. Opinions differ as to its action; the extremists hold that it has a specific effect upon the disease and its bacillus; the conservatives, on the other hand, believe its value consists simply in improving nutrition and thereby increasing the resisting power of the individual. "It has the power," says Whittiker, "of destroying the lower organisms, especially those of fermentation, hence the undeniable virtue of creosote is chiefly nutritional." All who have used it to any extent in phthisis can bear witness to the fact that the cough and expectoration are lessened, the weight increased, and the appetite, digestion, and general condition improved. It is contraindicated in gastric or intestinal catarrh, fever and hemoptysis, and where it appears to injure rather than to improve digestion. The dose varies with different practitioners, and whether they hold one or the other theory regarding its action. Those who believe in some specific action give large doses, sometimes as much as a drachm, three times a day. I begin with one or two minims and gradually increase to ten, not as a rule going beyond that. I use the plain beechwood creosote, giving it in milk, cod-liver oil, malt or wine, or with gentian or other aromatics, and continue its use for months. Guiacol, a derivative of creosote, has essentially the same action as the latter; it has nothing to recommend it above creosote except its less objectionable taste, and its being somewhat less irritating to the gastric mucous membrane. Carbonate of creosote (creosotal) has lately come into extensive use and is said to be the most eligible preparation of the drug, being free from its nauseous odor and burning taste and less likely to cause gastro-intestinal disturbance. Seifert[4] gives the following method of using it in Leyden's wards in Berlin. Beginning with a dose of five drops, increasing three drops daily, a maximum of 25 is reached and continued from one to four weeks, or even longer. The dose is then diminished in a similar ratio to 10 drops and then eventually the ascending scale is begun again. Used in this way it is said to be cheaper than creosote. Whichever one of these creosote preparations is used, it should not be used blindly, and when digestive disturbances are excited, or no symptomatic or general improvement is apparent, it should be discontinued.

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[1] Read before the Massachusetts Medical Society, June 8, 1898, and recommended for publication by the Society.

The alkaline hypophosphites, in this country and England at least, are very extensively employed in phthisis, particularly in its earlier stages and with the young. There is no evidence that they exercise any specific influence upon the disease, but their chief effect seems to be in improving appetite and nutrition and allaying nervous excitability. They also influence favorably night-sweats. Daremberg[5] says that there is a great loss of phosphates from the bodies of phthisical persons in the sputum and urine, and further, that the calcareous masses found in the lungs are chiefly phosphates and carbonates of lime and magnesia; hence he thinks that the hypophosphites are of value in aiding the formation of fibrous tissue which contains much phosphates and carbonates, and in producing calcification of tubercle by furnishing to the organism one of its constituent elements. Hodgkinson[6] is also of this opinion, especially when the disease is local and quiescent, and thinks the efficacy of the hypophosphites is enhanced by using them in conjunction with cod-liver oil. Whether anything of this kind actually happens seems to me doubtful; probably the chief, if not the only value of the hypophosphites is in promoting nutrition. In pyrexia they are contraindicated.

Strychnia I have used extensively, and it has seemed to me to be of more than ordinary value, not only as a tonic to the digestive system, but for its general effect upon the heart and respiration. Mays[7] considers this drug next in importance to physical rest and nutritious food and gives it in heroic doses, from one-thirty-second to one-seventh of a grain at a dose; he refers to one patient who took one-sixth of a grain four times a day uninterruptedly for two months. Dr. C. J. B. Williams,[8] late of Brompton Hospital, says that strychnia may be regarded as a specific against the retching of phthisis, and he gives it in doses of from one-thirty-second to one-twenty-fourth of a grain. By the use of this drug, he says, patients have been able to persevere with cod-liver oil for months and even for years without digestive derangements.

Arsenic only has value in this disease as a useful tonic in aiding nutrition and stimulating assimilation. There is no evidence for regarding it as some observers have done, as an anti-bacillary medicine. The French physicians are unanimous in ascribing to it exalted value. "It would be difficult," says Jaccoud,[9] "to find an agent more capable of resisting the consumptive tendency which exists in every form of the disease." Its value, Jaccoud says, depends upon its power of combating malnutrition always existent in the disease. C. J. B. Williams considers arsenic the most useful tonic next to strychnia, checking slight pyrexia and night-sweats and improving the respiratory powers. It is best administered after food.

There is but one other drug I shall refer to under the head of general medication, the extensive use of which would seem to warrant its mention; it is iodoform, either used as such, or in the form of its substitute, europhen. So far as evidence has accumulated regarding it, its chief effects appear to be an improvement of the appetite, increase in weight, and a diminution of the cough. Ransome, who is careful in his statements, says he believes it is one of the best of the medicines that can be given for the purpose of assisting nutrition and alleviating cough. Flick applies europhen by inunctions, using the following formula:

℞	Europhen	ʒ i.
	Oil of Rose	gtt i.
	Oil of Anise	ʒ i.
	Olive Oil	℥ iiss. M.

Rub about a tablespoonful thoroughly into the inside of the thighs and into the arm-pits before retiring at night. If the odor is objectionable the patient can be sponged with bay rum in the morning.

When one considers the limitations of the few remedies above enumerated, the best of the thousands which, at one time or another, have been suggested and used in the treatment of phthisis, he must attest the truth of Lænnec's conclusion "that although the cure of tuberculous phthisis is possible for nature, it is not so for medicine."

I have purposely refrained from referring to the therapeutic use of tuberculin and its derivatives, both because the subject has recently been presented to this Society,[10] and also because in this paper I desire to present such methods as are more easily and universally applicable and have been longer tested. Although I am hopeful as to the future possibilities of tuberculin, I do not believe its uses and limitations have been as yet sufficiently determined to warrant dogmatic statements. In passing I will say that my experience with tuberculin for diagnostic purposes has satisfied me that it is a most valuable test, and, when used in proper doses, without injury to the patient.

Under symptomatic medication I shall refer to the fever, sweating, cough, hemoptysis, digestive disturbances, and vomiting.

Fever may exist at any stage of the disease, either when the infection, so far as we can tell, is a pure tubercular one, or when the mixed infection has taken place and the fever is that of sepsis. It has been maintained that a pure tubercular infection is afebrile, but the evidence does not seem to corroborate this view, for we have fever when neither the streptococcus, staphylococcus or other micro-organisms other than the tubercle bacillus are found. This symptom is of extreme importance both as regards the prognosis and treatment, for so long as fever exists we know that the disease is active and improvement as a rule cannot take place. In this disease, as in most others accompanied with fever, one must bear in mind that fever is one of the results of the general disease and not a disease itself, and consequently our efforts must be directed to the disease and not primarily to the fever. In the majority of cases the fever which we meet with is of the septic or hectic kind of a remittent or intermittent type, reaching its highest point in the latter part of the day and its remission or intermission in the morning, although this curve may be reversed. It is generally accompanied at one time or another in its course by night-sweats and chills. The effect is the same as in other septic fevers, a loss of weight and strength, impairment or loss of appetite and various nervous phenomena.

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[4] Lancet, April 2, 1898.

[5] Ransome: The Treatment of Phthisis, 1898, p. 153.

[6] Ransome, loc. cit.

[7] The Strychnine Treatment of Pulmonary Consumption, 1894. Reprint.

[8] Williams: Pulmonary Consumption, 1897, p. 391.

[9] Curability and Treatment of Pulmonary Phthisis, p. 141.

[10] Vide Dr. Worcester's paper before this Society, 1896.

The treatment, as I have said, is one directed to the general condition, hygienic rather than medicinal. Rest of body and mind in a pure, dust-free air, and good and easily digested nourishment. By this means, Schröder, of Hohenhonnef, says he has succeeded in reducing the temperature to normal in a large number of cases, and in putting the patients into the category of those who endure their tubercular infection without rise of temperature. Rest should be the absolute rule for fever patients, as I have already observed. Of course there are individual exceptions, for individualization must always be made in this disease. Where a long confinement is evidently doing more harm than the fever, the appetite and digestion are failing, and the courage waning, it may be the least of two evils to allow the patient to move about a little, especially when for a certain portion of the day the temperature is nearly normal.

The food in phthisical fever should be abundant and rich in fat and carbo-hydrates. It should be carefully and delicately prepared, and given in small quantities and frequently. If the appetite and digestion fail a liquid diet may have to be resorted to, composed largely of milk, either plain or in the form of koumiss, kefir or peptonized. As I have said above alcohol is indicated, a glass of strong wine or a teaspoonful of brandy in milk several times a day, especially when a chill is apprehended. Sponging with cool water or mixed with alcohol or vinegar night and morning; cold water compresses applied to the chest; an ice bag over the cardiac region if the heart is rapid, are some of the hydropathic measures of service. Antipyretics are only to be resorted to, in my opinion, when the other means fail and the fever causes annoying symptoms, such as disturbance of sleep and the like. At the best they only exercise a very transitory influence, with more or less resulting depression. When used the choice may be either antifebrin, phenacetine, antipyrin or lactophenin. If the heart is weak, caffein or strychnia can accompany them. "Nothing in my practice," says Ransome, "has done so much to relieve the patients (of fever) as fresh air, and sponging with cold vinegar and water. Fresh air night and day before everything else."

A symptom intimately connected with, and so frequently dependent upon, fever is *night-sweats*. We may, however, have excessive night-sweats when the fever is very slight, as in early stages of the disease, or later on when it is of a mild type. In either case the ultimate cause is some disturbance of the central nervous system, probably toxemic, acting either through the sweat centres or those of the vaso-motor system. When the sweating is an incident of the fever the treatment of the latter is the treatment of the former. and when one subsides the other will. When, however, the sweating is out of proportion to the fever, or it becomes an annoying and depressing symptom, especial treatment is indicated. Here again hygienic-dietetic measures are of most value. A good meal in the evening, and a glass of milk with two or three teaspoonfuls of brandy the last thing at night, repeated, if necessary, during the night, or if not this, some simple food; dry or moist rubbing with acidulated water at night, and compresses to the chest, all the while the patient being allowed an abundance of fresh air. If these means fail, drugs are the last resort. Strychnia is indirectly valuable as a tonic to the depressed nervous system. Of the specific antihydrotics, we have several, and I know of no means, except by trial, of determining which will succeed in any case. One after another has to be tried until the successful one is found. The most generally successful I have found to be camphoric acid, 30 grains; picrotoxin one one-hundredth to one-fiftieth grain; agaricin one-twelfth grain; and atropia one-sixtieth grain; the order indicating their value. Agaricin should be given six or eight hours before the usual time of the commencement of the sweating, camphoric acid an hour or two before, and atropia or picrotoxin at bedtime. The patient should be well covered in bed with woollen blankets and sleep with open windows.

Of all the symptoms of phthisis, *cough* is the most constant and evident one. "If I can only get rid of the cough; give me something for the cough," is the oft-repeated and pathetic appeal of the poor consumptive. In the first place, the patient must be made to understand that cough to a certain extent is necessary, and is to be promoted and favored. Beyond this necessary and conservative amount, however, there is the unnecessary, which exhausts the strength, interferes with nutrition and disturbs sleep.

By our management of the cough, two things are to be accomplished: to reduce to a minimum the amount necessary for the expectoration, and to stop the irritable unnecessary coughing. In the cough of expectoration one can learn to accomplish the results with the least expenditure of strength. The tendency to cough can be restrained until the expulsion of the secretion is easy or almost comes of itself. Exercise in the open air is said to facilitate this, when exercise is allowable, as well as pulmonary gymnastics. In the spasmodic cough unaccompanied by much if any expectoration, besides the control which the patient by training can exercise, various simple means will further aid, such as counter-irritation, a sip of water or milk, warm milk with salt, seltzer or apollinaris water, pastiles of Iceland moss or gelatine, gum arabic, a wet compress over the chest. The degree to which cough can be controlled by the training is admirably illustrated in the German sanatoria, where one sees a hundred or more phthisical patients together at dinner and hardly hears more coughing than would occur in an assembly of an equal number of well people. The coughing which occurs directly after eating, rest in the recumbent position will sometimes obviate. The common morning attack of coughing, one of expectoration, often so prolonged and severe, can frequently be modified in intensity and duration by taking on awakening a glass of warm milk with a little soda or salt, or an alkaline drink, such as vichy, seltzer or soda, with a teaspoonful or two of brandy or rum in it.

Of medication, the one drug which I have found more serviceable than all others is codeia, and indeed I rarely use any other. I am accustomed to use it in the form of a one-per-cent. solution. It does not disturb the appetite or digestion, or cause constipation as the other preparations of opium are likely to do; a couple of teaspoonfuls of this solution will generally give a good night's rest. "Again I would insist," says Ransome, "that fresh air and plenty of it is the best remedy for cough, especially when this is at all spasmodic in its character. Over and over again I have noticed the cough cease entirely as long as the patient was in the open air, and come on again on the return within doors."

Hemoptysis occurs in about 50 per cent. of all cases of phthisis, and may happen and prove fatal at any stage of the disease. Jacobi speaks of having seen a fatal case in a patient who had never presented any symptoms, or been suspected of having any tubercular disease. Vascular tension and degeneration of the walls of the vessels are the two causative conditions, and it is evident that in treatment we can only expect to directly influence the former. There is a diversity of opinion as to how this can best be accomplished, and consequently a diversity of treatment. There are certain general rules, however, which are applicable to all cases. First, the patient must be maintained in a complete state of rest both mental and physical; and this alone in many cases will suffice. Secondly, and as more thoroughly accomplishing the first, is the use of opium in some form, preferably morphia subcutaneously; by it the nervous excitement is controlled and the cough restrained. The general usage is to give the nourishment cold, as iced milk and the like. While not considering this necessary, it should be simple and unstimulating, and perhaps best in the liquid form. The value of external applications seems to me doubtful. The ice bag on the chest or over the cardiac region is the most common one, but its efficacy is questionable and it may do harm. Counter-irritation in the form of mild mustard plasters to the back and sides of the chest, or dry cupping, seems more reasonable. Experience in the use of drugs varies greatly, probably because they have been used empirically rather than with a regard to the underlying pathological conditions.

In most cases of bronchial hemorrhage what we desire to accomplish and all we can indeed accomplish is a lowered pulmonic vascular tension, and this we can effect by a general depression of the blood pressure as well as a reduction of the amount in the lungs. The means that serve for this purpose are: atropia, ipecac, saline laxatives, salt, and the application of constricting bandages to the extremities. In a case of moderate severity, where the pulse is of fair strength, I would outline the treatment as follows:

Complete rest, opium, salt dry on the tongue, a saline cathartic and aconite, or some other general vascular sedative according to the tension. If ipecac is used it should be given in sufficient amounts to maintain nausea. When the hemorrhage is profuse, besides rest, opium and salt, ligature of the extremities and from one-fiftieth to one-twenty-fifth grains of atropia subcutaneously are indicated. The atropia causes vaso-motor paresis, thereby diverting the blood to the periphery. When the obstruction in the lungs and the coagula in the upper air-passages produce dyspnea and cyanosis, threatening suffocation, attempts should be made to dislodge the clots from the larnyx, and champagne, ammonia, or other stimulants are indicated. If the hemorrhage appears to be passive from cardiac weakness, digitalis and alcohol may be used. In the sudden and excessive bleeding in the latter stages of the disease, from the rupture of an aneurismal sac, nothing avails, and I have had a patient die almost before the nurse could cross the ward. I am doubtful if the astringents are of any great value, although they are perhaps oftener used than any other class of remedies, especially ergot. Those which appear to be the best for this purpose, if any are used, are turpentine in five-minim capsules every four to six hours; oil of erigeron from five to 20 drops or more, and the fluid extract of hydrastis canadensis, from 20 to 30 drops.

Chronic Dyspepsia is a common and annoying condition in this disease, represented by a variety of symptoms: failure of appetite, vomiting, heartburn, a fulness after eating, and other unpleasant sensations dependent upon digestive disturbances. The most important part of the treatment is the regulation of the diet, together with the open-air life. Milk, either as such or in the form of kefir or koumiss, is always available and useful. Frequent feedings of small amounts of easily digestible food are indicated, broths, bouillon, eggs, chicken, meat extracts, fish, sweetbreads, oysters, preferably raw, various kinds of farinaceous food. Sometimes an almost exclusive diet of beef is best borne. Perhaps the food can be better taken cold than warm.

If there is a tendency to diarrhea, two or three teaspoonfuls of brandy in milk and lime-water may be given, or if, on the other hand, constipation exists, some alkaline mineral water can be used to dilute the milk. If the digestive ferments are deficient in quantity or quality, peptonized foods are of service, together with nux vomica or some of the bitter tinctures and hydrochloric acid. When a catarrhal state of the stomach is present, indicated by a red tongue, pain after food, flatulence and perhaps nausea and vomiting — so frequent a condition in the latter stages of the disease — a little opium with bismuth, perfect rest after eating, moist compresses over the gastric region are some of the remedies. If creosote is being taken it should be omitted. If there is fermentation, some of the intestinal antiseptics, guiacol, creosote, bismuth, charcoal and the like may obviate this symptom.

Vomiting is a symptom which demands our most careful attention, for it attacks nutrition at its source, and as Darenberg says, "the stomach is the stronghold of the consumptive, and alimentation the principal means of defence." It occurs most frequently at the initial and terminal stages of the disease. It may be caused (*a*) by the cough directly, much as in whooping cough; (*b*) by reflex cough; (*c*) by abnormal gastric conditions, catarrhal and dyspeptic. When the cough is the direct cause, as when the patient arises from bed in the morning and has a paroxysm of coughing accompanied by retching and vomiting, the treatment of the cough is in a measure the treatment of the vomiting. But we cannot wholly prevent the cough, nor would it be wise to do so, for it is often one of expectoration. In a large number of these cases it has been found that pharyngeal hyperesthesia[11] exists, and the irritation of this sensitive area in the throat either by the cough or expectoration excites a momentary reflex nausea terminating in vomiting. If then we suppress this hyperesthesia we stop the vomiting, and this can be accomplished in the majority of cases by applying to the pharynx a solution of cocaine by spray or brush.

Food passing over the hyperesthetic throat may also produce the same phenomena, namely, cough and vomiting; and here the application of the cocaine should be make just before eating. Vomiting from reflex cough, occurring during or soon after taking a meal, is attributed either to the presence of food in the stomach through irritation of the gastric terminals of the pneumogastric, or to an increased secretion in the air-passages caused by the stimulus of the circulation produced by the food, or, as Berthier thinks, from the same cause as the former kind, pharyngeal hyperesthesia. At all events, the throat should always be examined in these cases and treated if the condition exists. If the first cause appears to be the dominant one, primarily very careful attention must be given to the feeding. The food must be taken in small quantities, sometimes limited to liquids, sometimes to solids, and slowly and thoroughly masticated. Gastric sedatives are also indicated: a few drops of laudanum in water, codeia, bismuth with three or four drops of diluted hydrocyanic acid, tincture of iodine from one to ten minims, chloroform water shortly before meals or strychnia an hour before, and after eating a few drops of hydrochloric acid in water. Oxalate of cerium, the bromides, or creosote may also be tried, if other means fail. A glass of warm water at the beginning of the meal, or a little brandy or whiskey diluted with some mineral water during the early part of the meal may also be of service.

When the exciting cause seems to be the increased secretion in the air-passages from stimulus of the food, free expectoration is to be promoted and the air-passages cleared before the taking of food. This may be accomplished by a warm stimulating drink half an hour before the meal, a cup of hot milk with some alkaline water and a teaspoonful or two of brandy or whiskey, or beef tea or broth with a teaspoonful of brandy. The meal is then to be a dry one and a little pepsin and hydrochloric acid taken after it. If, in spite of treatment, vomiting ensues it is advisible to try a little food immediately after. If the vomiting is caused by definite gastric symptoms, these should have their appropriate treatment, as indicated under the head of digestive disturbances. When the vomiting persists in spite of all treatment and a fatal issue seems imminent, or the patient is becoming rapidly emaciated and enfeebled, the last resource is opium freely used.

In the treatment of phthisis the physician must gird himself for a long, hard, persistent struggle and be prepared for many a reverse, but success comes frequently enough to inspire him with courage and hope. To have snatched a single life from the grasp of this relentless monster is a source of infinite satisfaction.

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[11] Berthier: Renne de la Tuberculose, 1898, p. 1.

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SOME PRACTICAL ASPECTS OF THE "SUMMER DIARRHEAS."

BY JOHN W. BARTOL, M.D., BOSTON,
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The cases admitted to the Summer Hospital at Rainsford Island may be said to typify very well the general run of the so-called *summer complaint* in its common varieties, and the return of the heated term is my excuse for publishing brief notes on a few of these cases, simply as a reminder of the more important factors in causation, and of the necessity of regarding every case as serious in its possibilities, until convalescence is thoroughly established. The varieties above referred to are, in fact, more of degree than of kind; but a sharp line of distinction can be drawn between the simple, non-infective forms on the one hand, and the toxic fermental type on the other; and further fairly sharp divisions may be made within these lines for the purpose of description, so that we may classify under the head of simple diarrheas such varieties as the following:

(1) Diarrheas of nervous origin; that is, those caused by an exaggerated peristalsis excited by such various conditions as fright, exposure to changing atmospheric conditions, fatigue, or reflex irritations of dentition.

(2) Those caused by the purely mechanical irritation of undigested food, which either from its nature is positively indigestible, or remains undigested owing to lowered functional activity.

(3) The important class which, for want of a better name and possibly also on account of imperfect investigations, must for the present be included under the general descriptive term of *acute intestinal indigestions.* This division has been restricted by the official classification of the American Pediatric Society chiefly to the indigestions of duodenal type; but it seems reasonable to include in it, for the time being at least, or until more careful study places them elsewhere, those cases of acute type characterized by copious and frequent stools containing large amounts of undigested food but not containing fermental bacteria nor presenting the clinical appearances of the so-called mycotic diarrheas.

These are the three important varieties included in the simple or non-infective class; the leading characteristics of which from a pathological point of view are, that they are not associated with bacteria other than the ordinary intestinal occupants, and are not accompanied by any lesions of the mucous membrane. As we turn from these simple forms to consider for a moment the second or infective class, it is well to emphasize in our minds the fact that in all cases of this latter class we find the fermental or putrefactive micro-organisms, and associated with their presence, in all cases, lesions of the mucous membrane, varying from the slightest involvement of the superficial epithelium to the ulcerative processes of the more serious inflammations.

Once started, however, an intestinal disorder of the simplest variety, that is, non-infective, may at once become infected, and, passing quickly through the various steps, rapidly take on serious aspects and terminate fatally.

The second or infective class may be roughly divided into two categories: the first including the ordinary fermental diarrheas without serious lesions of mucous membrane; and the second *those* attended by deeper inflammations and ulceration. It is the first of these that includes an overwhelming majority of all cases of summer diarrhea. This is the type so familiar to all, masquerading under the various names of summer complaint, gastro-enteritis, cholera infantum, acute milk infection, and mycotic or fermental diarrhea. In the light of modern knowledge it is certainly best to use one of the last two names as indicating the etiological factors, and it is further very desirable that the use of *cholera infantum* should be closely restricted as a descriptive term simply applied to such cases as are attended by *excessive* purging and vomiting. That such cases are rare, in spite of mothers' estimates of 20 to 30 dejections daily, it seems fair to assume from the fact that among 218 consecutive patients admitted to the Summer Hospital at Rainsford Island there was not a single case that could be said to approach the choleriform type. On the other hand, the fact should never be lost sight of that it is by no means the number or obvious character of the dejections that should serve as the only or even the chief factor in establishing the prognosis; on the contrary, in a great majority of cases it is the degree of toxemia that determines the course of the disease, and on the theory of elimination of toxins with the dejections we may have the amazing paradox of a diarrhea alarming because of the *infrequency* of the stools.

The toxic elements are *usually* produced within the intestine by some of the ordinary forms of saprophytic bacteria (the familiar hay bacillus, for instance, being prominent among them) which are taken in with the food; but the fact should not be lost sight of that the active poisons may be elaborated in the food before ingestion and that no sterilization (much less Pasteurization) will effect the ptomaine products thus formed — an emphatic reminder of the importance of thorough investigation of source and previous care of milk, as well as of the methods of its preparation.

The diarrheal diseases are all much commoner in hot weather, it having been shown by Seibert that a minimum temperature of 61° F. prolonged for several days marks the beginning of the summer epidemics; but it is, of course, especially the fermental form that comes into prominence at this time, and it is to this type that we owe the enormous increase in mortality rate. Now, since the mildest case of simple diarrhea may suddenly or by slow gradations assume the character of the severest infective forms, it is not necessary to reiterate the importance of watchfulness and the institution of active measures for alarming symptoms as soon as they occur. What marks, then, the change from mild to serious, or how shall we decide on first acquaintance with a case as to its probable seriousness?

The most natural answer to this question would seem to be a reference to character and frequency of stools; that green dejections, for instance, mean fermentation, and that a total of ten stools in twenty-four hours, for example, is hardly a serious diarrhea. In regard to the first proposition, however, it should be remembered that often in mild forms of indigestion the stools when passed, or soon after, are colored green by biliverdine; furthermore that, apart from the impracticable bacteriological test, there is no absolutely characteristic sign of the presence of fermental bacteria. In regard to the second, attention is called to the report of the fatal cases below, in no one of which did the dejections for twenty-four hours surpass ten.

It is then, as intimated above, the toxic symptoms that in the vast majority of serious cases are the ones that should arouse our apprehension and stimulate the carrying out of the most stringent measures possible for relief. The toxic elements produce their effect through the nervous system and are manifested objectively by the presence of one or more of the four following conditions: (1) high temperature; (2) marked restlessness, incessant movements, sleeplessness or vigil; (3) notable prostration and the collapse of cardiac depression; (4) reflex vomiting.

As illustrating these various conditions, I have chosen brief reports of a few cases from the hospital records. The choice was purposely made of cases terminating fatally, as they emphasize best the, at times, irresistible progress of the toxic process. Consideration of the forms of diarrhea dependent on extensive involvement of the intestinal wall has been omitted, owing to their comparative rarity, and to the fact that they are, as a rule, a chronic development of the acute form.

CASES CHARACTERIZED BY MARKED RESTLESSNESS OR VIGIL.

Case I. Entered with history of illness of two weeks' vomiting and eight to ten black dejections daily. The striking point at entrance was persistent tremulousness of hands and arms. The eyes were staring, the pupils at times unequal. The head was somewhat retracted, but not stiffly so. In forty-eight hours he had only six dejections, four of which were yellow and two green.

Case II. After entrance averaged four to five slimy green dejections daily, vomited much. During last three days and nights of life *slept only in naps about a minute's duration.* Constant vigil.

Case III. This case was notable simply for marked distention and great restlessness. The number of dejections did not rise above seven per day.

CASES CHARACTERIZED BY COLLAPSE.

Such patients were, as a rule, obviously of low resisting power; but it is an effect to be apprehended even in the robust.

Case IV. This child was said to have been ill only two days, and was having only about seven slimy green dejections in twenty-four hours.

Case V. The history of this case before entrance agreed with the continuation in the hospital, namely, six small, dark green movements in the twenty-four hours, and more or less vomiting.

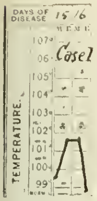
Case VI. This patient was in collapse at entrance, and had been ill a week. The dejections were green and watery with much mucus, but numbered only fourteen in forty-eight hours.

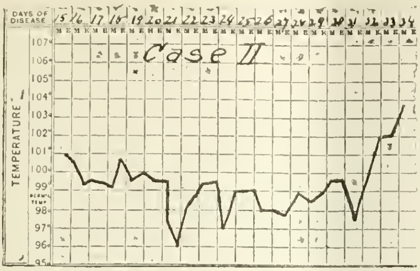
CASES CHARACTERIZED BY HYPERPYREXIA.

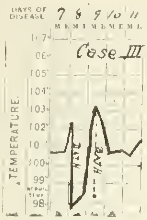
In these cases the temperature was temporarily dropped from one to five degrees by administration, at intervals of two to three hours, of cool baths or injections.

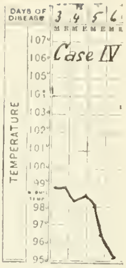
Case VII. Never more than ten dejections in twenty-four hours, green and watery. Took food badly. Dejections improved somewhat in character.

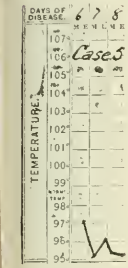
Case VIII. No history of this case was obtained. During the first day there were four dark green dejections; during the second, seven.

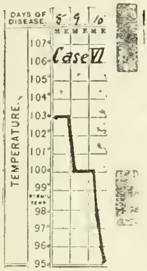


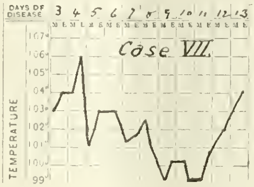


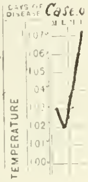


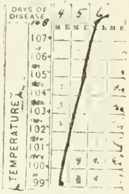






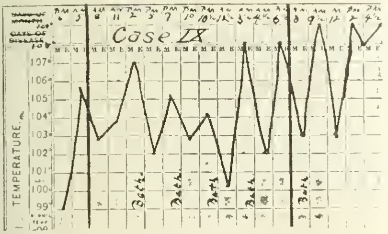






Case IX.
Daily Chart.

Case IX. Said to have been sick for three days before entrance, with vomiting and diarrhea. After entrance had five slimy, yellow dejections.



Three-Hourly Chart.

In regard to diagnosis, it may be added that no case is here reported in which the differential was not carefully considered and pulmonary affection or meningitis excluded.

All patients were under two and a half years. Temperature in all instances is rectal.

Since this paper is obviously making no claim for originality, it may not be out of place to mention briefly those measures of treatment which have seemed of most practical value. The list is short, and may be said to comprise, according to the indications of the individual case, — (1) a purge (calomel or castor oil); (2) abstinence from milk in any form for twenty-four to thirty-six hours; (3) full stimulation; (4) irrigation of the bowel, thoroughly and persistently carried out, with high injections of unirritating solutions; (5) in cases with pyrexia, cold water in form of baths or packs, best combined with mustard for stimulation of surface circulation.

With the injection of saline solutions into the subcutaneous tissue I have no personal experience, but believe that it should find its value in supplying the loss of body fluid in the choleriform cases.

The exhibition of some of the bismuth preparations, either with or without salol or other antiseptic, is of undoubted value when it is feasible to get the little patient to take it in quantities large enough to do any good.

The fallacy of increasing the amount of poison that the system has to battle with by the administration of opium during the acute stage needs no exposure.

When milk must be stopped for a day or two, a substitute for the fluid thus cut off should be given in the form of barley-water or rice-water, which contain a small amount of nourishment; or wine-whey, which amounts practically to a solution of milk-sugar. These should be given often and in small quantities, and either hot or cold, as best taken and retained. Return to more nourishing food should be made with great caution, the first trial being made with milk so modified as to be weak in fats and proteids, or with beef-juice; the former being peptonized if necessary.

Persistent vomiting may often be checked by stomach washing.

A Biological Institute for Paris. — An extensive and perfectly equipped school of biology is about to be erected in the Rue Dutot, opposite the Pasteur Institute, Paris. A lady some years ago devised the ground on which it is to be built, and the Baroness Hirsch has given £80,000 for the erection and partial endowment of the institution. A hospital is to be attached, in which suitable cases will be treated by Dr. R. Roux, and the entire establishment is expected to be ready by 1900.

TYPES OF HABIT NEURO-PSYCHOSES.[1]

BY EDWARD W. TAYLOR, M.D., BOSTON.

THE excuse for bringing to your notice a subject by no means new, is its extreme but too often unrecognized importance. In the same sense that habit forms so essential a part in the normal conduct of our daily lives must we look upon it in those conditions which, while bordering on health, often lead to disturbances of nervous equilibrium, which are distinctly pathological. It is the transitional period which is important, and demands our special attention, that critical period when a neural process once gone slightly astray is as likely to go on to the formation of a confirmed morbid habit as to return to the bounds of what we commonly term a normal state. Our attitude toward the victims of such perverted nervous habits is often tolerant, but rarely truly sympathetic and analytical as toward the less subtle forms of disease.

The object of this paper is to bring to your notice a number of conditions, illustrated by certain typical cases, which deserve our profound study and closest analysis. In attempting this we are repeating what has already been admirably done in Boston by Dr. Morton Prince[2] and Dr. Russell Sturgis,[3] whose papers, in great measure, have afforded the stimulus for this reiteration of the general principle involved. Prince's paper on "Association Neuroses" appeared in 1891. It is an altogether convincing presentation of the significance of association or habit — to use a less technical word — in the genesis of many affections which, when established, have the traits of independent diseases. Dr. Sturgis has approached the subject from a somewhat different point of view, but likewise offers much that is suggestive.

It is evident to the most superficial student that in the genesis of the common neuroses we are dealing with matters whose proper interpretation demands the exercise of our most critical judgment. Neurasthenia, for example, has far outgrown the interpretation put upon it by Beard. Fatigue is by no means always an adequate explanation; the sympathetic nervous system is demanding a recognition not yet accorded it; the subtle problems of food supply to the neuron, and nutrition, in the broadest sense, are claiming their share of attention. The mental factor is again becoming prominent. The time has, in fact, come, when our conceptions must be remodelled on comparatively new lines. It is, however, not at all our purpose to attempt the discussion of any of these disputed matters, but simply to limit ourselves to the interpretation of certain symptoms by means of an appeal to habit. In doing this we shall try to avoid the use of psychological terms, and modes of expression which are foreign to common experience.

There is no doubt a general willingness to admit that habit constitutes the very essence of a well-organized and effectual life. As children we are taught to make as many as possible of the commonplace acts of life habitual, and as we grow older we become more and more subservient to the power of continually repeated acts, until finally we become, in great measure, automatic. This is regarded as an unmitigated good so long as the continually forming habits subserve the general welfare of the individual, and that education is regarded as successful, which best brings this end to pass. As Prof. William James admirably puts it: "The great thing then, in all education, is to *make our nervous system our ally instead of our enemy.* It is to fund and capitalize our acquisitions, and live at ease upon the interest of the fund. *For this we must make automatic and habitual, as early as possible, as many useful actions as we can*, and guard against the growing into ways that are likely to be disadvantageous to us as we should guard against the plague."[4] It requires no elaborate argument to see and realize the essential correctness of this point of view. We all of us recognize, in a more or less thoughtful way, that we are bundles of habit, and that so far as these habits are good they are serviceable to us, and so far as they are bad they are more or less harmful. In persons physically well the mixture of good and bad habits is regarded as inevitable, and certainly not noteworthy. When, however, through any cause the nervous system is, or has become unstable, it must happen that the tendency to the formation of a morbid habit is increased. It is, no doubt, just at this point that so many persons begin a life of partial nervous invalidism, brought about by the persistence of certain pernicious associations. Leaving aside all other questions then, our purpose in what follows is simply to draw attention to, and attempt to analyze some of the morbid conditions in which habit plays a predominant rôle.

It is not difficult to make a rough but practical classification into three divisions:

(1) That in which without apparent cause a morbid association is aroused, and persists through repetition.

(2) That in which an association is formed as the result of an imperfect interpretation of physiological processes.

(3) That in which an association persists after its exciting cause has been removed.

In the first category may be placed a very large number of so-called neurasthenic conditions, whose source is often most difficult to determine. These are the patients who tell you they have been ailing for months or years. Their symptoms are often vague but annoyingly persistent; they know of no cause; they are not overworked. They are not neurasthenic in Beard's sense. A rest cure is just what they should not have. A persistent attempt to analyze the conditions brings us no further than to a settled conviction, that a fixed habit of experiencing certain morbid sensations has grown up, has fed upon itself, has finally so dominated the individual both mentally and physically that he is quite as likely to experience pain and discomfort in the various situations in which a normal person would experience only pleasure. These are difficult cases; their troubles are often temperamental, and an integral part of their character. They are, in great measure, the victims of perverted habit; their cure lies evidently not in drugs, but in a correction of their point of view, through a substitution of helpful for harmful trains of association. There is, no doubt, such a thing as a habit of health; and an equally definite habit of illness. Each day fixes the morbid habit, as in the healthy person each succeeding day brings a completer assurance of the health of the next. There are many of these border-line cases; they merge on the one hand into what would generally be called the normal, and on the other into what every one would acknowledge as pathological.

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[1] Read before the Massachusetts Medical Society June 8, 1898, and recommended for publication by the Society.

[2] Prince: Association Neuroses, etc., Journal Mental and Nervous Diseases, 1891, xvi, p. 257.

[3] Sturgis: Use of Hypnotism to the First Degree, etc., Medical Record, February 17, 1894.

[4] James: Principles of Psychology, vol. i, p. 122.

Not long since I saw a young girl who was afflicted with an attack resembling hay fever, whenever she looked for any length of time at a cat. When I saw her she had been playing with a kitten for perhaps half an hour, and as a result was undergoing a marked conjunctivitis. Her eye was suffused; her nasal mucous membrane was discharging in a typical fashion, her throat was affected, and altogether she presented a perfectly characteristic appearance of a hay-fever victim. She is not a sufferer from hay fever ordinarily, and nothing but a cat produces this effect. On questioning she was absolutely unable to give a reason for the peculiarity. She was fond of cats, and could not recall the circumstances of her first attack. This affection is evidently a neuro-psychosis of the habit type, owing its origin to some unknown association, and its persistence to habit. A friend of mine, who is a sufferer from hay fever, is annoyed in a similar way by contact with horses; his cure has been partially effected by a breaking up of the association, through wearing blue glasses. Prince narrates cases of a similar sort, in which the origin of the association is evident, and in which cure was effected by counter-suggestion.

These are merely examples of a very general principle which, undoubtedly, plays an important part in the persistence of many neuroses.

The second class is of much importance, not only theoretically, but also in view of the excellent results of treatment, when the condition is properly analyzed and interpreted. These are cases, who through ignorance of physiological laws form morbid habits, which result in distinct neuroses or psychoses. The commonest source of these disturbances is undoubtedly the sexual sphere. Both men and women are ignorant to an extraordinary degree of the normal function of the sexual organs. Everything is done by the charlatans in medicine to profit to their own gain by this ignorance, with the result that associations of a most pernicious sort are aroused, which grow in the usual ways to the discomfort and possible ruin of the individual. Cases of this sort are most familiar to us all, but their proper interpretation and successful treatment are far less common experiences.

The following is an example of this type of neuro-psychosis. A student of perfectly clean venereal history brings this report: For over four years he has been worried regarding a purely physiological matter, which in his ignorance he has thought abnormal. In consequence he has formed the habit of waking with regularity at three in the morning, which has added to his anxiety and annoyance. He went to college and through his entire course grew gradually worse, inasmuch as his head also began to trouble him. He studied psychology, and learned something of cerebral localization, which he naturally interpreted to fit his own case. He associated his supposed sexual difficulty with his head sensation, and in the light of his acquired knowledge put the two together as cause and effect. His reasoning was, if the arms and legs have cortical centres, the sexual apparatus must also; hence all my symptoms. For years he had been taking drugs, naturally without effect. He graduated from college and was anxious to take up his life work, but felt absolutely incompetent. His confidence failed, he was nervous, and on the verge of a break-down. With a feeling of desperation and with small hope of relief, he again sought medical advice. His cure consisted in the assurance that he had formed a morbid habit through ignorance of certain physiological laws, which later study had fostered. No hypnotism was necessary; and the new point of view offered brought about the desired result. The following night he slept until about five instead of waking at three, and a letter several months later stated the permanence of the cure.

This case is a perfectly typical one, and extremely easy of analysis. The onset of the affection was due to the false interpretation of a physiological event; it was fostered by a constantly more elaborated scheme of association; it led finally to a complex neurosis or more properly phychosis, which was rapidly undermining the nervous constitution of the patient. Treatment consisted in a substitution of a true for a false conception, and the habit of years' standing was immediately checked. Had the case been properly understood at the outset, those years of worry and unhappiness might easily have been avoided; had the condition persisted many more years the habit might as easily have become permanently fixed, to the lasting detriment of the nervous system.

There are many cases of a similar sort to this, some of them much less clear; but that this element of morbid association based on ignorance is an almost constant factor in certain neuro-psychoses, no one who has observed will be disposed to deny. In many of the nervous disorders of women this factor is at work. It is sometimes encouraged and sometimes allayed, by efforts directed to the local treatment of the pelvic organs. The absolutely important point to bear in mind is, that however conspicuous the subjective symptoms may be, and at times the objective signs as well, we should all the more direct our attention to the possibility of habit as a fundamental factor in the production of the final morbid condition. Could we intelligently forewarn our patients of the ills of certain habits into which they unwittingly fall, a step of the utmost value in prophylactic medicine would be taken, and the whole group of wretched hypochondriacal states be at least limited in their possibility of harm. A realization of this fact, we are convinced, is much needed by practitioners of medicine in every field. We have taken the sexual system as a characteristic example, but we do not wish therefore to be understood that the significance of this type of neurosis is confined to this sphere. On the contrary, it is very general in its manifestation, and is to be considered under manifold conditions. Further examples are the association of colds with damp feet and draughts in certain individuals, leading so often to a helpless slavery, or digestive disturbances following the eating of ordinarily harmless articles of food.

The third class which we have marked out is that in which a disturbed nervous state persists long after its exciting cause has been removed. In general, that large and constantly more important group of psychoses or neuroses following trauma is to be included in this class. In this connection we shall confine ourselves only to those results of trauma which are not connected with legal proceedings. We need offer no argument to prove that various nervous disorders do follow trauma; that is generally accepted. Our purpose is merely to trace one of the ways in which such disorders are perpetuated, following out the principle already outlined.

An illustrative case will best demonstrate our point. A man previously healthy falls on his shoulder, thereby sustaining an injury to the joint and its neighboring structures. His arm is temporarily disabled. His chief complaint is of pain in and about the joint, which is so severe that the arm is held practically immovable. He gives up doing any work which requires the use of the shoulder muscles, on the ground that the pain is too severe to permit it. The arm hangs helpless at the side. At the end of three months the patient presents himself at the hospital. Examination then shows, in other respects, a healthy man who holds his arm flaccidly at his side as if through an injury to the brachial plexus. There is, however, no marked muscular atrophy. On attempts to move the arm each effort is vigorously resisted by the patient with incessant complaint of pain. It is quite impossible for this reason, and on account of muscular spasm, to raise the arm to the horizontal, or in fact to move it freely in any direction. Voluntary movements of any magnitude on the part of the patient are not possible. From the history and physical appearances there was in this case no great hesitation in making a diagnosis of periarthritis, which subsequent events proved to be wrong. By way of instruction to the patient certain passive movements of the affected arm were made, which no less to his than to my surprise were brought about with more freedom and less pain than either had expected. In a few moments the patient could move the previously helpless arm almost as well as the sound one. His astonishment was extreme. He left the hospital temporarily cured and returned a few days later with the same disability, in spite of his efforts to help himself. He was again easily relieved, and has not since been seen.

Here, again, is a typical and exceedingly important type of disturbance. Its genesis is perfectly clear. A man falls and receives a definite injury, from which follows an actual disability, associated with pain. As the mechanical effects of the injury pass off, the pain persists in spite of the fact that its cause has been removed, and to the patient this idea of pain is as real as was the original pain. He has, in other words, formed a definite habit, which persists and tends to increase; the arm therefore remains helpless until the association is violently broken in upon, and even then tends to recur. It is a mere begging of the question to call such an affection hysterical, a term too much and too loosely used. Whether hysterical or not, the process remains to be explained. Its explanation lies in the line we have suggested, at least in part, in very many cases. The failure to recognize such conditions is a just reproach to the physician. By such failure many psycho-neuroses are engendered and propagated, until finally the association becomes so firmly engraved in a nervous system, that relief is difficult if not impossible.

A case, for example, comes to my mind in which a headache has persisted for fifteen or more years as the result of a trifling injury to the head, so firmly has the association of pain with a fancied fracture of the skull become fixed in the patient's mental life. The duty and the opportunity of the physician are clear in such cases.

Without further multiplying examples, we have seen, if the foregoing be accepted, that habit is an enormously important element in the perpetuation of certain morbid states. It all seems clear enough if we may only realize that a pathological habit is, in one sense, as physiological as a normal habit. To live always with a sense of well-being and health is accepted as natural; to be continually dragged down by pain and discomfort is looked upon as abnormal, but the two are, after all, simply habitual reactions of the nervous system to certain conditions, and the one is quite as natural as the other. The nervous system does its work well in either case; the fault lies with the unfortunate tendencies which determine the character of the neural associations. The nervous system is at first plastic, and easily moulded into right channels, but none the less easily, when certain strains are brought to bear upon it, into wrong ones. Some of those strains we have considered, and their power for harm when directed against an unstable nervous system. It is often possible for the physician to bring just that quality to his patient, which will permit him "to make of his nervous system his ally instead of his enemy."

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

FURTHER EXPERIENCE IN REGARD TO THE EFFICIENCY OF BEHRING'S DIPHTHERIA ANTITOXIN.

Dr. Bötticher, of Giessen,[1] reports on 312 cases of diphtheria treated with Behring's antitoxin in the diphtheria hospital between October 27, 1894, and December 31, 1896. One hundred and twelve of these occurred between October 27, 1894, and July 31, 1895, and had been previously reported on by Dr. Bose, the director. In the second period, namely, between August 1, 1895 and December 31, 1896, even more stress than during the first period was laid on giving a large and early injection of the serum. Fifteen hundred units should be injected of antitoxin No. III, or preferably No. III D. This amount was given to children, the youngest of whom was only six months old. A large dose in the beginning is more important in country practice than in the hospital; for in the latter the patient can be more closely watched and a second injection given without delay if the first was insufficient. One large dose acts more promptly and more surely than several smaller doses. The injection should be in the thigh. The strength of the patient should of course be carefully looked to. In cases of tracheotomy the patient should remain under the effects of chloroform as short a time as possible; and if he is very weak, he should be only partially narcotized.

Of the cases of diphtheria, 112 in number, that occurred in the first period reported on, 9 died, or 8.03 per cent. Of the cases, 200 in number, treated in the second period, 16 died, or 8 per cent. Thirty-eight of these 200 patients were children under two years of age and 33 of them recovered; 10 were less than a year old, and only one of these died (a child of six months) and the death took place four hours after entrance to the hospital. Of 585 cases of tracheotomy occurring between 1878 and 1894 and not treated with Behring's serum, 341 died. In the above-mentioned 112 cases there were 52 cases of tracheotomy of which 8 died, or 15.18 per cent. In the 200 cases there were 72 cases of tracheotomy with a mortality of 12 deaths, or 16.66 per cent.

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[1] Deutsche med. Woch., January 6, 13, 20, 1898.

The results are noteworthy in the year 1894. Of 91 cases of tracheotomy in children where no serum was used, 49 died, or 53.8 per cent. In the latter part of the same year 16 cases of tracheotomy occurred in which antitoxin had been given; of these only two died, or 12.5 per cent. That is to say, there was a difference in the same year under the two treatments of 41 per cent.

It should be stated that the 312 cases of diphtheria treated with Behring's serum, in which the mortality was 8.01 per cent., were not picked cases; on the contrary, some were hopeless when they entered the hospital and died in a few hours.

That antitoxin has its limitations is shown by examining the percentage in the mortality of 297 of these 312 cases, in which the antitoxin was injected on the first, second, third, fourth, fifth, sixth, seven, and eighth, etc., days respectively. The death-rate increased strikingly from the fifth to the eighth day inclusive. In some of these latter cases other bacteria, especially the streptococcus, than the diphtheria bacillus were present before their entrance to the hospital.

It is worthy of remark, that, if the organs of breathing are injured, by chronic bronchitis, for example, an attack of diphtheria is more dangerous and the prognosis is very bad.

Antitoxin has a favorable effect on the general condition of the patient and on the local appearances.

The principal points to be deduced from the results in Giessen are as follows:

The percentage of mortality under treatment with Behring's serum has dropped about 36 per cent.; in cases of tracheotomy, from 58.2 per cent. to 16.1 per cent.; in children in their first and second years of life, from 75.6 per cent. to 24.3 per cent.

Tracheotomy was unnecessary in the children that entered the hospital in one-third of the cases, as compared with former times.

Laryngeal stenosis disappeared under serum treatment in 17 per cent. of the cases.

The administration of successive smaller doses instead of one larger dose, which even in the very first stage of the disease should be at least 1,000 (but better 1,500) units, makes the efficiency of all serum therapeutics questionable.

DIPHTHERIA MORTALITY IN GERMANY.

"The Imperial Statistical Office has recently published[2] the returns of the causes of death in the towns of Germany of more than 15,000 inhabitants, from the year 1885 to the year 1895. These returns show that from 1885 to 1895 there were 119,038 deaths from diphtheria or croup, the average number thus being 11,904 per annum. The maximum was reached in 1893 by 15,860 deaths and the minimum in 1888 by 9,934 deaths. In 1895, when diphtheria antitoxin was first used on a considerable scale, the deaths went down to 7,266. The diphtheria death-rate was 10.69 per 10,000 of the population in the preceding ten years, and only 5.4 in 1895; so that the mortality had fallen 49.48 per cent. Of 100 deaths 4.53 were caused by diphtheria from 1885 to 1894, and only 2.53 in 1895. The decrease of the death-rate from diphtheria was almost uniform in every district of the empire; the prevalence of the disease was, however, about the same as it had been for the last twenty years, and it is therefore unquestionable that the serum treatment has had the effect of producing a remarkable improvement."

THE PRINCIPLES WHICH GOVERN TREATMENT IN DISEASES AND DISORDERS OF THE HEART.

Sir R. Douglas Powell, M.D.[3] states that in the three Lumleian lectures delivered before the Royal College of Physicians of London his endeavor has been to illustrate the principles of treatment rather than to touch upon details; a recognition of a neuropathic state, the principle of rest, of exercise, of drug administration, of restrictions in diet, upon which the more precise management of individual cases is formulated. In cardiac therapeutics the principle of submission must be accepted in order to better help patients to recognize the necessity of a life restricted within the narrowed limit of those conditions under which alone life can be maintained.

Neurosis.

There are unquestionably a large number, perhaps an increasing number of people, who are morbidly conscious of their heart's action, and of the function of their cardio-vascular system generally or in particular parts. It is amongst the class of so-called "neurotics" that functional disorders of the heart so largely abound.

Cardio-vascular Hyperesthesia.

The first degree of this condition, consisting of undue appreciation of the heart's action and the blood circulating through the vessels, is extremely common in nervous introspective people. The heart's action may be quite normal, but it is liable from slight causes to become paroxysmally excited and accelerated. The pulse tension is variable.

The next degree is that in which the heart's action is really oppressed to a point varying from a mere vague anxiety to a positive discomfort and onward to the third degree, the acute suffering of angina. These persons may not be introspective, their attention is not concentrated upon their circulation, but is compelled thereto by actual discomfort or pain.

It is from among the first two classes of cases, not distinct but merging into one another, here referred to, that the cases of vaso-motor angina come. Shock, chill, emotion, dyspeptic distention of nerve endings, and other causes may so increase arterial resistance as to cause cardiac embarrassment and anginal pains. Paroxysmal attacks of palpitations or tumultuous action of the heart are not uncommon incidents in connection with especially the second degree of cardio-vascular neurosis described, the attacks being attributable to sudden vaso-motor relaxation or to vagus irritation from dyspeptic or gouty causes.

It is difficult to precisely formulate the harm done by amateur drug-taking for pain, sleeplessness, and spasmodic suffering. It may be clinically summarized by saying that the controlling centres of the nervous system suffer chiefly, emotional disturbances are more easily excited, reflex agitation is less controlled, the cardio-vascular and thermic centres are diminished in tone. The little bottles of tabloids so freely used have much to do with the increase of the neurotic disturbances of the heart and vessels, which is unquestionably a medical feature of the present generation. A neuralgia which in former days necessitated the called-for nerve rest is now promptly subdued by a dose and the patient is enabled thus to take a further step in nervous fatigue without direct suffering.

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[2] Lancet, February 19, 1898.

[3] British Medical Journal, March 26, April 2, 9, 1898.

Neurotic persons as a class take too little food, are always hurried over the meals and in the details of life; they eat too fast, and have a tendency to exceed in nerve stimulants — tea, tobacco, alcohol, and certain drugs — or they find their excitement in social entertainments.

It is in all cases essential to make a thorough examination of the heart, and to come to an absolute diagnosis, for the treatment rests largely on moral grounds. If the patient can be truthfully assured that there is no organic lesion a most important step is taken in the treatment. The next point is to investigate his mode of life and correct it where necessary. The removal of the morning cup of strong tea, the proper relief of the bowels, the absence of hurry previous to and during meals, together with a few sensible directions with regard to the dietary will do much to render digestion more complete and quiet the nervous system. Some must be induced to give up the philanthropic and other duties with which their nervous energies impel them to fill all their time outside hard business hours.

Drugs are, of course, often required in the treatment of functional disturbances of the heart, purgatives or laxatives, and particularly an occasional mercurial to lower arterial tension and to remove irritating materials — sometimes nerve sedatives of the bromide order, often hematinics, especially arsenic or iron, as tonics to the nervous system and blood restorers. Strychnine is often very badly borne by patients of the neurotic class, except perhaps for short periods, and where a cardiac tonic is required, caffeine is more appropriate. In cases of venous plethora a course of salines is sometimes necessary and in gouty cases suitable remedies.

Many of the troubles and some of the catastrophes of cardiac disease are attributable to functional derangement. Numberless people die of functional disturbance of a diseased heart, few, or none, die of functional disturbance of a sound heart. Hence the importance of a definite diagnosis in every case as to which category it belongs.

Treatment of Angina Pectoris.

In a large proportion of cases angina pectoris is an entirely functional disorder, the main feature of which is sudden increase of blood pressure and a correspondingly sudden call upon cardiac effort; it may be on the systemic, it may be on the pulmonary, side of the circulation that the strain arises. The causes of this arterial spasm are almost all within our scope of remedial treatment, and the neurosis that favors its occurrence is subject to considerable modification and control. In all these cases while it is the heart that suffers the angina, the conditions that originate that suffering are outside the heart. There is no essential difference save in degree, and not always in degree, between cases of angina in which the heart is sound and those in which it is unsound, but there is every difference in the gravity of prognosis and the urgency of treatment.

The pain, which is to a certain extent the measure of the strain upon the heart, is to be attacked by remedies which relax arterial spasm. Amyl nitrite, nitroglycerin, and the nitrites generally, but especially nitro-glycerin (one minim of the one-per-cent. solution) may be given at intervals of five minutes for two, three, five or more doses, and at the same time that the antispasmodic is given an appropriate cardiac stimulant is required. In the more purely neurotic cases it is most desirable to avoid alcohol. There is no better stimulant than slowly sipped hot water. Dr. Brunton has pointed out that sipping is a physiological stimulant to the heart, and hot drinks tend to relax arterial spasm. A prescription for a carminative draught, including ammonia, chloric ether, and valerian or cardamom, is valuable to be taken in several sips. Warmth to the surface, and especially to the extremities, are the further requisites.

The second stage of these cardio-vascular attacks is one of reaction and excitement, to be followed by fatigue. Often by the time the medical observer arrives the cardiac pressure has already been relieved through the depressor nerve of the heart excited by intraventricular pressure bringing about relaxation of arterial spasm. With a few hours' rest in bed the patient may again be fit for the duties of life, although usually a sense of lassitude and fatigue remain for a few days. It is now that the cause of the attack must be sought out, the conditions of the heart carefully ascertained, and the daily life, diet, surroundings and functions of the patient must be investigated and corrected when in error.

If there be no heart disease present, the patient must be thoroughly reassured on that point; but if heart lesion be present, much more attention must be given to the after-treatment. The gravest cases are those in which there is enlargement of the heart without, or not accounted for by, valvular defect. The fatty heart, the syphilitic heart, the renal heart may be mentioned in this category, Aortic stenosis and aortic regurgitation come next. On all these cardiac conditions anginal attacks may supervene, having precisely the same mechanism as the attack unattended with cardiac disease. It is most important to bear this in mind, for the treatment is in precisely the same lines, only it must be more urgently pursued.

The initial treatment may be started with nitrite of amyl inhalation, and the patient should always have the drug at hand. But the attack is commonly attended with such acute heart failure that the clinical features of high pressure pulse and laboring heart may be immediately lost. The subcutaneous injection of pure ether, to which a minim of nitro-glycerin solution may be added, if not already otherwise taken, is the best treatment in severe cases if caught at the right moment. The sense of prostration is greater and more defined in these cases. Alcoholic stimulants, so much to be avoided in pure vaso-motor cases, are in these imperative. A full dose of brandy should be given in some hot drink. In those cases, and they are many, in which flatulent distention forms a marked feature of the attack, if it be not concerned in producing it, a draught of ether, ammonia, soda, cardamom and spirits of chloroform is of much service at the earliest stage.

The heart is left in an exhausted and fatigued condition after the attack, and there is a decided tendency to a series of several attacks. For this a mixture of strychnine or caffeine may be prescribed with digitalis, so that 15 or 20 minims of liquor strychninæ and 20 or 30 or 40 of tincture of digitalis are given in twenty-four hours, and the strychnine may be given subcutaneously in, of course, equivalent doses, or the caffeine in the form of salicylate. It is probable that digitalis and strychnine influence the heart muscles before that of the vessels, but if the pulse becomes tightened, as it may be in exceptional cases, the digitalis must be lessened or its effect on the vessels moderated by the addition of half a minim or one minim doses of nitroglycerin to the prescription. Oxygen inhalation is a powerful restorative to the fatigued heart, and it may be given for five or ten minutes every hour, or two or three hours as may be required.

These cases often come with a history of a recent attack and it is necessary to consider what form of angina it has been, how to avert fresh seizures and how to repair, if it may be, the failing heart which renders each attack so dangerous. The presence or absence of heart disease must be rigorously ascertained :

(1) The soundness or otherwise of valve function.

(2) The presence or absence of enlargement, dilatation, or hypertrophy of the organ.

Tachycardia, Bradycardia, Exophthalmic Goitre, etc.

There has as yet been found no direct means of treating simple tachycardia successfully. The digitalis class of drugs are useless in this, as in almost all cardiac neuroses, except, and the exception is important, in the treatment of the heart fatigue which sooner or later ensues as consequence of the functional strain upon the organ. Tachycardia in its various grades is, however, often but a symptom, a prominent expression, of a neuropathic state which requires to be approached for treatment from many sides.

Many people, especially women, suffer from persistent hurry of the heart, coming quite within the range of the lower degree of tachycardia and there is nothing to distinguish simple tachycardia from that which is the constant symptom of exophthalmic goitre, the rhythm and quality of pulse being precisely the same.

In exophthalmic goitre, the physician has to deliver himself of the somewhat magisterial sentence "imprisonment for six months and under surveillance for from two to five years." The rest for the first six months should be absolute on bed, sofa, or on a couch in the open air, with the utmost avoidance of all excitement and mental fatigue. The patient can then be promoted to bath-chair exercise, quiet walking and driving, or more scientifically graduated exercises, and in the course of time recovers. The general well-being of the patient can be maintained, and the more distressing local and general symptoms relieved or removed by cold applications to the throat, sedatives of the bromide and valerian order, arsenical and sometimes iron tonics; digitalis and the like drugs may be given on the appearance of heart fatigue, indicated by the signs of dilatation and a pulse irregular in time and force. In the treatment of the tachycardia, apart from heart-strain, digitalis is of little value. The use of thymus extract is of some value in diminishing the rapidity of the pulse; the galvanic current has been found useful in some cases.

Bradycardia.

One form of bradycardia is that which sometimes follows upon the rapid heart of exophthalmic goitre and it is very commonly associated with well-marked myxedema. In chronic bradycardia, a condition that tends to remain permanent, and does not necessarily shorten life, an occasional twenty-four hours' rest in bed should be enjoined and for mental work the recumbent posture should be preferred. In cases of a more temporary kind the combination of strychnine with an alkali or iodide of potassium (the two drugs being kept in separate bottles, and only mixed at the time of taking) is a very useful one. Caffeine is also very useful, especially where the urine is scanty. A five minutes' whiff of oxygen three or four times in the twenty-four hours is a valuable cardiac stimulant. In cases of myxedema thyroid extract will be given, but it is not wise to push it to the production of any excitement of circulation.

(To be continued.)

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON THE PRACTICE OF MEDICINE, DENVER, JUNE 7–10, 1898.

FIRST DAY.

ADDRESS OF THE CHAIRMAN, DR. SAMUEL A. FISK, OF DENVER.

The climate of Colorado is unsurpassed; the best proof of its efficacy in pulmonary diseases is the large number of recoveries that are effected here.

The man practising medicine exclusively is hampered, on the one hand, by his professional brother, who demands that he may put his hand into his side in order to have a demonstration perceptible to the senses; on the other hand, he is hampered by the laboratory man, who demands that clinical results shall tally with those of mechanical appliances. Dr. Shattuck has already pointed out to us the fact that "Internal Medicine" should use these different results rather than be used by them. It may be that we are somewhat to blame for these conditions, and that many a fault has to be covered up by a theory rather than a fact. "The peculiar type of disease," is often used for a cloak for one's shortcomings; or where this fails, one is wont to take refuge behind the theory of "self-limitations," which led Dr. Warren, many years ago, when asked what was good for acute rheumatism, to reply, "Six weeks." Fortunately, text-books do not contain the whole of medicine, and disease does not so easily direct her course according to the tactics of medicine. If our joints are swollen and painful with acute articular rheumatism, we know nowadays that we do not have to wait the whole of six weeks, and that the old idea of "twenty-one days," as applied to typhoid fever, does not hold good, as we have peculiar types of disease known as typhus levisimus, a febrile typhoid and an abortive typhoid. The fact that we have these peculiar types, whether as the result of practice or in spite of it, leads us to hope that a disease that has once been aborted can be aborted a second time, and that in time the peculiar type may become the prevailing type. In the direction of abortive medicine as well as of preventive medicine our Section has considerable scope for the future.

This is the centennial anniversary of Jenner's famous discovery. It is needless to do more than make mention of this fact to recall the blessings that have accrued to the world from this discovery; one of the greatest blights of mankind, that has frequently decimated a population, has been wiped out; and the average limit of man's days has increased in consequence. It may not be out of place to note the fact that these results are derived from clinical observation and not from the laboratory toil. Without wishing to depreciate the results of experimentation and of exactness, one cannot but chafe under absurd demands and unjust restrictions. One is reminded of Hamlet's little frenzy: "Why, look you now, how unworthy a thing you make of me. You would play upon me; you would seem to know my stops; S' blood, do you think that I am easier to be played upon than a fife?"

DISCUSSION ON PERFORATION PERITONITIS.

Dr. J. C. Wilson, of Philadelphia: The visceral diseases not yielding to treatment, and sooner or later, to be transferred to the surgeon, are the following: Empyema; pericardial effusions; troublesome cases of cholelithiasis with persistent symptoms and empyema of the gall-bladder; cysts of the pancreas and echinococcus cysts. The kidney may be extirpated when it is the seat of malignant or other growths; nephrorrhaphy may be performed for the relief of symptoms due to displacements; hydronephrosis and nephrolithiasis may require operation; and certain cases of stubborn nephralgia may require incision into the capsule. Surgery of the gastro-intestinal tract has been extended to establishment of gastric fistulæ in stenosis of the esophagus, pylorectomy, partial or complete extirpation of the stomach, gastro-enterostomy, removal of carcinomatous growths of the lower bowels, appendicitis cases, ulcerative cases of the stomach and intestines, especially peptic ulcer and the perforative ulcer of enteric fever.

The remarks of the speaker would have no bearing on surgical lesions followed by extravasation of the intestinal contents and infection of the peritoneum, as it is well known that in such cases immediate operation is the only hopeful procedure.

Aside from traumatic and gynecological cases the list of diseases in which acute general peritonitis may arise is most extensive:

(1) In the alimentary canal: (*a*) peptic ulcer, gastric ulcer and duodenal ulcer; (*b*) enteric fever; (*c*) appendicitis.

(2) Other hollow viscera, the contents of which may be infected: (*a*) the gall-bladder; (*b*) the contents of the kidney; (*c*) the urinary bladder.

(3) Rupture of abscesses: (*a*) purulent pleurisy; (*b*) subphrenic abscess; (*c*) hepatic abscess; (*d*) abscess of the pancreas; (*e*) appendicular abscess; and (*f*) other pus collections in regions in relation to the peritoneum.

(4) Necrotic processes involving abdominal viscera: (*a*) internal strangulation; (*b*) intussusception; (*c*) volvulus; (*d*) embolism and thrombosis of the mesenteric vessels; (*e*) gangrene of the pancreas or spleen; (*f*) displaced kidney or spleen with twisted pedicle; (*g*) acute hemorrhagic pancreatitis; (*h*) fat necrosis.

In some of these conditions, when the patient has been under observation prior to the accident causing the peritonitis, the disease can be readily determined; but in other cases the patient, while out of health, is able to be about, and it is difficult to make an exact diagnosis. The distinction between the cases in which an immediate diagnosis can be made and those in which it cannot is a matter of theory rather than of practice. The form requiring immediate attention is acute fulminative peritonitis. Here is a question of diagnosis.

In the early stages when operative interference is advisible and not without hope, the symptomatology may be grouped as follows: (1) Pain, general, becoming local; or local, becoming general, according to cause. (2) Tenderness, general, becoming local; or local, becoming general. (3) Rigidity of the abdominal muscles. (4) Vomiting, green, and exceptionally absent. (6) Shock, varying in depth. (7) Diminished peristalsis.

The symptoms in fully developed peritonitis, in which the wisdom of interference is questionable, are: (1) Pain, lessened or absent. (2) Tenderness, general. (3) Distention, excessive, replacing rigidity. (4) Vomiting, excessive, dark and fecal. (5) Obstipation, peristaltic movements not heard. (6) Pulse, rapid and feeble. (7) Temperature, high or low. (8) Lividity of abdominal skin; cold extremities. (9) Peritoneal facies. (10) Mind clear.

In hopeless cases these symptoms are increased with collapse; the patient is moribund.[1]

The condition of the abdomen is of the utmost importance. The early rigidity of the abdomen is a symptom whose importance is not sufficiently recognized by the practitioner.

In a series of six cases of perforating ulcer of the stomach, reported by different observers, where an operation was performed within a few hours after the development of symptoms indicating perforation, five recovered.

In "Surgical Complications and Sequelæ of Typhoid Fever" by Keen, there is a table of 83 cases of operation for perforation in enteric fever; this gives 19.36 per cent. of cures and 80.64 per cent. of deaths. When this is compared with Murchison's unchallenged figures of 90 to 95 deaths without operation, we may take courage for the future.

In cases operated upon within twelve hours, the percentage of recoveries was 26.7 per cent.; between twelve and twenty-four hours, 30 per cent. After twenty-four hours the mortality was total, except one after twenty-six hours and two that recovered in between two and three days.

In conclusion, we may formulate the following propositions as regards operation in acute general peritonitis due to perforation and analogous conditions:

(*a*) A definite causal or local diagnosis of the lesions can be made in comparatively few instances.

(*b*) The diagnosis of acute general fulminative peritonitis is of itself sufficient to justify interference in proper cases.

(*c*) The earlier the operation the greater the chances of success. After twenty-four hours, especially if great distention of the abdomen has shown itself, operation is not likely to be followed by recovery.

(*d*) A small proportion of the cases are manifestly hopeless from the onset.

(*e*) When the patient is so obviously past hope the fear of death upon the table should not deter the surgeon from operating.

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[1] Richardson and Cobb: Park's Surgery by American Authors, vol. xi, p. 386.

Dr. W. W. Keen, of Philadelphia, said that the catalogue of diseases causing perforative peritonitis was great enough to challenge our attention. He did not entirely agree with the speaker in regard to the symptoms, but thought that the pulse and temperature were of unequal value. In general the temperature was the best index of a septic condition, but it could not always be relied upon. Dr. Wilson's statistics were of great importance. If the patient is seen for the first twenty-four hours after perforation, he may be assigned to the grave. In cases of perforation in typhoid fever 95 per cent. die. Drs. Weir and Tinckler reported that in cases operated upon within sixteen hours the mortality was 30 per cent. In cases of peritonitis where perforation had taken place, he thought that immediate operation offered the only hope of recovery. He did not think it made any difference in regard to the mortality, whether the incision was two or six inches long. General and complete cleanliness of the abdomen was all-important. In general agglutinative peritonitis he believed in making an incision on both sides and in thoroughly cleansing the abdomen. He was glad that the section had taken up the discussion of this subject, as it was one that interested every physician and surgeon, and one in which all should unite in the work for life and humanity.

Dr. J. H. Musser, of Philadelphia, confined his remarks to his own experience. He looked upon pain, usually localized, as a symptom very significant and greatly to be dreaded. Post-mortem examination usually shows that perforation has been preceded by localized inflammation, and there is considerable lymph covering the intestines in that region, and matting them together. The phenomenon preceding perforation is the pain, the severity of which depends upon the intelligence of the patient at the time. In typhoid fever the patients are not susceptible to pain, or else their state of mind is such that their attention is not directed to it. Pain, localized tenderness, antecedent history and slight rigidity followed by symptoms of shock should suggest the possibility of an accident. Excluding typhoid fever, the symptoms of shock are those that must be depended upon in typhoid fever in making a diagnosis. He agreed with the surgeons who advocated making an exploratory incision in order to verify a diagnosis. He cited the case of a young girl who had all the symptoms of typhoid fever, though the reaction did not verify the disease. At the end of the first week she complained of pain, but there was no rigidity or tympany. The following day the pain was more severe, being referred to the back. An examination was made to exclude pelvic disease, when a large mass was found in the pelvis. The patient died, and a pelvic tumor as well as evidences of typhoid fever were found. This showed the importance of early diagnosis; an exploratory incision would have removed any doubt as regards the diagnosis.

Dr. C. G. Stocton, of Buffalo, N. Y., advised ascertaining whether the viscus was a hollow one containing air, as the stomach or intestines, or whether it was the gall-bladder, urinary-bladder, etc. The symptoms differ materially in different cases. There was little difficulty in diagnosing a perforation following a peptic ulcer. The case of a patient was cited who was picked up on the street in a state of collapse and intense pain. The pain being in the region of the bladder, it was thought that she had ruptured her bladder. No operation was performed; and when she died at the end of a week, perforation of the stomach was found to exist, from which the gastric contents had been discharged into the abdomen. The speaker thought that the suddenness of the onset of the symptoms was the best guide in the diagnosis of perforation, though it might be preceded by a slow inflammatory process producing tympany before the symptoms of shock appeared. In one case of peritonitis in which pain was referred to the region of the kidney, the patient succumbed, and post-mortem examination showed a number of renal calculi, one of which was just passing through the ureter. It often happens that there is an absence of the symptoms that one expects.

Dr. L. F. Bishop, of New York, believed that opium obscured the symptoms and gave false confidence. He had found that ice-bags relieved the pain in these cases.

THE DIFFERENTIAL DIAGNOSIS BETWEEN DENGUE AND TYPHOID FEVER, WITH SOME ACCOUNT OF THE EPIDEMIC OF 1897 IN TEXAS.

Dr. H. A. West, of Galveston, read a paper with this title.

The following hypotheses have been assumed in relation to the recent epidemic:

(1) The disease was dengue only. There was no yellow fever in Galveston or Houston, Texas, in the year 1897.

(2) There were anomalous cases of dengue, presenting the symptoms of yellow fever, but not proven to be that disease by its indisposition to spread from numerous foci and the low mortality-rate. During the progress of an intense epidemic of dengue throughout the State, yellow fever made its appearance at Galveston, Houston, and possibly at other places; but on account of its mild form and resemblance to the prevalent disease, it was quite generally unrecognized.

(4) An imputed hypothesis that the epidemic of 1897 in Texas was yellow fever only.

(5) A few cases terminated fatally, and others attended by marked jaundice and albuminuria were denominated acute infectious jaundice (Weil's disease).

It appears that the symptoms that have hitherto been relied upon to differentiate between yellow fever and dengue are the occurrence in the former of albuminuria, the characteristic facies (inclusive of jaundice), the divergent pulse and temperature, excessive irritability of the stomach, and increased disposition to hemorrhages. The absence of such symptoms in the main, the presence of an eruption in the large proportion of cases, and a want of mortality are characteristic of dengue. Admitting that there is a greater similarity in the symptomatology of the two diseases than has hitherto been acknowledged, the question arises how they can be differentiated. In my opinion simply by the symptom complex of an acute nephritis in yellow fever and its absence in dengue. In the latter simply parenchymatous changes may occur in the kidney and be manifested by an evanescent and mild albuminuria; while in the former a series of many cases will afford incontestable evidence of the occurrence of severe nephritis, namely, scanty urine of high color and specific gravity, intense and persistent albuminuria, hematuria casts, decided tendency to suppression and the accompanying uremia.

SECOND DAY.

DIABETES MELLITUS AT THE MASSACHUSETTS GENERAL HOSPITAL, FROM 1824 TO 1898. A STUDY OF THE MEDICAL RECORDS.

The above paper was by DRS. REGINALD H. FITZ and ELLIOT F. JOSLIN, of Boston, and was read by Dr. Joslin.

The total number of cases treated from 1824 to 1898 was 172. Within the last thirteen years there were as many cases as during the previous sixty-one years; 127, or 74 per cent., were males; 45, or 26 per cent., were females. The average age of 40 female patients was 39.1 years, being higher than in 121 males, of whom the average age was 31.4 years.

Tables were presented showing the proportion of diabetic cases to other medical cases in the hospital, as well as the classification of these cases as regards age, nationality, occupation, heredity and trauma. There was only one negro in the whole number of cases.

The impression prevailed in the early days in the hospital, as well as in the literature of the time, that there was more liquid passed than was injected. Sugar was determined by taste until 1861; sometimes by the patient and sometimes by the doctor.

The statement "A curious smell in the breath, which he has had since entrance," was made in 1835; and after this frequent allusions were made to the odor of the breath and urine before the test for acetone was discovered.

The average duration of the disease was one and a half years; in one case it lasted twelve years, and in another two weeks. The tables also showed that the duration in nearly seven-eighths of all fatal cases was less than two years.

Out of the 172 patients 47, or 27 percent., died. The mortality among males was 30.7 per cent.; of 45 female patients 8 died, a mortality of 17 7 per cent. The lowest mortality was in the period from 1824 to 1840; but the total mortality from 1824 to 1885 was the same as from 1885 to 1898. Of the 47 fatal cases, 18 died comatose. Of the diseases complicating the fatal cases, only six had pulmonary tuberculosis, six chronic nephritis, and one disease of the pancreas.

"Animal food with bread in small quantities" formed the diet in the first period. There has been no essential change since. Between 1840 and 1855 experiments were made with yeast, and from 1870 to 1885 with glycerin; but results were poor. Eight of the comatose cases were treated with intravenous injections of salt solution or bicarbonate of soda. All died, though in some there was temporary improvement.

DR. WEST, of Galveston, thought that the small proportion of cases occurring in the negro might be due to the fact that there were few negroes in the locality, though he had never seen a case in that race. Diabetes and gout were frequently associated. Diabetes pursues a rapid course in the young. Albuminuria was said to be found in about 60 per cent. of the cases, and yet an autopsy failed to show kidney lesion; this seemed to him remarkable.

DR. TYSON, of Philadelphia, said at a clinical lecture he had made the statement that he had never seen a negro with this disease. A negro physician was present who had a large practice, and in a few days three negroes came to him with unmistakable diabetes. It might be more common in this race than was supposed.

DR. BOND, of Indiana, thought this trouble was more common in the Hebrew than in the Christian, because of the peculiar mode of life of the former. They congregate, and have evening meals, parties, etc.

(To be continued.)

Recent Literature.

Lectures on Physiology. By A. D. WALLER. On Animal Electricity. First Series. 144 pp., 67 figures. Longmans, Green & Co.

This book, which is an amplification of the Fullerian Lectures in Physiology for 1897, presents very fully the facts of the electrical phenomena manifested by nerves. The experiments in which chloroform and ether are compared as to their effects upon the negative variations produced by stimulation of an isolated frog's sciatic are of particular interest, as are also those which seem to show for tetanization a similar effect to that produced by bathing with an atmosphere of carbon dioxide.

Text-Book of Medical Jurisprudence and Toxicology. By JOHN L. REESE, M.D. Fifth edition. Revised by HENRY LEFFMANN, A.M., M.D., Ph.D. Philadelphia: P. Blakiston, Son & Co. 1898.

The present edition does not differ very widely in essentials from those that have gone before, and for that reason presents its material in a compact form, well made and convenient.

Certain changes in the arrangement of the subject-matter have been made, which on the whole are in the line of improvement.

Atlas of Legal Medicine. By DR. E. VON HOFMANN. Authorized translation from the German. Edited by FREDERICK PETERSON, M.D., assisted by ALOYSIUS C. J. KELLY, M.D. Fifty-six plates in colors and 193 in black. Philadelphia: W. B. Saunders. 1898.

In the preface the author says: "In the preparation of the atlas my purpose has been that it should serve for further illustration of a good text-book, that it should be, to a certain extent, a supplement to the latter. I have therefore limited the descriptive text, and have not considered a series of illustrations such as are found in every good text-book of legal medicine and in other widely distributed books, as, for instance, blood-spectra, spermatozoa, etc. This, on the one hand, diminishes the cost of the book, and, on the other, permits of the introduction of other important illustrations."

The work as a whole, both that of the author and publisher, is a distinct addition to the literature of the subjects treated. Not only are the subjects of the illustrations well chosen, but the plates and figures are unusually and uniformly good. It is rare indeed that so large a series of illustrations are found which demonstrate so well and so accurately the conditions which they are supposed to represent.

Burdett's Hospitals and Charities, 1898; Being the Year Book of Philanthropy and the Hospital Annual, etc. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press (limited).

This year book has taken a recognized place in its department, is now well known and continues to contain a large amount of valuable and useful information.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JULY 21, 1898.

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MEDICAL JOURNALISM.

WITHIN the past few years the increase in number of medical weekly and monthly publications has been so enormous that all contributors, however unworthy, are easily accommodated, if not in one direction then in another. Everybody who styles himself "M.D." now finds abundant opportunity to air his views, or solicit advice in a perplexing case, and the result is a species of medical journalism as variegated and heterogeneous as the "Purple Cow" or "Lavender Pig" exemplars of general literature (?) that are constantly appearing upon the news-stands.

A critical examination of the contents of certain specimens of the class of medical journals to which we refer, reveals on the part of their contributors an ignorance of the most commonplace facts of medical science that is simply deplorable and a sublime disregard for rules of syntax that is none the less deplorable, although infinitely more amusing. The conclusion to which the examiner inevitably comes is that the medical press of this country is in sad need of a censorship.

Dialect stories cannot compare, for bizarre spelling and phraseology, with the communications of certain medical gentlemen in distress over patients with "a touch of the consumption" or a complex of symptoms designated (shades of Charcot!) "a spell of the hysterics." From the intricacies of construction which characterize these writings, the Queen's English undergoes every variety of contortion until, finally, the very acme of elegant simplicity of diction is encountered in journals of the "correspondence" type. In these we find "Doc" So-and-So communicating his perplexities to "Doc" Somebody-Else or bestowing upon him an infallible remedy for piles in exchange for a prompt and safe emmenagogue. All these little amenities are characterized by a style of diction that rivals the masterpieces of the "Ready Letter-writer" and demonstrate, if they do no more, that the lacteals of human kindness are never withered in the medical breast.

This is the class of writers about whom Dr. Holmes[1] says: "They go for weakness whenever they see it, with stimulants and strengtheners, and they go for overaction, heat and high pulse and the rest with cooling and reducing remedies." But their contributions can be of no positive value to scientific medical literature for the reason that they aid in no way toward a better understanding of disease processes. The movement which has set such a class of writings on foot is retrograde in that it tends to foster empirical methods of prosecuting a calling which now, more than at any other period of its existence, demands that its true representatives shall be scientists in the fullest sense of the word, and not mere dispensers of powder and pellet.

The dignified attitude which medicine is beginning to assume among the sciences can never be maintained unless the writings which record its progress are of a quality to compare with those which mark the advances in the sister sciences.

We have gained so much of exact knowledge through pathological and experimental research that future contributions to current medical literature should be stripped almost entirely naked of theory and speculation, those barriers to scientific progress. To achieve this the medical writer must needs be an investigator, at least to the extent of finding out how far such views as he is about to put forth are substantiated by the facts of pathology. The neglect of such a preliminary step is to-day a tacit avowal of both laziness and ignorance, since our library facilities for such work are abundantly adequate. When the writer has before him all necessary material, he should aim, above all, at clearness and accuracy. His English should be terse, not oratorical and certainly not colloquial; it should be free from hybrid technical terms, especially those with Greek roots and Latin endings. Finally, his bibliography should be such as will bear verification, for there is nothing more maddening to the man who is searching the literature than to find reference after reference which resists all attempts at identification. The only accurate way to refer is to refer in full, even to the page number of every quotation.

In conclusion, we wish to allude to two faults which are rife enough among contributors to medical journals to be considered annoying, to say the least. The first is the eternal dragging in of the *ego*; and the second, an inordinate fondness for the sensational. With respect to the first, we can only say that in our opinion no man's writings will ever lose anything of dignity or worth by being, as far as possible, impersonal. As a sample of the second fault we need only call the reader's attention to the earlier literature of the x-ray. If he will but compare that with what represents the thoughts of men who have probed its usefulness to the bottom, the moral lesson will be obvious.

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[1] The Poet at the Breakfast-Table, Riverside Press Edition, p. 121.

YELLOW FEVER IN CUBA.

As the last issue of the Journal was going to press, we stated that there was a rumor to the effect that yellow fever had made its appearance about Santiago. The rumor has since been confirmed, and there is now no doubt that the fever is prevailing to a certain extent in our army. Fortunately the disease is of a very mild type, so that the deaths are exceedingly few.

It is said on the authority of an army officer, who has made a special study of yellow fever, that the disease, as it occurs in Cuba, is usually a very mild variety, and that with proper care it is not difficult of treatment. It would seem with our present knowledge of diseases of this type, that the hospital corps, now with the army in Cuba, should have no great difficulty in checking the spread of the fever, and also doing much for the relief of those who may already have it. It is only when the demoralization of an epidemic is established that a great loss of life is to be feared, and such demoralization, we feel sure, will not be forthcoming.

In the light of the outcome, General Miles's order to burn the outlying village of Siboney has been more than justified. It is possible that had this been done sooner, a source of infection might have been removed, which probably has been the starting-point of many, at least, of the cases. There is every reason to suppose that the miserable refugees from the city, who were so hospitably received by the American troops, brought with them the seeds of contagion, which naturally spread in a soil so admirably adapted to their growth. It will also be remembered that certain members of the commissary department were the first to contract the disease, which would bear out the correctness of this supposition.

The idea of treating patients affected with the disease on the spot is unquestionably a good one, and much wiser than an attempt to remove those already ill to the mainland. By the establishment of hospitals on the high ground about Santiago, no doubt better results may be attained than by removal to a cooler climate, and apparently this is to be the policy of the medical department.

Recent advices inform us that about three hundred cases among the soldiers are reported, most of them, however, not of a dangerous sort. Many of the Red Cross nurses are also said to be ill with fever, contracted in their efforts to relieve the sick. There is, however, no sign of a panic, a contingency which will undoubtedly be avoided, even should matters prove much worse than they now appear to be. Evidently the government means to do its utmost to combat the disease in its incipiency. It is said that Surgeon Arthur, of New York, has been given *carte blanche* to get together as soon as possible a large number of contract doctors and nurses familiar with fever cases, who will be sent at once to Santiago.

The real danger of the situation unquestionably lies in the native population, who are many of them absolutely unfit, through suffering and privation, to bear any additional physical strain. The problem of caring for these unfortunate victims of circumstance, in addition to the necessary work among our own troops, may well tax the resources of our hospital corps. We feel confident, however, that it will be quite equal to the demands made upon it, and will have no great difficulty in coping with the disease in any form in which it may appear.

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MEDICAL NOTES.

Abram Jacobi, M.D., LL.D. — The degree of Doctor of Laws was conferred on Dr. Abram Jacobi, of New York City, on June 30th, by the University of Michigan.

Award of the Jenner Medal. — The first award of the Jenner medal of the Epidemiological Society of London has been made to Mr. William Henry Power, F.R.S., Senior Assistant Medical Officer of the Local Government Board.

Proprietary Prescriptions. — In 217,000 prescriptions written in Chicago, Philadelphia, New York, Boston, Washington, Baltimore, Denver, San Francisco, New Orleans and St. Louis, 11.25 per cent. were proprietary articles.

Charges Against a New York Medical School Set Aside. — The charges against the New York Post-Graduate Medical School and Hospital, relative to a misapplication of funds, have been investigated by the State Board of Charities, and set aside, as unfounded.

Yellow Fever Promptly Suppressed. — The Marine-Hospital Service announced July 9, 1898, that as far as is known there is not a single case of yellow fever in the United States. The total number of cases in the recent invasion at McHenry, Miss., was 24. The last patient was discharged July 8th. There are no other cases under treatment and no suspicious ones under observation. Since this announcement was made, we hear that cases of yellow fever have occurred among the troops in camp at Tampa.

A Special Committee Appointed to Commemorate Joseph O'Dwyer. — At the meeting of the Section on Diseases of Children, of the American Medical Association, held at Denver, Col., June 7–10, 1898, it was moved and carried unanimously that a Memorial Committee be appointed to commemorate the late Joseph O'Dwyer, with suitable powers, etc., to collect such moneys and to act with other bodies for the same purpose. The committee is composed of the following: Dr. Louis Fischer, New York, Chairman; Dr. J. P. Crozier Griffith, Philadelphia; and Dr. F. E. Waxham, Denver, Col.

Use of Intoxicating Beverages Restricted by General Miles. — According to the *Medical News* Major-General Miles has promulgated a general order to the army announcing that the history of other armies has demonstrated that in a hot climate, abstinence from the use of intoxicating drink is essential to continued health and efficiency; and enjoining the division commanders to restrict or entirely prohibit the sale of such beverages if the welfare of the troops or the interest of the service requires such action. For a general order emanating from the headquarters of the army upon this subject, a more positive statement would not have been out of place. No physiologic fact has been more thoroughly demonstrated than that the use of alcohol in climates representing the extremes of heat and cold, namely, in arctic expeditions and in tropical campaigns, is not only not beneficial but positively harmful.

INFANTILE SCURVY. — Dr. Augustus Caillé, a member of the Scurvy Investigation Committee, of this city, writes that the report of a collective investigation on infantile scurvy in North America, sent us by the recorder of the Pediatric Society and published on July 2d, should, according to a vote of the society, have contained the minority as well as the majority report. The former was as follows: "(1) From a study of three hundred and seventy-nine cases of scurvy collected, and taking into consideration certain well-known facts regarding the disease, scurvy appears to be a chronic ptomain poisoning due to the absorption of toxins. (2) It follows the prolonged use of improper food, and abnormal intestinal fermentation is a predisposing factor. (3) Sterilizing, Pasteurizing, or cooking of milk food is not *per se* responsible for the scurvy condition. (4) A change of food and the administration of fruit juice and treatment of any underlying cause is the rational therapeutic procedure in scurvy." — *Medical Record.*

TYPHOID FEVER IN THE ARMY. — Typhoid fever has, up to the present time, been as great a menace to the army as the much dreaded yellow fever, and yet, with strict precautions, it has in no way become epidemic. The *Medical News*, quoting Colonel A. C. Girard, Chief Surgeon of the Second Army Corps, says in regard to typhoid fever at Camp Alger: "There have been only 41 cases of typhoid fever since the camp was established on May 29th. Ten of these cases originated in the squadron of the New York cavalry. Four men arrived in camp with the disease, and six caught it while at farmhouses doing provost duty. Members of the Sixth Massachusetts now at the front contracted typhoid fever from well-water at Falls Church depot while doing provost duty. Other cases are isolated, and average about one to every regiment. The water in the wells of the camp grounds is absolutely pure, and has been tested by an analytical chemist from the Surgeon-General's Office in Washington. There are no cases of typhoid in camp now, as shown by the regimental surgeon's reports. As soon as a case is discovered the sufferer is sent to Fort Myer, and every precaution is taken to prevent the disease from spreading."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, July 20, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 24, scarlet fever 15, measles 44, typhoid fever 5.

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION. — Dr. Carroll E. Edson, formerly of Boston, now of Denver, has been elected Secretary of the Section of Practice of Medicine. Dr. F. H. Williams, of Boston, has been elected Secretary of the Section on Ophthalmology.

NEW YORK.

HEALTH OF THE CITY. — On July 12th Dr. Roger S. Tracy, Registrar of Records, made a special report to the Board of Health, which shows the health of the city during the six months ending July 1st to have been exceptionally good. A comparison of the deaths in the boroughs of Manhattan and the Bronx (the former limits of New York), with the deaths for the corresponding period of 1897 gives the following results: Total deaths in 1898 were 19,113, as against 19,509 in 1897, showing an annual death-rate of 18.66 in an estimated population of 2,048,880, as against 19.60 in 1897 in an estimated population of 1,990,562. This a lower mortality than in the corresponding months of any year since 1886. The number of deaths from diphtheria and croup is the lowest in twenty-six years, a fact which is considered largely attributable to the use of antitoxin and the medical inspection of schools.

In the first six months of 1894 the six contagious diseases, phthisis, diphtheria, croup, measles, scarlatina and typhoid fever, carried off 2,864; but in spite of a continuous increase in population the mortality from these diseases has declined in each year until in the corresponding period of 1898 it has been only 1,385, or considerably less than one-half what it was four years ago. During the first half of 1889, less than ten years ago, the deaths from the same diseases numbered no less than 3,181. Not less gratifying is the marked decrease in the death-rate among children under five years of age. These figures would seem to indicate improved sanitation as well as advances in treatment.

With the advent of hot weather, however, there has been a marked increase in the mortality of the city. While during the week ending June 25th the death-rate of New York (including all the five boroughs) was only 16.36, in the week ending July 2d, when the extreme heat commenced, the rate increased to 19.60, and in the week ending July 9th, to 26.68. As one would naturally expect under the circumstances, the greatest increase in the mortality has been in children under five years of age. During this last week the deaths in this class amounted to 974, against 598 in the week ending July 2d, and 428 in the week ending June 25th. The total deaths from diarrheal diseases were 399, with 382 in children under five, against 170, with 164 in children under five, in the week ending July 2d, and 74, with 69 in children under five, in the week ending June 25th. Contributing to the increased mortality were the number of deaths from sunstroke and drowning, as shown in the following table for the weeks ending June 25th, July 2d and July 9th:

	June 25th.	July 2d.	July 9th.
Violent deaths	63	68	136
Inquest cases	241	294	320
Sunstroke	1	8	76
Drowning	13	12	21

On comparing the mortality of the different boroughs in the week ending July 9th we find that the largest death-rate was in the Bronx, with its many large institutions, 31.59, the next largest in Queens, 30.56, the next largest in Brooklyn, 27.90, the next largest in Manhattan, 25.41, and the smallest in Richmond (Staten Island), 24.11.

Liquefied Air for Yellow Fever. — As the beneficial effect of cold in yellow fever is generally recognized, Charles E. Trifler, of New York, whose new method of manufacturing liquefied air at a small cost lately attracted so much attention in the scientific world, has proposed to the government to go personally to Cuba and set up a plant which he states could be done within ten days and at a cost not exceeding $5,000. This would include the equipment of a room large enough to accommodate, at least, one hundred patients, and his plan would be to have the liquid air evaporated outside of the room and the cold air thus obtained forced into it through pipes running along the ceiling. In this manner, he claims, a uniform temperature of any desired coldness could readily be maintained.

A Victim of the Opium Habit. — There was lately admitted to Bellevue Hospital a young man, twenty-two years of age, who is the worst victim of the opium habit met with in that institution for a long time. He is a drug-clerk, formerly of Brooklyn, and recently residing at Hickville, L. I. The patient was brought to Bellevue by Dr. C. T. Taliaferro, of the latter place, who stated that during the twenty-four hours preceding he had taken 60 grains of morphia, in addition to 20 grains of cocaine, and that for the past year he had taken from 30 to 45 grains of morphia every day, for the most part by hypodermic injection.

Trichinosis. — No less than six members of one family, Germans, living at Sherburne, near Binghampton, N. Y., have recently died of trichinosis, the result of eating raw pork. The disease was at first mistaken for typhoid fever, but a microscopic examination of the muscles of one of the victims at once disclosed its true nature.

Death of J. H. Wilson, M.D.—Dr. John Hewitt Wilson, one of the oldest physicians in New York, died at his residence in that city on July 17th, of apoplexy. He was born in Ireland over eighty years ago, and was graduated from Glasgow University in 1844. He came to New York many years ago, and notwithstanding his age continued in active practice up to the day of his death. It was a frequent boast of Dr. Wilson that he would die in harness.

Sick and Wounded from Cuba. — The first large consignment of invalided men from the seat of war arrived on board the transport *Olivette*, from Santiago, on July 16th. There were in all 272 wounded and ill, including a number of officers, and on the following day they were distributed to various hospitals in the city. It is stated that all but four of the patients are in a fair way to recover. One hundred of the men were quartered at the Marine Hospital at Clifton, Staten Island, and 56 at the Army Hospital on Governor's Island, while 54 were sent to St. Peter's Roman Catholic Hospital in Brooklyn, and 50, including the four very serious cases, to the Long Island College Hospital, Brooklyn. Two of the officers were taken to Roosevelt Hospital, and the others to Fort Wadsworth, Staten Island.

Miscellany.

THE LOSS IN KILLED AND WOUNDED BEFORE SANTIAGO.

The revised report gives the number of killed in the actions of July 1st, 2d and 3d, as 231, and of wounded as 1,283. Considering the fact that about 20,000 troops were engaged, and that the difficulties to be overcome were very great, this is to be regarded as a small percentage, being slightly less than eight per cent. It appears, in general, that those killed were shot in a necessarily fatal spot, the head or chest, for example, and were, therefore, from the outset beyond the hope of surgical skill. On the other hand, many were wounded; some, of course, severely and some slightly. In no case has there been suppuration or a rise in temperature. Here the excellent work of the medical staff has shown itself; and the number of recoveries will, no doubt, be exceedingly large, so far as one may judge at this early date from the published reports. In spite of the improvements made in the implements of war, it is probable that the small arms are not more destructive to life in battle than they were many years ago. The possible rapidity of fire begets a certain carelessness, and it is said that the average proportion of effective bullets is as one to four hundred. With the clean wound which these bullets usually make and the skilled treatment of the wounds, when made, we have some of the most distressing after-features of a battle removed.

AMERICAN MEDICAL ASSOCIATION'S STANDARD OF REQUIREMENTS.

At the recent meeting of this Association the following was unanimously adopted:

Whereas, The American Medical Association did at Detroit, in 1892, unanimously resolve to demand of all the medical colleges of the United States the adoption and observance of a standard of requirements of all candidates for the degree of doctor of medicine which should in no manner fall below the minimum standard of the Association of American Medical Colleges; and

Whereas, This demand was sent officially by the Permanent Secretary to the dean of every medical college in the United States and to every medical journal in the United States, now, therefore, the American Medical Association gives notice that hereafter no professor or other teacher in, nor any graduate of any medical college in the United States, which shall after January 1, 1899, confer the degree of doctor of medicine or receive such degree on any conditions below the published standard of the Association of American Medical Colleges, be allowed to register as either delegate or permanent member of this Association.

Resolved, That the Permanent Secretary shall within thirty days after this meeting send a certified copy of these resolutions to the dean of each medical college in the United States and to each medical journal in the United States.

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FOUR ARGUMENTS AGAINST NOISE.

There are four reasons, says the *Philadelphia Medical Journal*, why every physician and every other good man should wage persistent war against unnecessary noises:

(1) Because in a certain and an increasing number of sensitive and "well" people such noises distinctly aid in carrying them over the easily passed line from comparative health among the sick and "unfit for service," thus surely increasing the sick-rate.

(2) Because they decidedly destroy the vital and restorative powers of the sick, and thus clearly increase the death-rate.

(3) Because they dull and brutalize the nervous systems of those who can and do learn to withstand their pathogenic influences.

(4) Because they serve to make the sensitive and cultured, who are able to do so, separate themselves in their search for quiet from the masses, who must endure, thus serving to intensify the license of the noisemakers, by lessening the checks upon their crimes. The separation of the community into classes is exaggerated in this way, and these growing wider apart, make impossible desirable helpfulness, sympathy and mutual understanding of each other. Noise is undemocratic; it should be un-American.

It must, however, be admitted that noise belongs, in a sense, to civilization, and is a measure of its progress, and no doubt has come to stay. We learn from an editorial in the *Medical Record* that an anti-noise society has been established in New York. We certainly wish its incorporators success, but their task is a difficult one.

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EXPERT TESTIMONY.

In a discussion on expert testimony recently held in Philadelphia, Dr. H. C. Wood said that he had heard much medical expert testimony, and that some of the latter seemed to him beyond even the possibility of ignorance. But when it came to the question of how medical expert testimony is to be improved, he did not see any light in the answer. It cannot be improved by paying attention solely to the position of the expert. He had seen a physician of high position in a well-known medical school testify in court that the yellow staining of the tissues throughout a man's central organs was due to nitric acid absorbed through the lungs, and that the acid had circulated in the lungs sufficiently to stain the tissues. A single drop of free nitric acid circulating in the blood would be like a lightning stroke, yet the man recovered seven or eight thousand dollars for an alleged inhalation of nitric acid. It is Dr. Wood's belief that far more evil is wrought by neglect of medical testimony than by evil medical testimony. He has seen many cases where injustice was done either through absence of medical testimony or by ignoring it even when uncontradicted.

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MEDICAL BARBARISMS.

We are well aware that the English used by writers on medical subjects often does not conform to good usage. "Operate," as a transitive verb, we are unfortunately growing accustomed to, but it is fervently to be hoped that the following, cut from a medical college announcement, may never be accepted: "He will *clinic* (italics ours) in the amphitheatre once weekly," etc.

The following suggestion with regard to the not infrequent misuse of the word "case," is taken from the *Philadelphia Medical Journal:* "According to the dictionaries and common usage, 'a case' is the instance or history of a disease, the series of symptoms, circumstances and treatment constituting the special occurrence of a disease. Plainly and undoubtedly therefore the 'case' is very different from the 'patient.' And yet in every page of medical writings one sees an utter disregard of the distinction, a usage not only inelegant and incorrect, but often misleading and ludicrous. How in the world can a case 'be taken ill,' 'put to bed,' 'have a fever,' or 'die'? The patient may thus be spoken of, but it is absurd to speak of the case having a pulse-rate or temperature, of being comatose or delirious, dead, or posted. 'A case' thus reported is quite likely to suffer cremation."

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THERAPEUTIC NOTES.

Treatment of Chronic Rhinitis by Glycerin Tampons. — Dr. Vladimir de Holstein[1] recommends glycerin tampons for the treatment of chronic coryza, basing his claim on the well-known properties of glycerin in reducing local congestions, as evidenced by its extensive use in gynecological practice. He employs pure glycerin only, as boric acid or ichthyol add nothing to the efficacy of the application, and may at times provoke irritation of the lining membrane. The tampons must be applied into the anterior nares at least twice a day for ten or fifteen minutes.

In treating painful swelling of the cervical portion, Lutand [2] applies the following:

℞	Tannin	ʒi.
	Lycopodium	ʒiiss.
	Europhen	ʒv
	Pulv. opii. compos.	gr. xv.

This is applied through a speculum and secured with a cotton tampon.

Vomiting of Uterine Origin.[3]—

℞	Menthol	gr. v.
	Elixir pepsine	ʒi.
	Tra. Opii	ʒii.

M. et Sig. Ten to twenty drops before meals.

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[1] Semaine Médicale, No. 54, 1897; Bulletin Général de Therapeutique, 19° Livraison, 1898.

[2] Journal de Médecine de Paris, February 27, 1898.

[3] Lutand; Bulletin Général de Therapeutique, May 15, 1898.

RECORD OF MORTALITY

For the Week ending Saturday, July 9, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1759	974	30.54	9.42	23.94	.66	2.64
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	720	293	32.62	5.74	27.44	1.82	1.68
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	319	174	12.09	6 20	5 27	1.55	1.24
Boston . . .	517,732	166	52	11.40	16.80	4.20	3.00	2.40
Cincinnati . .	405,000	139	—	20.16	10.80	18.72	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	157	84	44 80	4.48	36.48	1.28	.64
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	67	20	22.20	7.40	16.28	—	—
Worcester . .	105,050	27	10	7.40	7.40	7.40	—	—
Fall River . .	95,919	33	11	18.18	9.09	18.18	—	—
Nashville . .	87,754	27	7	18.50	16.20	14.80	3.70	—
Lowell . . .	87,193	49	28	32.64	6.12	28.56	2.04	2.04
Cambridge . .	86,812	21	6	14.28	14.28	9.52	4.76	—
Lynn	65,220	20	4	10.00	20.00	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	19	10	21.04	15.78	21.04	—	—
Somerville . .	57,977	13	4	15.38	7.69	7.69	—	—
Lawrence . .	55,510	31	12	16.15	6.46	6.46	3.23	3.23
Springfield .	54,790	26	11	34.65	3 85	30.80	—	—
Holyoke . . .	42,364	21	14	23.80	19.04	23.80	—	—
Salem	36,062	9	2	—	11.11	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,894	5	0	20.00	—	—	—	—
Chelsea . . .	32,716	14	0	—	7.14	—	—	—
Haverhill . .	31,406	10	3	10.00	—	10.00	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	7	4	14.28	—	14.28	—	—
Taunton . . .	27,812	5	1	—	20.00	—	—	—
Quincy . . .	22,562	4	0	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	7	2	—	28.56	—	—	—
Everett . . .	21,575	4	1	25.00	25.00	25.00	—	—
North Adams .	19,135	9	2	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Chicopee . .	17,368	11	6	36.36	9.09	36.36	—	—
Brookline . .	16,164	—	—	—	—	—	—	—
Medford . . .	15,832	6	0	—	—	—	—	—

Deaths reported 3,653: under five years of age 1,737; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 989, diarrheal diseases 777, consumption 315, acute lung diseases 77, diphtheria and croup 65, typhoid fever 37, whooping-cough 37, measles 32, cerebro-spinal meningitis 20, scarlet fever 15, erysipelas 6.

From whooping-cough New York 18, Pittsburg 6, Philadelphia and Baltimore 4 each, Boston 2, Cincinnati, Lawrence and Springfield 1 each. From measles New York 19, Philadelphia 5, Baltimore 3, Pittsburg 2, Boston, Cincinnati and Providence 1 each. From cerebro-spinal meningitis New York 7, Boston 4, Providence 3, Pittsburg and Lynn 2 each, Baltimore and Somerville 1 each. From scarlet fever New York 10, Philadelphia 2, Baltimore, Boston and Malden 1 each. From erysipelas Baltimore 4, New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending July 2d, the death-rate was 14.9. Deaths reported 3,203; acute diseases of the respiratory organs (London) 162, whooping-cough 94, measles 77, diphtheria 55, diarrhea 54, fever 29, scarlet fever 27, small-pox (Newcastle-on-Tyne) 1.

The death-rates ranged from 9.0 in Preston to 22.8 in Sunderland; Birmingham 15.0, Bradford 12.5, Bristol 12.2, Croydon 10.9, Huddersfield 11.2, Hull 15.2, Leeds 15.6, Leicester 11.7, Liverpool 18.4, London 14.5, Manchester 17.0, Newcastle-on-Tyne 20.8, Nottingham 14.6, Sheffield 17.0, West Ham 12.6, Wolverhampton 19.0.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JULY 14, 1898.

Banks, C. E., surgeon. Granted leave of absence for two days from July 5, 1898.

Peckham, C. T., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., for examination to determine fitness for promotion. July 12, 1898.

Brooks, S. D., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., for examination to determine fitness for promotion July 14, 1898.

White, J. H., passed assistant surgeon. To proceed to Fort Monroe, Va., for special temporary duty. July 13, 1898.

Carrington, P. M., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., for examination to determine fitness for promotion. July 13, 1898.

Perry, J. C., passed assistant surgeon. To assume temporary command of Port Townsend Quarantine during absence of Passed Assistant Surgeon S. D. **Brooks**. July 14, 1898.

Brown, B. W., passed assistant surgeon. To proceed to Fort Monroe, Va., for special temporary duty. July 14, 1898.

Decker, C. E., assistant surgeon. Placed on waiting orders from July 23, 1898. July 7, 1898.

RECENT DEATHS.

Frederick William Vogel, M.D., M.M.S.S., of Roxbury, died July 16, 1898, aged fifty-two years.

Edward Hamilton Kidder, M.D., M.M.S.S., of Fall River, died July 16, 1898, aged thirty-three years.

BOOKS AND PAMPHLETS RECEIVED.

Reports of the Health Department of the City of New Haven, Conn., 1897.

New Forceps for Intestinal Anastomosis. By Ernest Laplace, M.D., LL.D., Philadelphia. Reprint. 1898.

The Woman's Medical College of Pennsylvania, Catalogue and Forty-ninth Annual Announcement, May, 1898.

Progressive Loss of Brain Weight in Dementia. By Warren L. Babcock, M.D., Ogdensburg, N. Y. Reprint. 1898.

Seventeenth Annual Announcement and Catalogue of the Woman's Medical College of Baltimore for the Session 1898–99.

Report of a Case of Acute Double Hydrocele, due to Secondary Syphilis. By Howard Paxton Collings, B.S., M.D., Hot Springs, Ark. Reprint. 1898.

Seventeenth Annual Report of the State Board of Health of New York. Transmitted to the Legislature February 15, 1897. Printed by the State. 1898.

The Transactions of the Medical Society of the State of California. Twenty-eighth Annual Session, Fresno, April, 1898. Vol. XXVIII. Published by the Society.

Septic Perforation of the Right Internal Carotid Artery. Autopsy Five Months after Death. By A. Jacobi, M.D., and James Ewing, M.D., New York. Reprint. 1898.

Some Observations on the Treatment of Tabes Dorsalis. Auto-Intoxication in its Relations to the Diseases of the Nervous System. By Daniel R. Brower, M.A., M.D., Chicago, Ill. Reprints. 1898.

Hay Fever and Its Successful Treatment. By W. C. Hollopeter, A.M., M.D., Clinical Professor of Pediatrics in the Medico-Chirurgical College; Physician to the Methodist Episcopal Hospital, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

Notes on Massage, including Elementary Anatomy and Physiology. By Jessie M. Ward, Instructor in Massage in the Pennsylvania, Philadelphia, Jefferson, Woman's and Presbyterian Hospitals, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

A Compend of Diseases of the Skin. By Jay F. Schamberg, A.B., M.D., Associate in Skin Diseases, Philadelphia Polyclinic; Dermatologist to the Union Mission Hospital. With 99 illustrations. (Quez Compends, No. 16.) Philadelphia: P. Blakiston, Son & Co. 1898.

Inflammation of the Bladder and Urinary Fever. By C. W. Mansell Moullin, M.D., Oxon., F.R.C.S., Surgeon and Lecturer on Surgery at the London Hospital; Examiner in Surgery at the University of Oxford, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

A Manual of General Pathology for Students and Practitioners. By Walter Sydney Lazarus-Barlow, B.A., B.C., M.D., M.R.C.P., late Demonstrator of Pathology and Examiner in Sanitary Science in the University of Cambridge, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

A Case of Bilateral Syphilitic Ulceration of the Palpebral Conjunctiva. A Case of Hypopyon Kerato-Iritis Occurring in a Patient during an Attack of Typhoid Fever. Central Amblyopia in a Dye-Worker Probably Produced by Inhalation of the Aniline Dyes. By Clarence A. Veasey, A.M., M.D., Philadelphia, Pa. Reprints. 1898.

Yellow Fever; Clinical Notes. By Just Touatre, M.D. (Paris), former Physician-in-chief of the French Society Hospital, New Orleans; Member of Board of Experts, Louisiana State Board of Health. Translated from the French by Charles Chassaynac, M.D., President New Orleans Polyclinic; Editor New Orleans Medical and Surgical Journal, etc. New Orleans: New Orleans Medical and Surgical Journal. Ltd. 1898.

Original Articles.

THE IMMEDIATE CORRECTION OF THE DEFORMITIES RESULTING FROM POTT'S DISEASE.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON, MASS.

Until recently the essential part of the treatment of Pott's disease or caries of the spine consisted in fixation of the spinal column. No attempt at the reduction of the existing deformity was made, the desire being to relieve the irritation as much as possible by means of the fixation and to prevent an increase in the projection of the bones. To accomplish this result, various forms of apparatus have been devised and various methods of treatment have been suggested, but with all, while occasionally no further increase has shown and even in rare instances while a diminution in the projection has resulted, still in the large majority of cases in spite of the most careful attention and without regard to the method of treatment, the deformity has increased. The presence of this deformity has been considered a necessary part of the disease, and if it has been possible to carry the patient through to convalescence with only a moderate increase of the deformity the result has been considered satisfactory.

In 1890, Dr. Hadra, of Galveston, Tex., presented a paper at the meeting of the American Orthopedic Association in which he reported a case of fracture of the low cervical spine in which he had corrected the position of the head and maintained the position by wiring the spinous processes of the cervical vertabræ. He also advocated this procedure in spinal caries, but reported no cases.

In 1895, Chipault reported a series of cases of Pott's disease, in which the deformity was forcibly reduced with the patient under the influence of an anesthetic, and not only were the spinous processes wired, but the transverse processes as well.

In 1896, Calot presented a paper at the Paris Academy of Medicine, reporting a series of cases in which the deformity was forcibly reduced, and as a part of the procedure, in some of the cases, the spinous processes were excised.

Since then, both of these writers have made other contributions, reporting large numbers of cases, and with both, in the later writings, the cutting part of the operation has been practically given up, the whole procedure consisting of the forcible reduction of the deformity by means of traction and pressure over the prominence.

Since the appearance of the first communication from these two writers, numerous other surgeons, chiefly on the Continent, have reported cases of a similar nature, and while in some of the early cases incision was resorted to with removal of or wiring of the spinous processes, the majority of the operations have consisted simply in forcibly straightening the spine.

The after-treatment in common use consists in the application of a plaster-of-Paris dressing, in which the whole body and head is included, and this is worn without changing for six months.

While for practical purposes the operation performed by Chipault and Calot is new, it is not, however, the first time that spinal deformities have been forcibly reduced. The history of medicine shows that at different periods a similar procedure has been practised by different surgeons, and it is not improbable that in days, generations or centuries ago, when reports and records of cases were not as carefully made or as common as now, the immediate reduction of the spinal deformities was not a rare operation. Hippocrates, writing five hundred years before Christ, speaks of the procedure as an old one, and reports several different methods for accomplishing the result.

One, which is termed Succussion, as described in the Adams translation, Sydenham edition, and in Bigg's "Orthopaxy," consisted in putting the patient on an ordinary ladder and securely fastening the hips and legs, leaving the upper part of the body free. The ladder with the patient, feet uppermost, was then drawn up to a "tower, or the mast of a ship," and dropped. Before reaching the ground the fall was suddenly stopped, and in this way, with the head downwards and the lower part of the body fastened to the ladder, the upper part, which was unattached, jerked the vertebræ apart and corrected the deformity.

Another method also ascribed to Hippocrates and described in Bigg's "Orthopaxy" is more suggestive of a surgical operation, and it should be said also that this is the method which was preferred by Hippocrates for "gibbosities," as the disease was then termed.

"Something like an oaken bench, of a quadrangular shape, is to be laid along at a distance from the wall (in which there had previously been scooped an oblong furrow), which will admit of persons passing around, if necessary, and the bench is to be covered with robes, or anything else which is soft, but does not yield much. The patient, after being stoved and bathed with hot water, is to be stretched upon the board upon his face, the arms being laid along and bound to the body. Next, the middle of a thong, which is soft, sufficiently broad and long, and composed of two cross straps of leather, is to be carried along across the patient's breast, as near the armpits as possible, then what is over the thongs at the armpits is to be carried around the shoulders, and afterward the ends of the thong are to be fastened to a piece of wood resembling a pestle; they are to be adapted to the length of the bench below the patient, and so that the pestle-like piece of wood resting against this bench may make extension. Another such bond is applied about the knees and the ankles, and the ends of the thong fastened to a similar piece of wood, and another thong, broad, soft and strong, in the form of a swathe, having breadth and length sufficient, is to be bound tightly about the loins, as near the hips as possible; and then what remains of the swathe-like thong with the ends of the thongs must be fastened to the piece of wood at the patient's feet, and extension in this fashion is made upward and downward equally, and at the same time in a straight line."

Still another method, as described by Jones and also attributed to Hippocrates, is as follows: "The patient being laid on his back, a leather bottle, not inflated, was laid under the deformity and blown up by an assistant with a forge bellows." This particular method, as might be expected, is described as not being successful.

Ambrose Paré, writing in 1647, in an article entitled "How to Restore the Spine Outwardly Dislocated," describes a method which is surprisingly similar to that followed by Calot and the French school at the present time. His method is as follows: "The vertebræ outwardly dislocated, when as they stand bunching forth, then is it fit to lay and stretch forth the patient upon a table, with his face downwards, and straightly bind him about with towels under the armpits and about the flanks and thighs; and then to draw and extend as much as we can upwards and downwards, yet without violence." It also states that if traction is not sufficient, two pieces of wood are to be cut out and, when padded, are to be applied over the spine and the correction made by pressing down on these with the hands.

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[1] Read at the meeting of the American Orthopedic Association, held in Boston, May 18, 1898.

Other writers speak of the procedure. Joerg accomplished the result by continued traction in bed with pressure over the hump.

However much the operation may have been performed in the distant past, certain it is that for many years or generations the treatment has consisted in fixation of the spine in the deformed position and in limiting the development of the deformity as much as possible. Braces have been devised which have attempted the reduction of the deformity, but very little if any improvement has been accomplished in this way, and anything like forcible correction has been carefully avoided. To Chipault and Calot must be given the credit of this present radical departure from the conservative methods which have so long been in use. In the past at different periods separated by many centuries a similar operation has been performed but for reasons which unfortunately the historians do not supply, each time the operation has been given up, to be revived centuries later, and then after a brief trial to be again forgotten. At this time it would be particularly interesting if the reasons could be known why the method has so many times dropped into disuse, and one can but wonder if another generation will find the immediate reduction of such deformities a matter of history. Certainly, if we are to expect all that has been claimed by the writers who have written the most, and have advocated the method most strongly, our disappointment will be keen, and but a short time will be necessary for the whole procedure to be discarded. Few surgeons familiar with the disease are willing to believe that the correction of humpback, which is merely a symptom of Pott's disease, and a plaster-of-Paris jacket worn for six months will make the patient well. If, however, the method is to be accepted as one part of the treatment of Pott's disease, to be used in selected cases, as other methods are used, this, together with our more perfect knowledge of mechanical therapeutics, makes it seem probable that much good will follow, and that in a certain number of cases the existing deformity will actually be diminished, and that in most of the early cases the increase will be less than has formerly been the case.

The exact operation, as commonly performed both in England and on the Continent, is described by Jones as follows:[2]

"Having determined to forcibly reduce the deformity in a case of Pott's disease, it is necessary to carefully prepare our patient, more especially if the plaster corset recommended by Calot be applied. For two or three days previously the patient should be dieted with a view to supplying nourishment and avoiding waste concretions. The bowels should be thoroughly well opened, so that if necessary abdominal pressure may be applied by the hand without risk; and for the same reason, the bladder should be empty. It is hardly necessary to state that the skin should be deodorized and disinfected, and that the head should be shaved. In order to avoid insect life, the scalp should be treated for a sufficient time. An assistant should now prepare the traction bandage. This consists of two linen bands a yard long. The centre of one piece is placed around the occiput, the centre of the other round the chin. They meet beneath the ear on each side, and at this point are firmly fixed by safety-pins. The free ends are knotted, and an assistant takes a loop in each hand, or, more conveniently still, the loops may be attached to a crossbar of wood or other material. The linen bands must be of equal length, otherwise the head is not pulled in line with the spine. They should be fully a yard long, in order that the assistant who controls the head may be well out of the way of the anesthetist. This traction is quite essential, as one cannot act upon the spine by manual grasp upon the head for any length of time. In addition to the assistant who controls the head, six others are needed: Two for the arms, two for the legs, one for chloroform, and one to directly assist the operating surgeon. Chloroform having been administered, at a given signal traction must be exercised. If the patient be small he need not be supported by chest or pelvic rack. A child of two and a half years requires a pull of 220 kilos. before the neck is dislocated. Traction, therefore, measured if necessary by the dynamometer, should be well within that strength. Roughly speaking, five men, pulling with a force that soon tires, rarely exceed 70 kilos., so that the danger of dislocation is very slight. All, however, should pull together, and there should be no jerk. This applies more especially to the assistant who controls the head. Simple traction will reduce the deformity in a large number of cases, particularly in curvatures situated high up. If it does not, direct pressure must be applied to the hump. An assistant places his hand upon the abdomen with sufficient power to feel the bodies of the vertebræ, and it is to anticipate this pressure that I have advised a careful diet and an empty bowel. This pressure on the vertebræ from the front is a check upon the surgeon who presses directly upon the hump, and who uses sufficient force to reduce the deformity, if he can do so with safety."

Such is the operation as it has been performed. The aggregate number of cases which have been operated upon in this way is quite large, and the immediate results have been surprisingly good, while the cases in which unpleasant complications have developed have been remarkably few when the amount of force used is considered.

My own work upon the subject was commenced this past winter; and at the very outset, it was a matter of much surprise that the correction could be accomplished with so much ease in the majority of cases, provided the spine was bent backward at the time traction was made. It was a matter of equal surprise that it was so difficult to maintain the correction no matter how carefully the after-treatment was managed. The position when the jacket was applied would be satisfactory, but when it was removed the deformity would be almost as bad as ever even though the jacket retained its shape and even though it was applied with much less padding than is recommended by Calot, who uses an inch thickness of felt all over the body. This led to much experimentation, and it was soon found that if the patient was placed upon the back and all the weight of the body above the thighs was borne upon a small upright which rested directly over the apex of the kyphosis, that the spine could be over-extended much more than was possible with suspension or horizontal traction, and that jackets applied in this position gave more satisfactory results.

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[2] Robt. Jones: The Immediate Obliteration of Deformity in Pott's Disease.

At first this method was used simply to obtain the best possible position of the spine after the forcible straightening under ether, but it was soon found that the same apparatus could be used for the correction, and that in a surprisingly large number of cases, no other force than the weight of the body was necessary to straighten and over-extend the spine. With the spine in this over-extended position the head was thrown so far back, and the body weight put so much upon the spinous and transverse processes, that it was possible to discard the helmet as a part of the support except when the disease was situated above the fourth dorsal vertebræ. In nearly all of the cases since the first, the after-treatment has consisted in the application of a plaster-of-Paris jacket carried low enough to grip the pelvis and to limit the motions of the thighs, and also high enough to prevent the shoulders from drooping forward, and the bending forward of the head.

In the early cases ether was used for the correction, but since then the work has been done entirely without anesthetics except in the cases where the disease has been of several years' duration. Cases of one and two years' duration have been easily straightened without ether, and with practically no pain or suffering to the patient.

In this way the operation has been simplified to such an extent that the word operation is hardly necessary for its designation, and it is so simple that in the acute or early stages of the disease the patients are treated in the office or the hospital out-patient department, the correction being accomplished and the jacket applied with no more disturbance than is expected with the application of such an apparatus in the ordinary method. In some of the cases the relief of the existing acute symptoms has been very striking with the improved position of the spine.

The apparatus which has been used for this purpose is pictured in Fig. I, and consists of a strong gas-pipe frame, six feet long by two feet wide. Suspended from this is a bar (*a*) in the centre of which is a vertical rod (*b*) forked at the top and long enough to reach to the level of the frame. This cross-bar is simply suspended from the frame so that its position can be changed as desired. Below this is another cross-bar (*c*) which rests on the frame and can also be adjusted as to position. Upon this latter piece (*c*) and upon the fork of the rod (*b*) rests two malleable steel bars (*d*) about eighteen inches long. These rest in grooves one inch apart, and should be bent to partly conform with the lumbar curve of the spine after which they are heavily padded with felt and the patient laid upon it as is shown in Fig. II. The upper end of the bars (*d*) should just rest upon the fork (*b*), not projecting over, and when the patient is in position the rod (*b*) should be one inch above the apex of the deformity. The buttocks rest upon the cross-bar (*c*) and the legs are supported by one or more heavy webbing straps which can be tightened or loosened at will. No support whatever is given the upper part of the body except that the head is steadied by the surgeon with the hand until a satisfactory amount of correction has been accomplished and then a strap similar to those used below gives the support so that the operator's hand is free. If traction is desirable it can be applied by means of a windlass which is attached to each end of the frame. This makes it possible to obtain much more definite and steady traction than would be possible with assistants, but its use has not been found necessary in the majority of the cases, simple over-extension of the spine accomplishing the same results.

When the maximum over-extension that is desirable is obtained the strap under the head is fastened and the patient allowed to lie in this position while the jacket is applied. In applying this the iliac crests should be generously padded with heavy felt and a similar pad should be placed over the upper part of the sternum so that the jacket can be carried high up to prevent the upper part of the body with the shoulders from drooping forward. In the cases with disease in the upper dorsal region the jacket should be moulded about the anterior part of the neck so that the erect position of the head is necessary. The forked rod (*b*) is easily avoided by a few figure-of-eight turns of the bandage, so that when the plaster has set the patient can easily be lifted off and as the rod (*b*) should be placed one inch above the apex of the deformity this weak spot in the jacket is not objectionable.

When the patient is taken off the frame, the two rods (*d*) are slipped out from below leaving the padding in place.

As a matter of experience, it has been found necessary to practically always cut a small window over the point of greatest deformity as otherwise when the body settles down, as is inevitable, a slough will form even though a liberal amount of padding has been used.

With a method so simple it would be unwise to report all of the cases in which it has been used, as one case does not differ essentially from another unless there be some special complication. In all a large number of cases has been treated, and in all in which the disease has not lasted more than a year, both in adults as well as children, the correction has been accomplished without ether and without suffering. In some of the cases two or three sittings have been necessary to obtain a satisfactory position, but this is true also of the method used by Calot. In the older cases, or cases of longer duration than one year, many of them have been corrected without an anesthetic, and while with quite a number ether has been necessary for the first sitting to break up the adhesions, it was not needed at the subsequent treatments, the frame alone being sufficient to accomplish the result.

A few cases reported with some detail may be of interest by way of illustration:

Case I. A girl, five years of age, was brought to the Children's Hospital in March, 1898, because of a bunch in the back, said to have been present for two weeks. The extent of the deformity is shown by the tracing Fig. 3 (*a*). The child was put upon the frame, and just before the jacket was applied the tracing shown in Fig. 3 (*b*) was taken. During the whole treatment not a cry or complaint was made by the child.

Case II. A boy, five years of age, who had a marked knuckle, as is shown in Fig. 4. The child was put upon the frame, and without ether and without pain, the position shown in Fig. 5 was obtained.

Case III. A girl, eleven years of age, who had had Pott's disease for three years and had worn a brace for over two years. In February of this year the position of the spine was as is shown by the tracing, Fig. 6. When put upon the frame, without ether and without pain, the spine was straightened, as is shown in Fig. 7.

Case IV. A boy, nine years of age, had had Pott's disease for over three years with steadily increasing deformity, in spite of careful mechanical and general treatment. The general condition had been steadily growing worse, and for this reason the correction of the deformity was attempted. The condition just before the operation is shown in Fig. 8. Ether was used for the first correction, but for the subsequent treatments the frame alone has been all that was necessary. The improvement in the child's general condition after the correction has been very striking, due apparently very largely to the better opportunity for deep respiration. The condition three weeks after the operation is shown in Fig. 9, and nine weeks from that time or twelve weeks from the operation is shown in Fig. 10. The improvement in position between these last two photographs is quite noticeable and illustrates the gain which can be made from time to time as the jackets are changed. There has been no pain from the first and the child has been up and about with the exception of the first two weeks.

As to the age of the patients, most of them, naturally, have been children, the youngest, and this one corrected without ether, being four years of age, while the oldest patient was a man of thirty-five. No unpleasant results have been experienced, while in practically all of the cases the symptoms have been relieved, and the paralysis which was present in five of the cases disappeared almost at once.

In one case there was an abscess which had been discharging for some time. No unpleasant symptoms developed, and the course of the abscess has not been noticeably changed by the treatment. This is given as a contraindication for the operation by some of the writers, yet it does not seem to me that the risk is materially increased provided there is a free outlet for the discharge. On the other hand, there must always be some risk and a very considerable risk, especially if much force is used, from the possibility of rupturing a small beginning abscess, too deeply seated and too small to be detected by examination.

The effect of the correction upon the paralysis has been most interesting and in the five cases with this complication the improvement has commenced almost immediately after the spine has been straightened. Other observers report similar results without much regard to the exact method by which the correction has been accomplished.

This experience would seem to show that in spite of the varying theories as to the cause of the paralysis, pressure must be the most important element, and that there can be little if any degeneration of the nerve cells or fibres as restoration of motor control has been at times immediate. In my own cases the improvement occurred at once in two cases, both adults with whom the correction was performed without ether, the power returning while the patient was upon the frame during the straightening. One of these was particularly striking, and beginning with almost complete loss of motor control of the legs as well as the bladder and the rectum, as the spine straightened he was able to move the legs. These cases are so striking and contrast in such a marked way with the results obtained by the ordinary methods of treatment, that a report of the separate cases is offered.

Case I. A young woman, twenty years of age, had had Pott's disease for between three and four years, and in spite of treatment the deformity had increased to the extent shown in the tracing (Fig. 11). Paraplegia developed nearly two years ago, and after recumbency for one year there was a partial return of power of the legs, and the patient was allowed up, wearing a leather jacket. The improvement continued for two or three months, and then the paralysis returned so that the bed was again resorted to. The early part of this year the patient was admitted to the Carney Hospital, and under ether the spine was straightened and a plaster-of-Paris jacket applied. The next day (the muscles were not tested on the same day) there was quite perfect voluntary control of the legs. The patient remained in bed for about four weeks and was then allowed up. Even though the control of the muscles of the legs returned, the exaggeration of the knee reflexes and ankle clonus persisted for two or three months, although this was not marked enough to interfere with walking. This has disappeared apparently as the muscular strength has returned. The patient now walks easily and without other peculiarity to the gait than would be shown by any one with whom the spine was held rigid. (Fig. 12 shows the position at the present time.)

Case II. A man, twenty years of age, was seen first in November, giving a history of spine trouble of five or six months' duration. Paralysis developed after two or three months of treatment, and for this the patient was put to bed, but after two months, there being no improvement, he was admitted to the Carney Hospital. At that time there was not only complete loss of power in both legs, but also paralysis of the bladder and rectum.

On March 14th, without ether, the spine was straightened upon the frame, and as it straightened the power to move the legs returned. No discomfort whatever was felt by the patient during the treatment, except a momentary sense of suffocation as the straightening commenced. When fully straight breathing was easier than it had been previously. Since then there has been a gradual improvement in the strength of the legs and in the ability to get about. (Fig. 13 was taken just before the operation, and Fig. 14 about four weeks later.)

Case III. A boy, eight years of age, had disease in the upper lumbar region which had been under treatment for one year. There was only a slight projection of the spine, and during the year there had been practically no increase. In March of this year paralytic symptoms developed in both legs. After a month of bed treatment, during which time there had been no noticeable improvement, the spine was over-extended without ether and a plaster-of-Paris jacket applied. Following this there was very marked improvement, and at the end of two weeks the child was allowed up, and has continued to do well since. The exaggeration of the reflexes has entirely disappeared.

Case IV. A man, twenty-seven years of age, was first seen in November, 1897, with Pott's disease in the dorsal region, of one and one-half years' duration. At the time of the first examination the knee-jerks were markedly exaggerated and a distinct ankle clonus was present. These symptoms increased so that walking was difficult, and in the following month the patient entered the St. Margaret's Hospital, and without ether a correction of the deformity was attempted. The jacket was applied lying on the face on a hammock, and served to hold the spine quite well for a few days, but after that the body seemed to settle into the jacket and the paralysis, which had been relieved, returned. This was repeated for two or three times, each jacket being followed by some improvement, but of short duration.

After this the patient was sent home and kept in bed; in spite of which the paralysis increased, so that there was practically no control of the legs. The bowels were

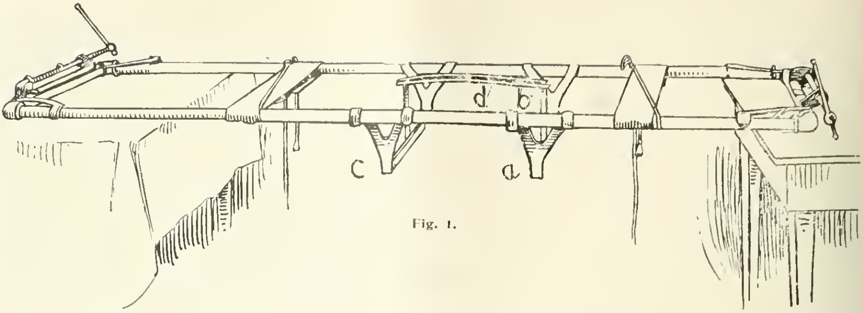

Fig. 1.

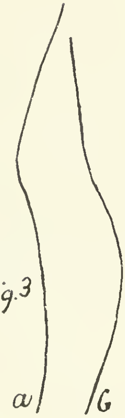

Fig. 3

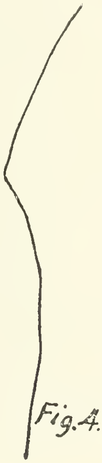

Fig. 4.

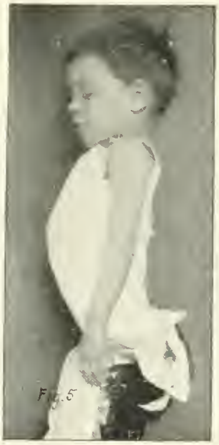

Fig. 5

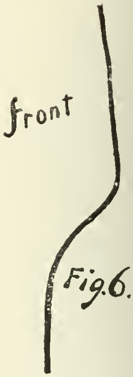

Fig. 6.

Fig. 7

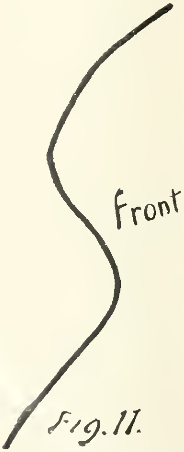

Fig. 11.

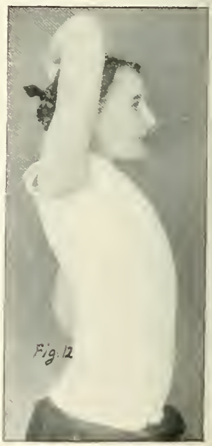

Fig. 12

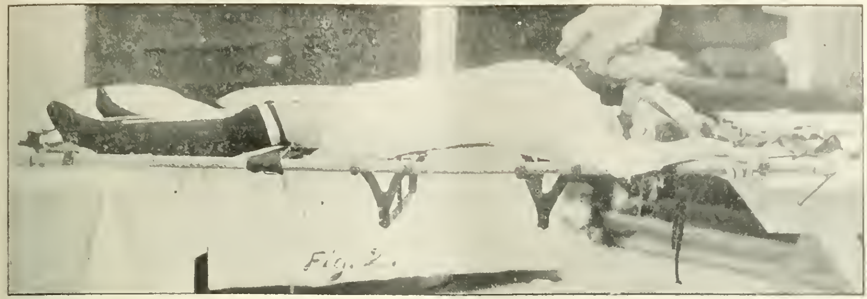

Fig. 2.

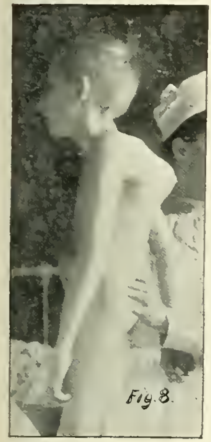

Fig. 8.

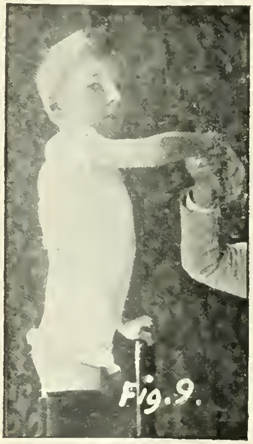

Fig. 9.

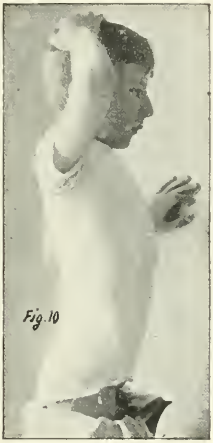

Fig. 10

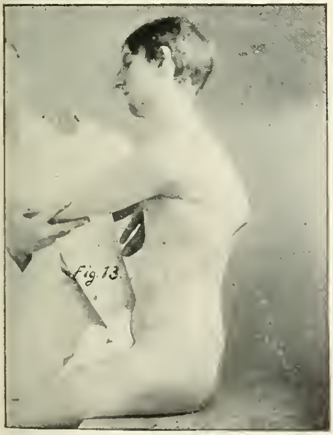

Fig. 13.

Fig. 8 represents Case IV before operation.

Fig. 9 represents Case IV three weeks after operation.

Fig. 10 represents Case IV twelve weeks after operation.

Fig. 13 represents Case II before operation.

Fig. 14 represents Case II four weeks after operation.

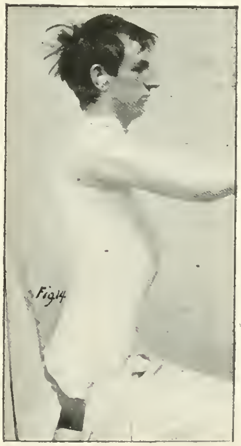

Fig. 14

also involved, and dejections were impossible without assistance.

On April 7th the patient was again admitted to the hospital, and by means of the frame, which had been perfected since the first treatment, the spine was straightened, and a jacket applied holding the over-extended position. While on the frame there was a partial return of voluntary control of the legs, more perfect on the left side. Since then two other jackets have been applied, each being followed by a gain in the use of the legs; so that at the present time the patient is able to walk about very easily, and the bowels, for which cathartics had been necessary for several months, have moved regularly without any assistance whatever since the spine was straightened.

Case V. A man, thirty-six years of age, with dorsal Pott's disease, which had not been recognized until the time of the first examination in April last. My advice had been asked because of a right-angled deformity of the right knee as the result of an old tumor albus. At this time both legs were paralyzed. The treatment was imperfectly carried out, owing to the fact that the patient lived at a distance from the city and it was necessary to use an improvised apparatus; nevertheless, with the imperfections, a marked gain in motor control of the legs resulted.

The results in these cases are in marked contrast with the results obtained by recumbency, which has until now been the accepted method of treatment.

In Myer's series of 270 cases the average duration of the paralysis, in the cases in which recovery took place, was as follows: in the cervical region, twelve months; in the upper dorsal region, nine and a half months; in the lower dorsal region, six months; and in the lumbar region, eight months.

My own experience has been similar to this series, with the paralysis as it has been seen in children. In adults the duration has been much longer; and eighteen months to two years has been more nearly the average time required for recovery.

The immediate results in such a series of cases are so strikingly satisfactory that the ultimate condition of the patients is apt to be overlooked, and in the first enthusiasm over the operation the exact pathology of the disease seems to have been forgotten. Certain it is that the deformity can be reduced in a large number of cases, but the fact remains that the cause of the deformity is the destruction of a considerable portion of one or more vertebræ, as the result of tubercular disease. It is also well known that bone repair in this disease takes place much more slowly and less completely than in the other forms of bone disease. Also it is well known that the reparative process in the bone can take place only after the tubercular granulations have been absorbed, a matter always involving many months or years; and what is also an important factor is that, as the bone-forming elements have been so largely destroyed by the disease, the amount of new bone formed must be slight and wholly inadequate to fill the large gap that would be left after the treatment of the severe cases. Claims have been made that bone repair has taken place very rapidly after the operation, and Calot and Ducroquet both present radiographs which are intended to prove this. The reproductions from these, however, are very far from satisfying, and one must be decidedly doubtful when it is realized that all of the pathological material which it has been possible to study shows little if any attempt at the formation of new bone. As tuberculosis of the spine is not essentially dissimilar from tuberculosis of the other bones and joints, and as the pathological condition found in the specimens which have been examined is entirely similar to the condition found after like treatment in other joints, it is probable and reasonable to suppose that the process of bone repair has not been radically changed by mere forcibly straightening the spine.

The immediate results of the work are most striking; but if this is to be the chief purpose, and unless the after-treatment is carried on most patiently and intelligently for years afterward, certain it is that the ultimate results will be as disappointing as the first results have been gratifying, and that relapse will be the rule. Already relapses have been reported by Pean, Phocas, Tansch, Lorenz and Vincent, and many others must follow, if a few months of after-treatment, as Calot would have us believe, is all that is necessary to accomplish a cure. It must be remembered that simple straightening of the spine does not materially alter the course of a tubercular disease. It may be slightly modified in some regards, but the disease is still the same.

Much good, however, will certainly follow the introduction of this method, and it will undoubtedly have its place as a part of the treatment of Pott's disease; and as the result of it in the future, humpbacks will, in all probability, be less common.

From my own experience it seems to me that the chief place for the operation is in the very early stages of the disease before extensive destruction of the bone has taken place. In these cases, instead of fitting apparatus to hold the bones in the deformed position, the spine should be over-extended and the jacket or the apparatus applied in this position. By doing this the weight is removed from the bodies of the vertebræ as much as possible and the irritation due to the diseased bones rubbing together is very largely relieved. It is reasonable to suppose that, as a result of this, the course of the disease will be somewhat shortened and that the destruction of the bone and consequent production of deformity will be lessened.

In the cases in which there is paralysis the operation is, without question, the best treatment; and in a certain number of other cases in which there is marked deformity, with the narrow chest and poor general condition, and where the deformity is increasing, the operation should be undertaken. In this latter class the general condition is improved by the more erect position, with the freer chest movement, so that the vital resistance is increased. In these cases the supports should be worn until the patient has attained the full growth, and then when the support is removed the relapse or the development of the deformity will be comparatively slight, as the ribs will then be firm enough to help in maintaining the erect position.

CONCLUSIONS.

It has been clearly shown that similar operations have been performed at different periods in previous centuries.

The operation, as simplified by the writer, has been performed in a large number of cases, upon which the paper is based.

An apparatus is described by which it is possible to accomplish the correction without the necessity of a large number of assistants and which makes it possible to apply the plaster-of-Paris jacket with marked hyperextension of the spine.

No unpleasant results have been experienced, and in the five cases in which paralysis was present the recovery was almost immediate.

In the acute beginning cases the operation seems to promise a moderate diminution of the existing deformity, and with the method of after-treatment, as advised, it is probable that the course of the disease will be shortened and that the usual increase of the deformity will be avoided.

In cases in which there is marked deformity the operation is justifiable at times, in order to secure better respiratory and digestive action, as well as to improve the position of the spine. In these cases considerable relapse is to be expected, owing to the extensive destruction of the bones and the imperfect osseous repair which takes place in tubercular disease.

◆

A CASE OF KOLPITIS EMPHYSEMATOSA.[1]

BY JAMES M. JACKSON, M.D., AND JAMES H. WRIGHT M.D.,
From the Laboratory of the Massachusetts General Hospital.

THE following case of emphysema of the vagina has been of considerable interest to me, although in no way remarkable, inasmuch as it is the first case of the kind which I have seen in the living subject.

Mrs. C. M., aged forty-six, married, two children, last one eight years ago.

In September, 1897, that is, six months ago, patient was admitted to the Massachusetts General Hospital. Hysterectomy for multiple fibroids and double salpingotomy for pyosalpinx were successfully done, and the patient was discharged in four weeks in very good condition.

On December 28, 1897, that is, three months after operation, patient come to the Out-patient Department of the Massachusetts General Hospital, complaining of considerable pain in the region of the scar, leucorrhea and pain in the back. Examination showed some reddening of the mucous membrane of the cervix and vagina, and a thin, whitish secretion, slight in amount. Bimanual examination showed a rather large stump of the uterus adherent to abdominal incision. There was considerable tenderness on pressure over the stump, but otherwise the examination was negative. Hot vaginal douches and suppositories of boroglyceride were ordered.

On the 23d of January, 1898 (four weeks later), the examination showed a general roughening of the cervix and upper half of the vagina, as though covered with a fine papular eruption. The mucous membrane was dry, and in places felt like thin parchment. To the examining finger was imparted a crackling sensation which was very striking.

Through the speculum, the cervix and upper half of the vagina were seen to be somewhat injected and studded with what appeared to be numerous small vesicles, varying in size from a pin's-head to a split-pea. The membrane over these apparent vesicles was thin and distinctly pale in color. In the centre of some of the larger ones was a small black spot, evidently a little hemorrhage. A clear mucous secretion covered the vaginal wall, but no pus was present. On pricking one of the largest and most tense of these nodules with a very fine knife, a hissing sound was heard, which proved conclusively that gas or air had been confined in this nodule or cyst. The wall collapsed, but no fluid escaped. From some of the others a very small amount of perfectly clear, transparent fluid escaped with the gas.

I then asked Dr. J. H. Wright, pathologist to the hospital, to see the case with me. Cultures were taken from the secretion in these nodules, and a piece of the mucous membrane of the vagina, with nodules *in situ*, was dissected out for examination. Dr. Wright's report of his examination is as follows:

> Sections stained with hematoxylin and eosin.
>
> In the submucosa are a number of circular empty spaces, the largest about one milimetre in diameter. These spaces are lined by a layer of cells, of variable thickness, in places being thin and flat, in others thicker, and consisting of large, abnormal cells, often multinuclear, presenting the appearance of being flattened by pressure from within the spaces. Over one of the circular spaces, the epithelium is thin and atrophic.
>
> In addition to these, there are also present a number of irregular, slit-like spaces, of variable size, which are rather indefinitely lined by larger and smaller abnormal cells, many of which contain numerous nuclei.
>
> From a study of the sections, it is probable that the condition is one of abnormal growth of the endothelium of the lymph channels of the submucosa, together with a dilatation of the channels to form cystic cavities. The histological as well as the bacteriological examination gave no evidence of an infectious process.

As most of the larger blisters had been opened during the examination, nothing further was done in the way of treatment, except to wash out the vagina with corrosive sublimate solution, and to insert a wool tampon.

Two days later the vagina showed but very few small vesicles. These were pricked and a tampon inserted. On January 27th no trace of the former trouble could be found, and the vaginal mucous membrane appeared perfectly normal. There was still a slight amount of thin mucus in the vagina. There was at no time any complaint of heat or smarting in the vagina itself. As this disease is somewhat rare, it may not be out of place to give, in a few words, a general descripiion of the condition.

This disease was first described by Von Winckel, who gave to it the name of *Kalpohyperplasia cystica.* Later Zweifel, noting its resemblance to other emphysematous conditions, gave to it the name of *Kolpitis emphysematosa*, by which it is now universally known.

The disease is characterized by an eruption of gas-containing cysts in the vagina. It occurs with greater frequency in the pregnant than in the non-pregnant. Nothing is known of the etiology of the disease, but there is nothing to point to its being an acute inflammatory process. The only symptoms which have ever been noted are a smarting sensation high up in the vagina and a slight leucorrhea. The symptoms are so slight in character that the condition is often overlooked, and most of the cases have been discovered purely by accident. The process is, for the most part, confined to the upper two-thirds of the vagina and to the cervix. The nodules appear singly and in groups, varying in size from a pin's-head to a split-pea. They look like small vesicles or cysts. The mucous membrane covering them is pale and very thin, while the surrounding tissue is normal or slightly injected. The nodules contain gas, or gas and a small amount of serous fluid. The nature of these contents has not been studied, so far as I know.

It is noteworthy that in the specimen which we studied, there is *no* small-celled infiltration, which leads us to the conclusion that this particular case was not due to an acute inflammatory process. Also that the cultures were negative.

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[1] Read before the Obstetrical Society of Boston, March 15, 1898.

The peculiar feeling of dryness and crackling imparted to the examining finger is pathognomonic of the disease.

In regard to the pathology, Carl Ruge stated some years ago, that the gas was to be found in the spaces of the connective tissue. Eisenlohr believes it to be due to micro-organisms in the connective tissue. Another theory is that there is a marked dryness of the vagina, a gluing together of the minute folds of the vagina, thus sealing up a certain amount of fatty matter, a breaking down of this encapsulated material and the formation of gas. Chiari states that the gas is developed in the dilated channels of the lymphatic system, probably in the lymph capillaries.

Judging from the specimen which we have here, it is very evident that the gas is contained within a vessel of some sort; and this vessel, according to Dr. Wright, has the appearance of a lymphatic vessel. This precludes the possibility of its being one of the spaces in the connective tissue or a gluing together of the folds of the vagina. We have nothing new to add to the knowledge on this subject, except to substantiate what Chiari has said in regard to the pathology.

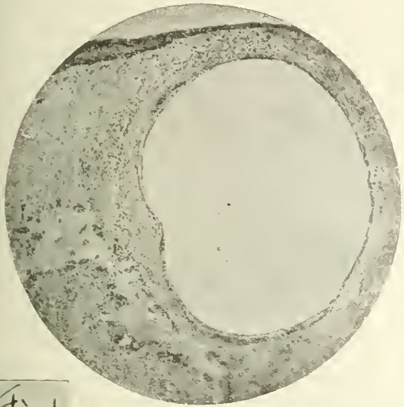

Fig 1.

Section through portion of wall of vagina, showing one of the cystic cavities immediately beneath the atrophied epithelial layer, and one of the irregular spaces lined with giant cells. Low magnifying power.

I had hoped that we might find in the cultures the anërobic bacillus of Welch, which would have cleared up the etiology beautifully, but my hopes were vain.

The course of the disease is short, and yields quickly to treatment, which consists in opening the nodules and applying tampons.

Since writing the above, a second case has turned up at autopsy at the Massachusetts General Hospital. She was a patient of Dr. John Homans, by whose kind permission I report the following:

Case II. A. B., forty-three years old, married eighteen years. Has had three abortions, last one three months ago. No cause for abortions known. No children.

Four years ago was told that she had a fibroid of uterus.

Examination at entrance, March 20, 1898, as follows: "Perineum intact. Os normal. Cervix normal in size and position. Fundus uteri much enlarged, and bimanually is felt to be irregular in form, slightly movable. Lateral cul-de-sacs impinged upon by a tumor. Mass felt posterior to uterus, and probably part of it."

On March 24, 1898, abdominal hysterectomy was performed by Dr. Homans. A large fibroid was removed, together with both tubes and ovaries, the cervix being left.

Her recovery was rapid, and on April 13th she was sent to the Convalescent Home at Waverley. Five days later she was sent back to the hospital, as she had suddenly become insane. As everything about the seat of operation was in perfectly good condition, she was transferred to the medical side, where she died, on April 23d, of broncho-pneumonia.

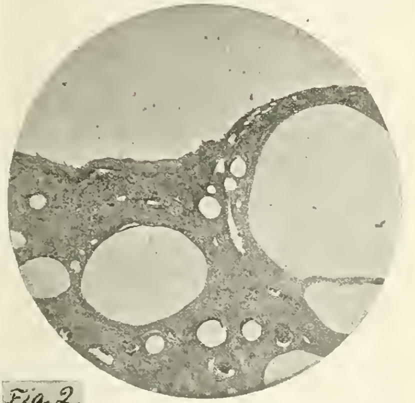

Fig. 2

Showing cystic spaces in tunica propria and submucosa Over the largest space the epithelial layer is atrophied.

The following is the report of the autopsy by Dr. Wright:

> At the autopsy, twenty hours post-mortem, the genital tract showed the following conditions: The ovaries, Fallopian tubes and the corpus uteri were lacking, the uterus being represented by a stump corresponding to the cervical portion of the organ. In the mucosa of the vagina, which was bathed in a dirty, grayish, rather thick fluid, were numerous, grayish, semi-translucent vesicles or cystic areas, sometimes slightly projecting. They were for the most part one or two milimetres in diameter. One of the larger, when ruptured by pressure, gave a faint report, as if containing gas. They were most numerous in the superior portion of the vagina and over the surface of the cervix uteri, becoming less numerous below. The mucosa of the inferior portion of the vagina also presented a black-red mottled appearance.
>
> Pieces of the vaginal wall and of the cervical portion of the uterus were hardened in Zenker's fluid, and sections prepared for histological examination. The sections showed numerous rounded, empty spaces, like small cysts, in the tunica propria and submucosa. They occurred singly and in groups, and varied in diameter up to about two mili-

metres. Contiguous spaces were sometimes separated from one another only by a thin septum of connective tissue. In some instances a larger space might be seen pushing upward the epithelial layer above it, which was more or less atrophied.

The margins of the spaces were sharply defined, and in some cases presented indications of being lined by thin endothelial cells. In other cases, this endothelial lining could not be made out. At the margin of a very few of the spaces a few flattened multinucleated, atypical cells were observed, which were regarded as of the same character as those seen in Case 1.

No evidence of a bacterial origin for the condition was obtained. As in the first case the spaces seemed to arise from the dilatation of lymph channels.

It will be seen that both cases followed abdominal hysterectomy, and the thought immediately suggests itself, may not this condition in some way be due to a blocking of the lymphatic system as a result of the operation? As to the formation of gas in these dilated lymph vessels, no further explanation can as yet be offered.

EARACHE: CAUSES, TREATMENT, RELATION OF THE EXANTHEMATA THERETO.[1]

BY GEO. L. RICHARDS, M.D., FALL RIVER, MASS.,
Otologist and Laryngologist to Fall River and Emergency Hospitals.

Who of us has not been called, many times it may be, to relieve, for child or adult, that most excruciating pain, an acute earache? Who of us has not felt himself or herself almost helpless in its presence, and wondered what he or she could do to relieve the pain, while the little sufferer moaned and tossed and cried, and seemed not a whit the better for all we were doing? Have we not seen the pain last for hours until finally, when child and attendants were well-nigh exhausted, nature has perforated the drum, the pain has ceased and the child has gone to sleep? Following this we have seen the ear discharge pus for a longer or shorter time, and the pain having ceased, the case has passed from our observation. Such being the facts, and the unsatisfactory nature of the treatment being generally recognized, I offer no apology for bringing to your notice to-night the subject of earache considered broadly as to its causes, and with especial reference to treatment and the relation of the exanthemata thereto. I include under the term earache those acute affections of the external canal, the drum and the tympanic cavity characterized by acute, more or less severe, pain in the ear.

(1) Otitis media externa, including furuncle therewith. This affection is characterized by swelling and pain in the external canal, radiating to and sometimes involving the drum membrane. The pain varies with the severity and extent of the inflammation, but is not as severe as in affections of the deeper parts. In furuncle the mouths of one or more glands become stopped up; there is localized swelling and great discomfort, sometimes great pain, though in the main it is discomfort rather than severe pain. In my experience this is more common among adults than in children. In the more diffuse form there is general swelling, and the whole canal may be closed. I will not consider the etiology but confine myself to the question, Given the condition, what can we do for its relief? If the inflammation has gone on to pus formation, we should incise and liberate the pus, remembering that the amount of pus is always small, and that relief often comes from the incision even when no pus is present. Before the inflammation has reached the pus stage two methods of treatment are applicable, both of which have been found very useful: gelatin bougies as originally introduced by Gruber, and local applications. A modified formula for the bougies is given farther on. The bougie is inserted into the swollen external canal, and is allowed to dissolve there; and good results follow.

For this affection I am in the habit, however, of using a simpler remedy which has the merit of being always easily obtained and of invariably giving relief, never doing any harm, and of being applicable at any stage of the inflammation. I refer to a five-per-cent. solution of carbolic acid in pure glycerin. The carbolic acid produces anesthesia and eases the pain, while the glycerin, on account of its affinity for water, rapidly removes the serum from the part, and the swelling, heat and tension subside. As the heat and tension are often the things most complained of, the relief afforded is very great. The carbol-glycerin is applied on a small wad of cotton so rolled as to go as deeply into the canal as possible, and changed every two to four hours. Once the patient has been shown how he can do this by the doctor, he will readily make the changes himself.

Suppose this does not wholly relieve, and it becomes necessary to incise the furuncle or any part of the swollen canal? Do not attempt to do it without an anesthetic unless you have a specially tractable patient, or the result will be unsatisfactory to both. The region is so tender that it is practically impossible for any one to hold still. Give a little chloroform or ether to primary anesthesia, and then with a suitable knife make an incision long enough and deep enough to go through all the tissue it is desired to open. The bleeding will doubtless be profuse, but will relieve rather than otherwise. Do not be disappointed if no pus comes; with an opening deep enough, the pus, if there is any in the vicinity, will find its way out. Apply the carbolic-acid-glycerin compound as before, and soon the patient is well.

(2) Earache due to acute trouble in the middle ear from whatever cause. This is most common in children, less so in adults. In the majority of instances it is due to extension of inflammation from the nose and naso-pharynx along the Eustachian tube to the middle ear. Hence the catarrhal troubles of childhood, enlarged tonsils, adenoids and the exanthemata are the most common causes. The intimate relationship between adenoid growths and ear trouble has been often pointed out. Seventy-four per cent. of Meyer's cases of adenoid growth had ear trouble; and it is the experience of every one paying any special attention to the matter that a very large proportion of the cases of running ears have these growths as a cause, or one of the causes. The close anatomical relationship between the adenoid growth and the mouth of the Eustachian tube is sufficient to account for this. Furthermore the adenoid, being a lymphoid structure, is much more swollen and prominent at some times than at others; hence it may complicate the case many times when it is not the prime cause.

As exciting causes, catching cold perhaps comes first and most prominent; then la grippe, measles, scarlet fever, chicken-pox, whooping cough, diphtheria, pneumonia, syphilis, tuberculosis, meningitis and disorders of the teeth, etc. In connection with all of this latter group of diseases it must not be forgotten that earache is among the possibilities, and may explain some pain not otherwise accounted for. I have recently had a very decided case of earache for which paracentesis was needed, occurring in the case of that ordinarily mild disease, chicken-pox.

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[1] Read before the New Bedford Medical Society, March 28, 1898.

The diagnosis is ordinarily easy; and yet I imagine a good many cases of earache in very young children are overlooked at the time, and only thought of when the presence of a running ear calls attention to that as a possible cause of the pain. Many cases of convulsions, extreme fretfulness, inability to sleep, refusal of food, symptoms simulating meningitis, perhaps called that, are nothing more or less than an earache in a child too young to tell where its pain is. Fortunately nature is kind, and in a few days makes an outlet somewhere, usually in the direction of least resistance; but nature, while a good physician, is a poor surgeon, and it is far better to make the diagnosis and pursue the appropriate treatment before perforation has taken place or the pus perchance made its way into the mastoid antrum or through the glenoid fossa. In the young child the diagnosis is often difficult; but the moaning cry of pain, the putting of the hand to the head, more or less fever, refusal of food, wincing when the ear or side of the head is touched, convulsions, perhaps unconsciousness, combined with inspection of the drum membrane will materially aid. In the older child the diagnosis becomes easy; then the child puts the hand to the ear and complains of the pain. I suppose there is no pain more severe than that of an acute earache. I have not yet forgotten the time when as a child I suffered from it for several hours. The agony was intense, and all measures for its relief seemed of no avail.

The minute pathology of the disease I do not now consider; suffice it to say, that there is an acute inflammation in a narrow, bony walled cavity. As the process goes on the lining membrane becomes congested, serous fluid is poured out, the Eustachian tube closes, and except the opening into the antrum there is no place for the products of inflammation to pass out. As a result there is a steadily increasing pressure on the foramen rotundum, foramen ovale and drum membrane; the latter becomes bulged outward, thickened, and it may be separated into its two layers, with fluid between them. If no relief comes, the fluid may later become purulent through the action of bacteria travelling along the Eustachian tube. If not absorbed or not drained through the tube, it forces its way through the distended and weakened drum membrane and discharges through the canal. Failing in this the mastoid may be involved and the more serious brain complications result. In the more acute forms there is no relief until the fluid vents itself; in other cases the continuing pressure seems sometimes to finally blunt the sensibilities of the tympanic nerves, and the pain diminishes before there is discharge or perforation, a sense of fulness with more or less loss of hearing, even to complete loss, being always present. Externally the drum membrane will appear bulged outward in degree dependent upon the stage of inflammation and quantity of fluid present. It may appear reddened and injected or the landmarks completely lost, the drum even presenting a macerated appearance with loose epidermal cells; this latter especially if various applications have been made previous to the inspection.

Here, then, is the clinical picture: inflammation with fluid formation in a small bony walled cavity, capable of extension to the important structures in the neighborhood, and with the ever-present danger of injury to the hearing, characterized by pain of a severe lancinating character. What is to be done in the way of treatment? How best prevent injury to the drum and delicate structures, and how best preserve the hearing from present and future damage? First, the pain must be relieved. That the efforts of physicians in this direction have not been always crowned with success is proven by the large number of remedies suggested by various authors. Even the distinguished Politzer, in the last edition of his text-book, suggests all of the following as appropriate remedies in acute otitis media (acute earache):

1. Acetate of morphia, 0 2 in olive oil 10, applied as drops to the affected ear.
2. Oil of hyoscyamus, 2½ drachms; aqueous extract opium, 12 grains; as ear drops.
3. Opium salve, externally to mastoid and along canal.
4. Olive oil and chloroform, equal parts as ear drops.
5. Aqueous extract of opium and water, equal parts, put in the ear.
6. 10 per cent. carbolized glycerin.
7. 5 per cent. cocain in the nose, so as to reach the Eustachian tube, opening and influencing the ear from this direction.
8. Warm poultices to the whole aural region.
9. Tincture opium and water in varying proportions, in the ear as drops.
10. Cover the whole head with hot, moist cloths.
11. Anodynes internally.
12. Leeches in front and behind the ear.

To these may be added the following taken from other sources:

Cocaine, 5–10 per cent. solution in the canal.
Cold about the ear, hot applications in the ear.
Covering the ear with dry cotton.
Hot water bottle.
Air douche, with Politzer bag; but this only when acute symptoms have subsided. If well borne it can be used, but if it causes pain it is contraindicated.

Dr. Whitney, of New Bedford, reports very good results from the application directly in the ear of a few drops of the following: olive oil, ten drachms; chloroform, one drachm. This, he says, does not hurt when first put in and quickly relieves. To be repeated as needed. From my own experience I have the following to suggest as having given fairly good results: tincture of opium, or more preferably the fluid extract, one ounce; with atropia, four grains; mix. An equal quantity of this added to an equal quantity of hot water and the external canal filled with this as hot as can be borne; the ear stoppered with a small pledget of cotton and the hot-water bottle applied to the ear.

The ordinary hypodermic tablet (morphia, $\frac{1}{6}$ of a grain; atropia, $\frac{1}{180}$ of a grain) dissolved in some hot water answers the same purpose, and has the advantage of being always at hand. Five-per-cent. carbolized glycerin used as for furuncle is often very efficacious, and has served me well, being continued after perforation has taken place or paracentesis has been done.

Of late I have been using some aural bougies, samples of which I show you. They are the aural bougies of Gruber modified by Wood, of Dublin, to which I have added from three to five per cent. of carbolic acid. They each contain three-sevenths of a grain of liquid extract of opium, one-fourteenth of a grain of cocaine and one-fourteenth of a grain of atropia in gelatoglycerin, to which is added the carbolic acid. The proportions of gelatine and glycerin are important, and should be such that the bougie when inserted into the ear readily dissolves. To effect this there should be no more gelatine than is necessary to hold the glycerin in shape. When made they are covered with lycopodium. To use, wash off the powder with a little warm water, stick the end of a pin or toothpick into one end and then slip into the ear. They are very slippery and can be inserted without causing the slightest pain. Stopper the ear with cotton and lay the child down with a lightly filled hot-water bottle over. The bougie soon dissolves and the anodyne effect will last for hours. Furthermore, the glycerin is distinctly curative in that it tends to draw out some serum from within and lessen the tension. A paracentesis may perhaps be prevented.

In connection with any of these external remedies I believe in giving, if there is any fever, from one-eighth to one-half a minim of a tincture of aconite hourly for a few doses, sufficient morphia or opium in some form to in a measure quiet the pain, and a saline cathartic. The pain is apt to be worse at night than in the day, and we must not deceive ourselves and think the attack is over because with the advent of day the patient seems better. Supposing that in spite of all our efforts that the pain still continues, what next? In other words, when is paracentesis to be done? In answer to this question I cannot do better than to quote from Hartmann, who says: "Paracentesis is not indicated in simple catarrh of the middle ear and in cases of moderate pain. On the other hand, whenever the drum membrane is decidedly bulged outward from the pressure of the accumulating secretion, and when this pressure and the continuing fever and pain threaten spontaneous perforation, then paracentesis is strongly indicated. Besides this, it is indicated whenever after the subsidence of the acute pain quite a degree of deafness remains, due to the nonabsorption of the retained secretion, the objective examination showing the presence of this secretion." I am sure it is better to do now and then a paracentesis when perhaps the case would have got along without it than to neglect to do one when it is indicated, even though it should happen, as has been claimed, that a serous inflammation is thereby converted into a purulent one through the entrance of germs along the canal. The operation, if done under ordinary antiseptic precautions, is devoid of any danger, and, if there is fluid, invariably relieves the pain. Also, whenever after the acute attack is over there is evidence of an accumulation of fluid in the tympanic cavity, it is better to remove it.

Two recent cases of mine will illustrate this point. A young girl, fourteen, delicate, severe earache several days, anodynes locally and internally. Some adenoids being present, these were removed. Examination of the drum at this time showed some fluid, but not a great deal, and when I saw her in the daytime there was seldom any pain. But nearly every night there was pain; and although I had at first thought that nature would absorb all of the fluid and that paracentesis would be unnecessary, I later concluded to puncture the drum. Some fluid was evacuated; the pain ceased entirely; and the hearing, which had been much impaired, was entirely restored.

Absorption seems to go on very slowly in the presence of much fluid. Remove the fluid, and resolution then goes on rapidly. The following case will illustrate this: A woman, forty years old, had an attack of acute otitis media. The pain subsided under the skilful treatment of her family physician. A month later, finding that she was still hard of hearing, she came to me. I found the tympanic cavity full of fluid, the landmarks lost, and the drum bulging very decidedly outward. I did a paracentesis, and quite a quantity of fluid came out. The opening promptly healed, but it was two or three weeks before complete restoration of the hearing took place. I think in this instance, that, if the case had been wholly left to nature, there would have been more or less permanent loss of hearing, due to the thickening of the articular surface of the ossicles resulting from long-continued contact with the inflammatory products.

Paracentesis often prevents a serous inflammation from becoming a purulent one, prevents adhesions and permanent damage to the ear. Long-continued suppuration is always productive of harm and is difficult to cure. In an acute case, if in doubt, perforate the drum. The wound heals only too quickly, while the perforation made by nature is a round one eroded on the tympanic surface and slow of healing; the cicatrix is thinner than the rest of the drum and often bound down by adhesions to the inner wall of the tympanum, resulting in a partial loss of its vibratory function. While I believe in conservative treatment, I think were paracentesis done oftener in acute cases that there would be fewer cases of long-continued suppurative ear disease. The operation is not difficult provided one is accustomed to the use of the forehead mirror and is familiar with the topography of the drum. A paracentesis needle, or very small knife, will answer. Have the patient anesthetized unless you are sure he will hold still. Give a few drops of chloroform or ether to primary anesthesia. Cocaine, even in strong solution, only partially takes away the pain. A person perfectly familiar with the operation and able to work quickly can do it without anesthesia other than cocaine, but one who does it but seldom should have the patient absolutely still. Be sure that your illumination is good and that you see just what you are doing; then perforate in the posterior inferior quadrant, parallel with the drum border, carrying the incision nearly to the floor of this quadrant. Be sure that the opening is large enough and that the drum is perforated, not pricked in its outer layer. Syringe the canal with warm antiseptic solution before the operation and stopper the canal with sublimate or iodoform gauze, afterwards replaced as often as soaked through, or gauze or cotton soaked in carbol-glycerin as before mentioned. Keep the wound open until the discharge ceases. If it is not, it may have to be reopened. This can be done with a fine probe or the Politzer air douche. In Politzer's clinic the air douche is used after every paracentesis, but I am in the habit of not using it until a subsequent visit, as a rule. The air then passes readily through the opening and the products of inflammation are blown out. If there is an earache coincident with a perforation, it may indicate that the opening is so small that the secretion does not have sufficient vent, and the paracentesis knife may be needed to enlarge the opening.

The after-treatment consists of daily syringing or wiping dry with cotton, the use of the air douche and the insufflation of a small quantity of aristol with stearate of zinc. This powder works admirably.

The consideration of the possible complications growing out of conditions of which earache is a symptom, or the principal symptom, is beyond the scope of this paper, as is also the consideration of the chronic purulent discharges which often follow acute conditions. A large share of the cases coming under the aurist's care result from lack of treatment or improper treatment of such conditions as I have described; and of all the causes mentioned there are none more productive of permanent damage than the exanthemata, and of these scarlet fever is far the most serious. The most obstinate cases of purulent disease of the ear, those attended with the greatest amount of permanent damage to the tympanic cavity and the function of hearing, occur in connection with, or as sequelæ of, scarlet fever. Too often it is overlooked or paid little attention to until the damage is too great to be more than partially remedied. In my experience, the worst cases of old suppurative ear disease with large perforations, or complete destruction of the drum and one or more ossicles, with foul discharge and considerable caries and granulation tissue, have had their origin in scarlet fever. Affecting as it does the throat and involving the Eustachian tube, there is every opportunity for the disease to invade the tympanic cavity and do much damage there. The same is true, though in much less degree, of measles and diphtheria. In all of these the possibility of injury to the ear should be borne in mind. Any pain which is referred to the ear should be investigated. If there is any deafness during the disease or during convalescence, the cause should be carefully sought for. Fluid in the tympanic cavity should be drained and any resulting discharge properly treated. No case of the exanthemata should be regarded as finished as long as there is any discharge from the ear.

I do not suppose any member of this Society has ever been guilty of telling a parent that the child would outgrow conditions such as I have referred to, although if the testimony of patients is reliable they are often so told. The outgrowing of diseases of this nature is a pernicious fallacy. The children never outgrow them. On the contrary, as the ear remains bathed in pus the pathologic process continues active, threatening all the time the general health and gradually destroying the hearing. When the individual seeks the help of the aurist, it is usually too late to do more than save the remnant of hearing and bring the active suppuration to a close; and even this is not always accomplished, as old adhesions remain. Let me urge upon you the necessity of looking carefully into the aural conditions present in your cases of the infectious diseases and of the exanthemata, especially in cases of scarlet fever, as scarlatinal deafness is much easier to prevent than to cure.

In searching for the causes of an earache the intimate relation between the nerve supply of the ear and the teeth must not be lost sight of, nor the clinical fact that some cases of earache are dependent on dental irritation. Conversely, toothache is sometimes relieved by remedies applied to the ear, especially those remedies containing chloroform. I have already referred to the grippe as a cause of earache. It is a very common cause, a large number of the acute serous inflammations having their origin in this disease. It is much less serious in its sequalæ than the ear troubles incident to the exanthemata, having less tendency to eventuate in prolonged suppuration. Here, however, the liability of the ear to trouble should be borne in mind.

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Clinical Department.

FRACTURE OF THE NOSE COMPLICATED BY A RHINOLITH.

BY TIMOTHY J. REARDON M.D., BOSTON.

Complications are the rule in fractured noses, and consist for the most part either of a separation of the cartilaginous septum, of fracture of the same causing various degrees of obstruction to nasal respiration, of hematoma of the septum, or of abscess of the septum either unilateral or bilateral.

The fracture may also be complicated by its extension into the orbita or by implication of the cribriform plate. Zuckerkandl reports an interesting case in this connection in which there was fracture of the nasal bones with a depressed fracture of the pars ossis nasalis frontis extending into the frontal sinus, and fracture of the ethmoid extending into the orbita and implicating the middle turbinate. The whole thing healed, though with more or less deformity.

Fracture of the processus nasalis of the superior maxilla is infrequent. Fracture of that process is interesting because it usually implicates the turbinates.

A case by Freytag illustrates this: A boy, ten years old, was struck by the clenched fist of another lad. The effect of the blow remained unnoticed for a few days by the boy's parents. Upon examination it was found that the part corresponding to the processus nasalis was occupied by a large swelling externally. Internally the apertura pyriformis was found to be tender and covered with pus. The latter was removed and beneath was a grayish-red mass. Attempts to extract this anteriorly failed; so it was pushed back into the pharynx and expelled by coughing. It proved to be a piece of the lower turbinate. After the lesion healed, very little of the turbinate was to be seen.

A case, reported by Watson, of late necrosis following a fracture, is of interest. Fifteen months after a fracture of the nose, the girl appeared with proptosis accompanied by a nodular swelling at the lower inner angle of the right orbit. She had a sero-purulent discharge from the corresponding side of the nose. A swelling inside the vestibule prevented internal examination. Vision was good and there was no diplopia. A small sequestrum was removed from the lower angle of the eye and the symptoms soon disappeared. I have been unable to find any case similar to the one I now present.

Mr. M., age twenty-eight, was seen by me, June 17, 1897. About noon of that day, while riding a bicycle, he had struck his nose against the temple of the pole rider of a tandem coming from the opposite direction. Both machines were moving rather slowly at the time. The patient immediately experienced considerable pain about the bridge of his nose: a profuse epistaxis began and continued until he was seen by me four and one-half hours later; it was then only moderately severe. Externally there was considerable swelling about the root of the nose and under both eyes. A fine crepitus could be felt caused probably by the air contained in the tissue. On deep pressure a distinct bony crepitus was to be felt; this was accompanied by pain. There was apparently no depression of the parts. On internal examination the septum was deviated to the left and almost occluded the left nostril, the turbinates on that side being in touch with the septum. On the right the passage was wide and when the blood was removed a grayish mass was visible lying close by the side of the lower turbinate. The middle turbinate appeared normal; the lower turbinate was reddened and excoriated. The agger nasi seemed to be normal and was not depressed, though there appeared to be slight bleeding from this point. The septum was movable at its juncture with the nasal bones but a fracture into it could not be definitely made out. No exposed bone could be felt in the region of the agger nasi.

The grayish mass on the right I attempted to remove, but it at first resisted all my efforts. A small piece, which I broke off, by its concentric formation and extreme brittleness showed the nature of the mass. After cocainization with a 10-per-cent. solution, the entire mass was rather easily removed.

It proved to be a rhinolith, round in shape, and on section, white in color; it was about one centimetre in diameter. Chemical examination showed it was made up of calcium phosphate, magnesium phosphate, calcium carbonate and considerable organic matter. It had as a nucleus the proverbial cherry-stone.

An excoriated, bleeding area marked the spot where the rhinolith had been situated. The bleeding soon ceased, and the area was dusted over with sozoidol powder. The removal of the rhinolith allowed the patient to breath freely through the right nostril. A plaster dressing was applied externally and a corrosive gauze tampon was placed in the left nostril to combat any tendency to deviation.

June 19th. Patient had suffered but little pain; eyes were discolored, but the emphysema had disappeared. No foul odor had been observed from either nostril. Tampon removed.

June 24th. Plaster removed. Marked thickening over the bridge. Discoloration had disappeared.

June 28th. Pain had wholly disappeared. Patient stated that external appearances were as good as ever.

July 20th. Catarrhal symptoms had wholly disappeared.

With regard to the symptoms caused by the presence of the rhinolith, the patient's history previous to the accident will prove of value. He stated that as long as he could remember he had suffered from "catarrh." The right nostril had always been obstructed, and he had always been sensible of a most offensive odor from his nose. The odor was noticeable to others also. All these symptoms disappeared with the removal of the cause; otherwise he had always enjoyed good health.

The fact that the septum was not broken by the traumatism is rather remarkable. It may be explained by the presence of the rhinolith on the right side, which acted as a buttress to the septum, crowding it to the left against the turbinates, which performed a like office on the left. This support given to the septum prevented its fracture by traumatism, and, also, any marked depression of the nasal bones.

When I first saw the grayish mass in the right nostril, I thought that it was probably a piece of necrosed bone and considered its most probable origin was from a necrosed luetic septum. While this did not prove to be true, and, while after a most thorough search I have not been able to find a single reported case of fracture of a nose with a septum necrosed by lues, yet it seems strange that such cases have not occurred; for such necrosis of the septum is common and, when it exists, the support normally given to the nasal bones by the septum must be greatly diminished and the liability to fracture correspondingly increased.

In all cases of fracture of the nose it is well to remember the possibility of the presence of foreign bodies; this and other complications should always be carefully searched for and treated as the case may demand.

REFERENCES.

Freytag. Monat. f. Ohrenheil., 1896, xxx, 217-224.
Zuckerkandl. Anat. der Nasenhöhle, Bd. ii.
Watson. Lancet, 1896, 1-972.

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Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

(Continued from No. 3, p. 67.)

THE PRINCIPLES WHICH GOVERN TREATMENT IN DISEASES AND DISORDERS OF THE HEART.

Acute Inflammatory Diseases of the Heart.

The general line of treatment in the vast majority of cases of acute inflammatory diseases of the heart is the same. It is necessary chiefly to consider the fundamental complaint of which the cardiac affection is in most cases a part, and this disease is, in the majority of cases, acute rheumatism. From the heart point of view and, indeed, from any point of view, all authorities seem now agreed that the right treatment of acute rheumatism is absolute rest in bed in woollen wrappings, a free relief of the bowels, and the administration of sodium salicylate in efficient doses, in combination with such alkaline remedies as the condition of the urine may suggest. The late Dr. Sibson showed that the difference between absolute and incomplete rest in the treatment of acute rheumatism was an exemption from heart complication of 71 per cent. as contrasted with 44 per cent. Few cases endure now more than five days' suffering under the salicylate treatment, and a treatment of the general disease thus successful can scarcely fail with due care and foresight to prove in some degree preventive of cardiac lesions, which are true manifestations of the rheumatic poison, usually of somewhat later appearance than the joint phenomena.

The current view that salicylates do not lessen the liability to cardiac lesions is founded on the fallacy that cases early relieved of pain and fever by salicylates are often allowed to get up too soon. If therefore on the relief of pain and reduction of temperature the patient be regarded as convalescent, and be allowed out of bed, he assumes the position of one with acute rheumatism still upon him treated with incomplete rest, and so becomes doubly liable to cardiac manifestations.

Absolute recumbency is very important in acute heart affections, because although the heart cannot be stilled its burdens and restlessness can be lightened. The mere difference between lying down and standing up to the healthy heart is 10 beats a minute or 600 beats an hour. It is greater in a heart irritated by acute disease.

There are but few special remedies that may be employed for the heart condition. The group of heart medicines is not, as a rule, applicable until the case has fully emerged out from the general disease, and has become a single organ malady. It may be said, generally speaking, that digitalis and its class are useless in acute inflammatory heart affections; that aconite, with certain exceptions, is harmful; mercury has long been abandoned with venesection and other violent measures. There are two forms of cardiac lesion, however, which may frequently be treated by moderate doses of opium with great advantage. They are pericarditis and myocarditis, conditions often conjoined.

Endocarditis in rheumatic fever affects the mitral valve most commonly, the aortic orifice much less frequently. It is somewhat inadequately urged that sodium salicylate does not influence heart affections in rheumatic fever. This view is founded on a double misconception. After the third or fourth week, the salicylates may be replaced by quinine and arsenic as remedies better suited to combat this phase of the malady.

The infrequency with which aortic regurgitation and mitral stenosis are met with in primary cases of rheumatic fever cannot fail to have impressed clinical observers. Dr. Sibson points out that of 24 cases of acute rheumatism with primary endocarditis treated by a rigid system of rest, only one gave evidence of aortic as well as mitral disease, whereas in 19 instances out of 127, or one in 6.7 cases not so rigidly treated in this respect, aortic regurgitation was present, but even Sibson did not point the lesson for he only insisted upon the importance of maintaining rest for "a period of several days after the complete disappearance of the local inflammation of the joints."

The exigencies of hospital routine, the pressure of perhaps more urgent cases, and the natural anxiety of the patients themselves to get home, result in the discharge of rheumatic fever cases even with heart comcomplications within a month or five weeks, when perhaps another month's rest would add many years to their lives. A very bad lesson is thus taught to students. In private practice, in dealing with children and young people especially, it is not difficult to secure an adequate period of rest. At least two months after an attack of rheumatism involving the heart, and in some severe cases from four to six months is necessary to allow of a complete subsidence of inflammatory change and a restoration of due resisting power in the weakened valve. A minute attention to the temperature chart and pulse and careful investigation of the cardiac sounds will be the chief guides in regulating the rest treatment of these cases. For a further ill-defined period of months very gradual and careful return to an amount of activity suitable to the case must be permitted. Under this system of management very striking results, in many instances complete cure, will be obtained, especially in children and young people.

The cardiac group of drugs is of little value in the early stages of heart disease. The object is to promote resolution and the healing process. The primary object is not at this stage to increase heart power which would indeed only antagonize the desire to ease valve function. As the acute rheumatic features fade, general anemia and cardiac fatigue often present themselves for consideration in treatment, and such drugs as arsenic, strychnine and iron are strongly indicated.

At this stage, particularly in pericardial and in some endocardial cases, the employment of moderate doses of iodide, for example, a five-grain dose of combined iodides of soda, ammonia and potash three times a day seem of some advantage in helping the resolution of the inflammatory thickenings. A due regard should, however, be paid to the toleration of the iodide, and it should in all cases be combined with some tonic, such as strychnine, arsenic or iron. At the end of the pyrexial interval arises the question of the usefulness of digitalis. A quickened and irregular rhythm, one or both arising from want of power to deal with a valve defect, is the particular indication for the employment of digitalis. The drug is of little, if any, use and may do harm if the quickened action be the result of inflammatory irritation. Therefore, where the irregularity is attributable to pericarditis or myocarditis the drug is useless; where active changes are going on in the valves digitalis should be withheld unless positively demanded by a failing ventricle. In the selection of change of air for convalescent cases of endocarditis the first consideration is freedom from wetness of subsoil. Perfect sanitation is necessary, and the susceptibility of the recently inflammed valves should be borne in mind.

In cases in which the lesions are grave, the progress tedious, the necessity for rest prolonged, general nutrition may be maintained by judicious massage, such as to stimulate muscle nutrition and facilitate venous circulation. In this way they become better prepared for the gentler forms of exercise on first getting up.

Treatment of Valvular Disease.

The question here to be considered is whether the case is a suitable one for the use of remedies of the digitalis order; if so, how far they should be pushed, to what extent complete rest is required or what degree and kind of exercise will be beneficial; the general state of the patient, his nervous system, etc. From clinical observation it appears that in medicinal doses digitalis affects the heart before the vessels and so the proportionate conditions of its effective and beneficial action are secured in suitable cases. The question for treatment is whether the character of the pulse is normal to the lesion found, or does it vary from what it ought to be under the circumstances, and to what is the variation due. Looked at in this light it is perceived that in the therapeutics of cardiac affections, after the acute stage, the heart is treated, not the valve defect; while in the treatment of cardiac affections in the acute stage the measures are not so much directed to the heart as to the affected valves or pericardium, and in this latter section of acute cardiac affections there is but little use for drugs of the digitalis order and in many cases their employment should be positively avoided.

Digitalis in Aortic Disease.

There has been much dispute as to whether digitalis (the whole therapeutic group is considered in speaking of digitalis) should be used in the treatment of aortic regurgitation. While there is a steady, regular pulse, with a strong, abrupt beat, rapid subsidence and low tension of artery, digitalis is not wanted and a powerful drug when there is no indication for it cannot but be harmful.

In all cases of aortic regurgitation, however, which are not interrupted in mid career by accidents in the way of functional disturbances of reflex origin, vasomotor angina or sudden or gradual overstrain, the time comes when the employment of digitalis is of the greatest value. The indications for its use are the symptoms of commencing failure of the left ventricle fully to respond to the heavy call upon it, provided that failure be under conditions otherwise normal to the disease. It may be, for instance, that the ventricle is temporarily overburdened by the results of some nervous, dyspeptic or gouty storm reflected upon the small vessels, and causing a measure of high tension to supervene upon that relaxed condition of the arterial system which is normal to aortic regurgitation. Under the conditions of high arterial tension thus induced, it would be very faulty practice to give digitalis; obviously a mercurial and saline treatment, or such other treatment as may specially meet the cause of the increased arterial resistance is the first measure, in combination with a little extra quietude and to be followed by a tonic calculated to restore the fatigued heart. The one thing to be looked to in aortic regurgitation is the maintenance of heart power, and any sign of overstruggle is rather to be met by measures calculated to diminish peripheral resistance:

(1) Irregularity in the heart's action.

(2) A want of precision and sharpness in the character of the pulse.

(3) Increased displacement of the apex beat to the left and extended impulse upwards.

(4) The occurrence of irregular smaller beats as marked in the pulse and appreciated at the heart.

(5) The supervention of a soft systolic *bruit* over the mitral area.

(6) Extension of cardiac dulness to the right.

(7) The almost complete replacement of the normal, regular, strong, slow, collapsing pulse and simple hypertrophic heart's action normal to aortic regurgitation, by a rapid heart's action, irregular in force and frequency, with a corresponding small pulse having the character of mitral rather than of aortic disease.

Such are in gradation the ingravescent signs of ventricle failure in aortic regurgitant disease, and the increasingly imperative indications for the employment of digitalis in its treatment.

The maintenance of strict recumbency is of course essential in grave cases and with a suitable dietary the heart soon responds to a steady daily administration of from thirty to ninety or more minims of tincture of digitalis, or an equivalent preparation with proper adjunct in the form of an occasional mercurial and saline. Patients with heart failure in aortic regurgitation are thus again and again restored by the action of digitalis.

In aortic stenosis, as soon as the normal pulse of this affection — a small, rather slow and regular pulse — becomes replaced by irregularity and frequency, accompanied by the usual signs of failing compensation, digitalis is needed. So long as the heart is beating quietly and regularly nothing but harm can come from the use of digitalis; with irregularity and disorder nothing but good, provided it be carefully watched and mitigated with returning regularity.

(To be continued.)

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

Meeting of the Section on the Practice of Medicine, Denver, June 7–10, 1898.

(Continued from No. 3, p. 70.)

THE INFLUENCE OF SUNLIGHT ON TUBERCULOUS SPUTUM IN DENVER; A STUDY AS TO THE CAUSE OF THE GREAT DEGREE OF IMMUNITY AGAINST TUBERCULOSIS ENJOYED BY THOSE LIVING IN HIGH ALTITUDES.

Drs. William C. Mitchell and H. C. Crouch, of Denver, presented a paper on this subject, which was read by the former.

Both the absolute and the relative moisture is low in high altitudes, and this together with the lessened atmospheric pressure and almost constant winds greatly facilitates evaporation. Extremely favorable conditions are thus created for the abstraction of moisture by the atmosphere from whatever substances it comes in contact with. The moist surface of the lungs must suffer considerable loss of moisture; and it is this battle for moisture compensation that we believe to be one of the factors by no means the least important in granting such a large measure of immunity against tuberculosis here, or in arresting or retarding such processes in their incipiency. The tubercle bacilli grows but poorly, if at all, on media deficient in moisture; and while it scarcely seems possible that enough moisture could be abstracted to leave the alveolar linings too dry to offer a suitable nidus for the bacilli, yet it is not improbable that this constant and rapid pulmonary evaporation creates conditions extremely unfavorable to its development.

Increased atmospheric pressure causes the blood to recede from the capillaries of the skin and mucous membranes, thus producing anemia of these parts. The diminished pressure of high altitudes causes greater dilatation of the capillaries, with a resulting mechanical hyperemia. The mucous-membranes are often ruptured, and we may have hemorrhages from the nose, mouth or lungs. The tympanum is bulged outward, the respiratory and cardiac movements are quickened, and muscular movements are facilitated. In short, we have the condition described by adventurous mountain climbers as *mal de montagne*.

There are two conditions which militate against the spread of tuberculosis in high altitudes. (1) The powerful influence of the solar rays acting through a thin atmosphere rapidly destroys the virulence of exposed tuberculous matter. (2) The vital functions are so operated upon by the various meteorological phenomena that they are especially fortified against the invasion of the tubercle bacilli. Our experiments seem to demonstrate clearly that the immunity does not proceed from the first of these theories, and that by every logical right it may be attributed to the second proposition.

THE COURSE AND MANAGEMENT OF COMPLICATING MYOCARDITIS.

Dr. Louis Faugeres Bishop, of New York, read a paper with this title.

As diseases and conditions are unconsciously classified in the course of the practice of medicine, ideas develop which are not always easy to formulate into exact scientific observations. One of these impressions is that debility following severe disease is due to some more definite underlying condition than is generally formulated; an exhausted and deteriorated nervous system being insufficient to account for the condition. Attention is called to the heart muscle; and clinical observation, confirmed by pathological observation, has led to the belief that complicating myocarditis is an important factor in many conditions. In acute and wasting diseases of every nature there comes a time when it seems evident that the heart has participated in the debility and degeneration visible in the other tissues of the body. In milder cases there may be simply a weakness of contraction, while in the more severe the signs are indicative of myocarditis, namely, irregularity in force and rhythm.

We may conceive that the condition is an inflammatory state of the myocardium following acute disease, occurring in the course of chronic wasting disease, or beginning as an extension of inflammation from an endocarditis, or a pericarditis. Conditions secondary to diseases of the coronary arteries or excessive hypertrophy will not be considered. Our object does not demand an extended reference to pathology. A form may sometimes originate in an acute interstitial myocarditis, but more frequently it is a parenchymatous degeneration. Dr. Osler remarks that it is probably due to toxic agents and is not in direct relation to high temperature.

All are familiar with the fact that the heart of a patient who has died from acute prolonged disease is of a pale, grayish color, while that of a person killed suddenly is firm and has a healthy red color. In many diseases there is probably a low grade of inflammation, which is nothing more than a slight degeneration.

Cases are often diagnosed as general debility or disturbed cardiac enervation. It is important to recognize the real condition or else treatment may be harmful. Stimulants directed to the heart are certainly contraindicated. Stimulants should be avoided in cases of myocarditis following severe illness.

The proper care of the heart is especially important in those cases of acute infectious disease in which valve lesion has been developed by complicating endocarditis. In severe endocarditis myocarditis also probably exists and the heart must not only gain its normal power but must do greater work to make up for the lesion in the valve. These patients should follow a long and strict regimen, avoiding indiscretions in diet, sudden exertion and dissipation of all kinds.

The treatment of degeneration of the heart fibre is a difficult matter, for often by the time we can say definitely that such a process is going on it is too late to accomplish much. The hopeful cases are those of complicating myocarditis accompanying acute disease.

One of the chief dangers of this condition is overexertion, causing acute dilatation, from which it is not easy to recover. Exercise taken to improve the general bodily condition and that of the heart in particular should be light, slow and systematic. Food should be concentrated so that it is administered in small volume, leading to an easy performance of the functions of the stomach without tendency to distention, which would embarrass the function of the heart and lung. Much latitude as to the variety of food may be permitted so long as the principle of small volume is adhered to. The use of alcohol in cardiac affections without its abuse is very difficult. Probably the use of a small quantity with meals is not harmful. The use of tea and coffee must be a matter of individual experiment, but the extreme frequency of cardiac symptoms produced in persons with normal hearts by tea, and the fact that both tea and coffee are cardiac stimulants should influence us to take the stand that all cardiac drugs should be under the control of the physician. The use of tobacco should be discontinued.

The patient who convalesces from an acute disease without suffering from degeneration of the heart muscle regains health and strength rapidly; the pulse becomes strong; the color returns and the patient is soon in good health. If there is a complicating myocarditis, the patient lingers along in a state of semi-invalidism. The disease from which he originally suffered has disappeared, and there is apparently no reason why he should not recover health and strength, but the heart remains weak until special measures have been employed to restore its integrity. This chronic complicating myocarditis explains symptoms so often observed after diphtheria, grippe, scarlet fever, and other diseases characterized by a violent infection.

THE DIFFERENTIATION OF CARDIAC INCOMPETENCY OF INTRINSIC HEART DISEASE AND OF CHRONIC NEPHRITIS.

Dr. Frank Billings, of Chicago, read a paper with this title.

He enumerated certain phenomena common to both of these conditions. Certain phenomena, although common in some cases to both, are more often the result of a primary heart or kidney lesion alone, and these signs are of some aid in a differential diagnosis.

If the urine, even though scant, shows a relatively low specific gravity, with diminished total solids, lessened urea, much albumin and casts of all varieties; if the artificial fibrosis is marked and the pulse full and sustained, or without arterial thickening if the pulse is sustained; if the dropsical effusion contain urea in considerable amount; if there is a tendency to inflammation of serous surfaces, especially pericarditis and pleuritis; if there is a tendency to persistent morning nausea and vomiting of stringy mucus; if there is a tendency to periodic diarrhea; if there is much headache, especially frontal and occipital; if there is a tendency to mental unrest and excitement at one time and to somnolence and coma at another; if cerebral hemorrhage occur; if the dyspnea of exertion become of the Cheyne-Stokes type; if there is severe epigastric pain; if the eye shows the changes common to albuminuria, and if the patient present a pale, waxy, puffy face and heavy expression and anemia, the diagnosis is in favor of nephritis.

If there is a history of previous disease in which endocarditis may occur; if the heart shows physical signs of valvular disease, with characteristic murmurs; if there is an irregular heart action, persistent in character; if the pulse is weak and not sustained, with or without arterial fibrosis; if the dyspnea of exertion is attended with cyanosis: if there is a normal amount of red cells and hemoglobin or only a moderate degree of anemia; if the dropsical effusion begins in the lower extremity, appearing during the day, is rich in albumin and contains no urea; if there is much enlargement of the liver and tenderness of the left lobe; if the urine is scant, of high specific gravity, with much deposit, little or no albumin, high percentage of urea, although the total amount of urea in twenty-four hours is deficient, few casts slightly hyaline or finely granular; if little or no headache and no eye changes, and if venous thrombosis or embolism occur — the diagnosis is in favor of intrinsic heart disease.

It is not difficult to recognize an incompetent heart. The dyspnea of exertion, sense of post-sternal weight and constriction of the chest, cough upon exertion and on assuming the recumbent position, enlarged liver with tenderness, and pain or a feeling of weight in the epigastrium, the indigestion of portal congestion, scant urine, edema of the feet, or all these symptoms much aggravated until constant dyspnea with orthopnea, general anasarca, excessive physical weakness, marked pallor and cyanosis give proof of cardiac weakness. The local signs of valvular weakness may be absent or present. Cardiac enlargement with dilatation of the chambers of the heart is usually present and may be recognized.

When due to intrinsic heart disease, a valvular lesion, or some other cause of dilatation and weakness of the heart muscle, is present. In chronic nephritis, cardio-vascular changes occur, especially in the form known as diffuse interstitial nephritis. In the latter stages of chronic nephritis the heart may become so dilated as to be incompetent and the symptoms above enumerated may appear. The urinary findings may plainly indicate the primary nephritis. However, in many cases the differentiation cannot be easily made, and the diagnosis may be doubtful until after death.

Dr. West, of Galveston, called attention to the therapeutical test in determining which condition was the primary disease.

Dr. Bond, of Indiana, said that arterio-sclerosis was an important factor in both diseases; he thought this condition was usually present in both diseases.

Dr. E. S. Davis, Jr., of Chicago, read a paper on

DIABETIC GANGRENE.

Of the three cases detailed by Dr. Davis two typified the milder forms of spontaneous gangrene in diabetes. The successive invasion of different toes in one case was noteworthy. The diminution and disappearance of glycosuria in these cases, while mumification and spontaneous amputation of the toes was progressing, was interesting. A similar disappearance of glycosuria had been observed where tuberculosis of the lungs was present. Both cases were upon diabetic treatment, consisting in regulation of the diet, the use of arsenical preparations and at times opiates.

Of the three cases enumerated one was a case of *mal perforant*, which is an occasional complication of diabetes. The association is no more accidental than that of diabetes and gangrene. Diabetic gangrene occurs more often in the legs and feet than elsewhere.

Gangrene occurring in the course of diabetes associated with or superimposed upon inflammation is undoubtedly chiefly due to the low vitality of the tissues in diabetics and the consequent ease with which putrefaction takes place. In this way we may account for the frequency of gangrene of the lungs in tubercular patients having diabetes. The cause of spontaneous gangrene not preceded by visible wounds or infection is more interesting. Neuritis and atheroma have both been given as causes of spontaneous gangrene in diabetics. Both lesions frequently accompany the disease. Godlee gives two varieties of spontaneous diabetic gangrene; one due to neuritis, for which he advises operation close to the point of neurosis; and one due to atheroma, for which he advises amputation at the knee or above. According to Heidenhain, spontaneous gangrene in diabetics is pathologically identical with senile gangrene. He notes the frequent occurrence, even in early adult life, of arterio-sclerosis in diabetics. Hunt says the areas of gangrene in diabetes are less well defined than in senile gangrene. Surgeons are not inclined to operate upon this class of patients on account of their susceptibility to infection. Recent experiments show, however, that amputations can be made with good success if sufficient care is taken to avoid infection. Heidenhain[4] recommends in gangrene of the toes that we wait until a line of demarcation has formed, and if there is no evidence of general infection the dead tissue may be allowed to separate spontaneously. If the sole or dorsum of the foot is involved, the leg should be amputated at the knee or above. The speaker thought that amputation of the toe after a line of demarcation had developed was preferable to the tedium and pain of spontaneous separation.

Great care should be taken to remove sloughing tissue, and to limit putrefaction by the free use of antiseptics.

THE USE OF IRON AND OPIUM IN BRIGHT'S DISEASE.

Dr. James Tyson, of Philadelphia, read a paper with this title.

While speaking of the treatment of chronic interstitial nephritis in 1880, the speaker had stated that iron was indispensable and might be given in the form of the acetate or of Basham's mixture. Since that time he had changed his opinion, and thought that in many cases the iron had done considerable mischief in Bright's disease. Not every case of Bright's disease is anemic, and iron has no specific curative effect and is clearly not indicated in non-anemic cases. It is harmful, as it checks the secretions and eliminations already restricted by a diminished function of the kidneys. It may be laid down as a rule with scarcely any exceptions, that iron is not indicated and should not be given in acute Bright's disease.

Iron is contraindicated in chronic interstitial nephritis. Iron is more promptly and dangerously harmful in this than in any other form of Bright's disease.

Iron is best borne in chronic parenchymatous nephritis, especially as this form is more likely to be associated with anemia. Even here doses are given in too large amounts. If iron appears in the feces, this unabsorbed portion is useless, and this portion acts as an astringent and causes constipation.

He did not think that Basham's mixture acted as a diuretic except from the amount of water that it contained.

As to the use of opium in this disease, he had seen fatal uremia produced by a couple of spoonfuls of paregoric. Opium was certainly contraindicated in chronic interstitial nephritis. In this form he had seen many cases launched into their last sleep, and the danger lies in those whom we do not suspect to have the disease. He thought it important to always examine the patient's urine before administering opium. The greater the destruction of kidney the greater the danger from the use of opium.

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[4] Deut. med. Woch., 1891.

The treatment of puerperal convulsions by the hypodermic injection of morphia is justifiable, because most of the cases are of the acute form; even here caution should be used.

We should be certain that cases requiring the use of morphine are not complicated with chronic Bright's disease.

Dr. West, of Galveston, Tex., thought that iron was of use in acute Bright's disease. He was of the opinion that in uremic convulsions many lives could be saved by the heroic administration of morphia.

Dr. Stocton, of Buffalo, thought that hypodermics of morphine had saved many lives when all other remedies had failed. He did not agree with the reader of the paper in regard to the use of iron, but thought that small doses were beneficial, large ones not so much so, as less was absorbed.

Dr. Brown, of Cincinnati, thought that both iron and opium were dangerous in any form of Bright's disease.

Dr. J. M. Anders, of Philadelphia, presented a paper on

RARE CASES OF ARYTHMIA.

He concluded by stating the most interesting points embodied in the cases reported:

(1) The reduplication of both first and second sounds (double reduplication) in the first two cases — one of tobacco poisoning and the other of exophthalmic goitre.

(2) The occurrence of a typical *pulsus bisferiens* n case one, dependent upon the toxic effects of obacco, in the absence of combined aortic regurgitaion and stenosis.

(3) The presence of a cyclical increase in the rapidity of the movement of the heart, followed regularly by a brief pause; and the striking mechanical effect of the respiratory function upon this peculiar variety of arythmia.

(4) The temporary production of special murmurs during the inspiratory element of the respiration.

(5) That all the cases developed in subjects in whom previously existing valvular lesions of the eart, so far as determinable, were absent.

Dr. Charles S. Bond, of Richmond, Ind., read a aper entitled

CONSIDERATION OF FOUR CASES OF EPILEPSY, WITH REFERENCE TO THE CAUSE.

Drs. Stocton, Lockard, Tyson, Jones, Anders, nd **Robinson** discussed the paper.

Dr. Henry Sewell, of Denver, described

THE CLINICAL RELATIONS OF THE PAPILLARY MUSCLES.

The normal heart sounds, more or less frequently nd more or less distinctly, become doubled, or reduplicated. In an article now appearing in the *American Journal of the Medical Sciences*, I have ied to show that the reduplication of the second sound at the base of the heart is due to a synchronous osure of the aortic and pulmonary semilunar valves, nd that such reduplication at the end of inspiration is perfectly normal phenomenon. The explanation of e reduplication of the first sound offers much more fficulty. Without discussing the views that have been put forward to explain this phenomenon, I will venture to enter at once upon a statement of concluons that have gradually matured from my own clinical observations. Most, if not all, reduplications of the first sound of the heart, as well as certain sounds occurring in pathological conditions, can be readily explained as the result of valve tension produced by contraction of the papillary muscles occurring at some abnormal phase of the cardiac circle. Physiological experiments have made it clear that the *musculi papillares* are essentially independent of the muscle of the ventricular wall. It is also practically proven that the former are particularly subject to fatigue. It is also probable that the normal stimulus to the contraction of the papillares is found in mechanical tension imparted to them through sudden lifting of the auriculo-ventricular valve. Overstrain of the heart, however slight its degree, might, for the foregoing reasons, be expected to induce fatigue in the papillares and consequent lengthening of their "latent period of contraction." In such an event the valve sound produced by contraction of these muscles might be expected to lag behind the beginning of the systolic sound and thus become perceptibly separate, giving the impression of "reduplication."

Again it is easy to conceive that either the right or the left side of the heart might be independently overstrained and the reduplication consequently limited to the corresponding side. These anticipations are abundantly realized in clinical observation, and we find in this study a means of detecting and locating cardiac overstrain far in advance of its clinical symptoms. Time cannot now be given to description of the methods for determining where within the heart the chief strain is falling. Suffice it to say that overstrain on the right side of the heart is contemporaneous with abnormal elevation of venous blood pressure. I have found the signs of it especially marked in cases of pulmonary obstruction, as emphysema, pneumothorax, and in lithemia. Reduplications limited to the left side of the heart are found, especially in elevation of aortic blood pressure. Therefore they occur in the normal heart as a result of exercise; they occur in arterio-sclerosis and in forms of Bright's disease, etc. Such reduplications of the first sound confined to the left side of the heart are apt to gradually disappear when the patient assumes the recumbent position, being replaced by a single sound which is accompanied by a systolic murmur. It is impossible here to discuss the significance of this murmur, but I have presumed to call it a functional or physiological murmur.

When overstrain of either side of the heart has proceeded to a degree sufficient to produce morbid symptoms, it is very apt to be manifested by the addition of a new sound to the cardiac rhythm which is commonly erroneously known as the "reduplicated second sound." It immediately follows the normal second sound, and therefore falls at the beginning of the diastolic pause. A satisfactory explanation of the origin of this added sound is the following: When either side of the heart is overstrained, especially when this condition preponderates in the auricle, at the beginning of ventricular diastole the overstretched auricle reacts by its own elasticity upon the blood within it and sends a strong stream into the ventricle. This current sweeps back under the auriculo-ventricular valves, makes them tense and exerts a sudden pull on the papillary muscles. These muscles reply to the stimulus by a contraction which sets the valves vibrating with sufficient intensity to give a sound. As cardiac overstrain continues to increase the papillary fatigue, their latent period is lengthened and the added sound may be gradually moved through the diastolic pause from immediately behind the second to a position just before the first sound. This change of interval, with corresponding variations in intensity, between the elements of the triple sound gives rise to the well-known "gallop rhythm." The gallop rhythm may involve either one or both sides of the heart. When it is bilateral, the rhythm may be made to disappear from the right side when the patient holds the breath. Further elaboration of this subject and the narration of cases must be deferred for a fuller report.

Dr. J. M. Anders, of Philadelphia, said that reduplication of the heart-sounds may be due to a splitting up of either sound, but more especially to the splitting up of the second sound. He had recently seen cases that belonged to this category with presystolic thrill and murmur; additionally there was evidence of a marked hysteria. It was important and practical to discriminate between such cases and those due to valvular lesions; in this discrimination one should lay particular stress upon the neurotic condition of the patient, and also note the absence of such etiological factors as rheumatism, etc.

Dr. N. S. Davis, of Chicago, doubted if these irregular contractions of the papillary muscles would explain all cases of reduplication; for instance, a reduplication is heard at the base of the heart, and the explanation is that it is caused by a distention or overdistention of the aorta and high arterial tension upon the right or the left side; as a result the heart is rapid, and there is a closure of the valves more upon one than upon the other side.

(To be continued.)

Recent Literature.

A Text-Book of Practical Therapeutics. With especial reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, etc. With special chapters by Drs. George E. de Schweinitz, Edward Martin and Barton C. Hirst. Sixth edition, thoroughly revised and largely rewritten. In one octavo volume of 756 pages. Philadelphia and New York: Lea Brothers & Co. 1897.

Circumstances have delayed a notice of this excellent and thoroughly practical work on therapeutics. Its popularity is everywhere recognized, as is testified by the publication of six editions in seven years. It presents a concise and useful statement of the properties, physiological action and therapeutics of the remedies which experience has shown to be valuable or of some value. The alphabetical arrangement facilitates ready reference to the desired drug, and to overcome, so far as may be, the disadvantage that is a necessary part of this practical system, three or four pages in the beginning of the volume are given up to a list of the important drugs placed in groups, each member of the group standing in order of its value. The consideration of foods for the sick is confined to a few pages; as this is a subject of the first importance, greater elaboration would be desirable. A large part of the book is devoted to the treatment of diseases and in this practitioners will find many suggestive hints.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College. Vol. IV, with illustrations. Philadelphia and New York: Lea Brothers & Co. 1897.

The fourth volume of this excellent System of Practical Therapeutics supplements those published in 1891 and 1892, and gives the progress made in treatment during recent years. Many of the subjects are less fully considered than in the previous volumes, but are discussed from the standpoint of recent advances and not with a view to presenting the subject completely. Among a number of excellent articles may be mentioned "New Facts and Methods in the Treatment of Diphtheria," by Dr. W. H. Park; "The Modern Treatment of Diseases or the Skin," by Prof. Henry W. Stelwagon; "Diseases of the Blood," by Dr. Ralph Stockman; and "Diseases of the Heart," by Dr. Frederick P. Henry.

The character of this System of Therapeutics is so widely known that a full discussion of its great practical usefulness is superfluous. Those who possess the earlier volumes will wish to add the last.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M.D., Late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Medicine in the Cornell University Medical College, New York. In four imperial octavo volumes. Vol. IV. — Diseases of the Nervous System and Mind; Vasomotor and Trophic Disorders; Diseases of the Muscles; Osteomalacia; Rachitis; Rheumatism; Arthritis; Gout; Lithemia; Obesity; Scurvy; Addison's Disease. 1099 pages, 95 engravings and 8 full-page plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1898.

This volume completes this American System of Practical Medicine. There are no less than twenty-four contributors to this volume, all well-known names of teachers in medical schools in the large medical centres, or of physicians attached to important hospitals. Four-fifths of the volume are taken up by articles on diseases of the nervous system and mind; the rest by articles on diseases of the muscles, and on various miscellaneous diseases detailed in the title.

This is one of the most important volumes of the series, and in it the subscriber becomes possessed of a very complete and up-to-date treatise on diseases of the nervous system.

The Genesis and Dissolution of the Faculty of Speech: A Clinical and Psychological Study of Aphasia. By Joseph Collins, M.D. 8vo, pp. viii, 432; with 20 illustrations. New York and London: The Macmillan Company. 1898.

To this work was awarded the Alvarenga prize in 1897. In it the writer makes no attempt to discuss all the disturbances of speech, but only the special disturbances to which the name of aphasia is given. In this discussion he adopts boldly the position taken by Dejerine and his pupils. He admits six forms of aphasia, cortical and subcortical motor aphasia, and cortical and subcortical sensory aphasia, either visual or auditory. The existence of a graphic motor centre is flatly denied. "The zone of language contains three centres, each of them the seat of memory images of a sensory nature, and none of them of absolute autonomous activity." He follows Bastian in regarding Broca's convolution as a kinesthetic centre, destruction of which causes "loss of spontaneous speech and all forms of speech utterance for which an evocation of articulatory kinesthetic memories is required." Agraphia is always an accompaniment of such a lesion. In subcortical motor aphasia there is inability to externalize speech which has been properly formed in the speech centres. The special movements of articulation are impaired, but internal language is retained and the patient can still write. Destruction of the visual centre also entails agraphia, but in the subcortical form of visual aphasia the patient can still write. These views are maintained with much vigor and learning, and the arguments of their opponents are successfully met. Although the author subjects all the evidence in favor of a special graphic centre to the strictest criticism, he shows himself, on the other hand, ready to accept hypotheses which have far less support than the hypothesis of a graphic centre, namely, the views of Flechsig as to he association centres and Flechsig's denial of the exstence of the inferior pediculo-frontal fascicle. Suggestive and alluring as Flechsig's views are, they are mere speculation unsupported by fact, and Flechsig's views as to the lack of projection fibres in his associaion centres have been combated by the best anatomists. Nevertheless, although Broca's convolution may send projection fibres through the pediculo-frontal fascicle nd although there may be a graphic centre in process f evolution to be found only in the highly educated, he theories of aphasia advanced in this work are, we elieve, those based most solidly upon the facts at resent known, and they form the best working hyothesis to aid us in understanding this difficult subject, nd the present treatise is certainly clear and helpful. t has become a custom lately for the neurologist to lapse into verse." In decadent poetry it may be ermissible to use strange and awful words, but in a cientific treatise, where close thinking and a clear nderstanding of what is written are requisite, it adds ot to such understanding to be driven, perhaps in ain, to the dictionary to find the meaning of the thor's cacophonous logopoietics.

The Elements of Clinical Diagnosis. By Dr. G. Klemperer, Professor of Medicine at the University of Berlin. First American from the seventh (last) German edition, with 61 illustrations. Authorized Translation, by Nathan E. Brill, M.D., and Samuel M. Brickner, M.D. New York: The Macmillan Co. 1898.

This has been a popular little book in Germany, d the translators, from their own experience of its lue, desire that its usefulness should be extended to eir own countrymen. The book in itself is meririous, but the number of such, under the titles of annals, Elements, etc., is already large and is conantly increasing.

Dr. B. Sachs, of New York, has been elected a reign member of the Society of Psychiatry and ervous Diseases of Moscow.

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HYSTERIA IN ANIMALS.

It is a well-recognized fact that certain of the neuroses, such as chorea and epilepsy, and some forms of insanity occasionally occur in the lower animals. Since Kircher's famous experiment in the middle of the seventeenth century it has also been claimed that certain of the lower animals were hypnotizable, although Preyer attributed the phenomenon to the effects of fear rather than to a true hypnotic state. Observations of hysteria in the lower animals are extremely rare. In his well-known treatise on hysteria Gilles de la Tourette [1] cites several observations, but admits that he has no opinions of his own to express. He gives certain observations by Aruch,[2] a veterinary surgeon of Milan, which are of sufficient interest to warrant mention. An intelligent, affectionate bitch, two years and a half old, had had some nervous disturbance on account of her master's departure. Some time later, on first seeing her mistress holding the new-born baby, she became suddenly ill. She had dysphagia, cough, polyuria, an alteration of the voice and a capricious humor; later she had complete aphonia, progressive paralysis of the limbs, diminution of cutaneous sensibility, but no muscular atrophy. The exhibition of nux vomica caused clonic convulsions. The animal was killed, but no lesion of the nervous centres was discovered. The second case was a fat, intelligent and affectionate dog, eleven years old, who was attacked with a convulsion without loss of consciousness, on receiving a sharp reprimand from his master. From that time the attacks recurred whenever his master entered the house, replacing the usual manifestations of joy. The third case was a terrier two years old, who a year before had had an attack of paraplegia of unknown nature. His mistress brought a bitch into the house as a companion, when he at once lost his habitual gayety and appetite. The sexual instinct was only slightly aroused and multiple paralytic troubles appeared, dysphagia, alteration of the voice, and progressive paraplegia with preservation of the functions of the bladder and rectum. Nux vomica gave rise to clonic convulsions in him also. He recovered very rapidly when separated from his companion.

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[1] Traité clinique et thérapeutique de l'hysterie, i, 123.
[2] Révue Scientifique, October 5, 1889.

Higier, of Warsaw,[3] has just reported two other observations which are of especial interest from the author's reputation as a neurologist and from the special study which he has made of hysteria and allied conditions and particularly hysteria of traumatic origin. The first case was a nine-months-old kitten belonging to one of Higier's patients which had always been healthy, playful and intelligent, although her mother had had clonic twitchings (chorea?) during pregnancy. Attacked by a dog, which bit her deeply in the back, she fell at once as if paralyzed, mewing piteonsly for several minutes. When seen by Higier five or six weeks later she walked only with the fore-paws, dragging the trunk and hind-paws after her. The hind-paws and the posterior third of the trunk were completely anesthetic to pain, touch and temperature. The tail was also paralyzed and the kitten could not express its feelings by wagging it in the usual manner. There was no muscular atrophy and no incontinence of urine or feces. Except for the absence of vesical and rectal paralysis the kitten was like one made paraplegic by section of the cord, and it was believed that the cord was actually injured. A few days later, however, the maid-servant threw the kitten down stairs to see if she would land on her feet like a healthy cat. The surprised kitten actually did land on all fours, ran away, and remained permanently cured of the paraplegia. The second case was in Higier's own canary bird. A cat jumped at the cage and knocked it down, apparently without touching the bird. The bird was found rigid on the floor of the cage, but was brought back to life by sprinkling with cold water. He was lively, ate readily, and showed no abnormality after this, but he was absolutely silent although previously he had been an excellent singer. This aphonia lasted six and a half weeks, and then he suddenly and unexpectedly began to trill as well as ever.

The development of the symptoms after a severe fright and the very sudden recovery in both these cases, and the paralysis with anesthesia, but without muscular atrophy or disturbance of the bladder and rectum, in the first case would, if the conditions were observed in man, render a diagnosis of hysteria most probable. Aruch's cases, also, must be classed in the same category, and the negative results of the autopsy afford a further confirmation of the diagnosis. That many animals are profoundly susceptible to reproach, shame, jealousy and fear is a well-accepted fact, and it is not improbable, and these cases seem to prove that with intelligent animals, as with man, psychical impressions may exert profound reaction in the somatic functions and excite an apparently typical group of hysterical symptoms.

"MATERNITY AND GYNECOLOGICAL HOSPITALS."

The above title well describes a certain class of institutions designed for the relief of suffering female humanity. Sometimes they are called "Maternity Homes," sometimes "State Sanitaria," but the sweet aroma of the service offered is the same, however the name may differ. This sort of home is prepared to receive women suffering from disorders peculiar to their sex, especially cases that are treated with difficulty in their own homes, and those seeking privacy in confinement. The utmost delicacy and absolute privacy are guaranteed. A home for the infant will be provided, should parents desire to part with it. A private carriage will await patients at the depot. A liberal commission will be allowed to the profession for any cases influenced; or, as these cases come through professional recommendation, it is at once a duty and a pleasure to set aside as compensation for such consultation fifteen or twenty per cent. of the fees received from patients thus recommended. When it is necessary from disease or other physiologically abnormal condition, or when from any other cause the life of the patient is imperilled, and special surgical interference for the induction of premature labor has been decided upon, long experience in the treatment of such cases, the simplicity and safety of the methods and the thorough course of antiseptic after-treatment, are absolute assurances of the most satisfactory results.

The announcements are skilfully worded and run more or less after the above fashion. One of these, emanating from a large Western city, was recently sent us by a colleague to whom it had been addressed, with the remark: "Thus are things done in the wild and woolly West." But some things are done in some places as well as in others.

It so happened that there was lying by us a similar circular from the second largest city in the world, and still another originating in a city of no mean size particularly near home. This last had been sent us by the outraged recipient, a medical practitioner in the State of Maine, signing himself "Country Doctor." "Country Doctor" had read his double-barrelled circular carefully, and deduced therefrom this: "The advertisers ask you to send all the cases you can for them to commit abortion upon and state that they will give the sender twenty per cent. of the profit of their hellish work. Probably you can find out at the State House what sort of a license these worthies have." For the benefit of the rest of the profession, for the protection of the innocent unborn and for the fair name of our State, "Country Doctor" asks us to publish this literature in full, italics and all, and send a copy thereof to the authors, and another to the State and city police.

We wish we were sure that a good end and the cause of justice would be thus served. This sort of thing exists in most of our large cities, and we fear it flourishes through the weakness of mortal nature, but not through the "consultations" of honest practitioners of medicine.

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[3] Neurologisches Centralblatt, July 1, 1898.

What the police require is testimony, not literature, and convicting testimony is not easily come by.

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WAR IN ITS EFFECT UPON THE NERVOUS SYSTEM.

In a recent editorial, entitled "The Shock and Stress of War," the *Philadelphia Medical Journal* adopts essentially the point of view taken in our editorial of April 14th, on "The Accident Neuroses of War," and in a subsequent paper by Dr. Morton Prince. Of great interest is this statement made by the writer: "A lieutenant in the United States Navy, who was watch-officer on the ill-fated battleship *Maine* on the night she was blown up in Havana harbor, has just been taken to an asylum for mental and nervous disorder caused by the shock and strain of that great disaster. We have no details by which to judge of the exact condition of this unfortunate officer, so we do not know whether any other factor has acted as a cause of his malady; but his case probably confirms the suspicion which we have had all along, that the tragedy of the *Maine* would possibly leave a long train of nervous disorders for some of the men who shared in it."

The writer further discusses the differences in the conditions which prevailed on the *Maine*, with the appalling suddenness of her destruction, and those in the *Texas* after the conflict with Cervera. The strain of conflict, with the incessant noise from the guns in action, may well have had its effect upon the nervous systems of the participants, and yet it is easy to conceive how much less of a shock this would produce than the suddenness of such a disaster as befell the *Maine*.

As we before pointed out, there is much to be learned from a study of the conditions of a modern battle, whether upon sea or land, and we have no doubt that with a medical corps more competent than ever before some observations of importance will be made.

◆

MEDICAL NOTES.

Emperor William's Donation. — Emperor William, of Germany, is said to have given 10,000 marks to the Red Cross Society, for the benefit of wounded Spanish and American soldiers.

University of Denver, Medical Department. — The following additions have recently been made to the Faculty: Dr. Carroll E. Edson, Professor of Therapeutics; Dr. Hobart E. Warren, Associate Professor of Anatomy in charge of the Department; Dr. T. J. Gallaher, Professor of Laryngology and Rhinology; and Dr. I. B. Perkins, Clinical Professor of Gynecology.

German Congress of Scientists and Medical Men. — Announcement is made that at the Congress to be held in Düsseldorf, from September 19th to 24th, there will be four exhibitions. One will illustrate the history of medicine and science; the second the services rendered by photography in scientific investigations; the third, new instruments and apparatus pertaining to medicine and science; and the fourth, apparatus for teaching physics and chemistry.

Forthcoming Medical Congresses. — A proposal has been made by the Bombay Medical and Physical Society to hold a congress at Bombay at the beginning of the winter to make a thorough study of the plague. The Ninth Congress of French Alienists and Neurologists will open at Angiers on August 1st, under the presidency of Dr. Mottet. The Fourth French Congress for the Study of Tuberculosis, from the 27th of July to the 1st of August, under the presidency of Professor Nocard.

Mississippi Valley Medical Association. — The twenty-fourth annual meeting of the Mississippi Valley Medical Association will be held at Nashville, Tenn., October 11th to 14th, under the presidency of Dr. John Young Brown, of St. Louis, Mo. The annual addresses will be made by Dr. Jas. T. Whittaker, of Cincinnati, on Medicine, and by Dr. Geo. Ben Johnson, of Richmond, Va., on Surgery. Titles of papers may be sent to the Secretary, Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville, Ky.

More Typhoid Cases at Camp Alger. — It is reported that typhoid fever has made its appearance among the Rhode Island men at Camp Alger, three cases having been announced from the 2d division hospital as coming from their regiment. These cases are treated at Fort Myer, where the hospital equipment is, no doubt, amply sufficient to treat the disease. The reported occurrence of cases is said to be due, in great measure, to the carelessness of the men, who expose themselves in various ways to the contagion.

Only Trained Nurses Wanted. — According to the *Medical Record*, so many applications have been received from women who have had little or no experience in nursing, that the officials of the Red Cross Society in New York have issued a notice that only professional nurses in sound health are wanted or can be accepted. The service required is of the most exacting kind, and consequently a good physique is as necessary as are professional training and experience.

Wounds of Mauser Bullets. — Surgeon-Major Kimball, on charge of the Army Hospital at Governor's Island, N. Y., is reported to have said that the wounded soldiers under his charge were doing well, and that many were being sent to their homes. This he attributed, in great measure, to the character of the wound made by the Mauser bullet, and asserted that the percentage of recoveries would have been decidedly less had the wounds been inflicted, for example, by the old Springfield rifle. The further statement made, that one soldier who had been shot through both lungs, apart from a slight cough, was apparently all right, we may take with a certain degree of reservation.

Yellow Fever in Cuba. — The reports, without exception, seem to show that what yellow fever there may be in and about Santiago is well in hand, and on the whole, is diminishing. If present conditions are continued, it is safe to say that this much talked of menace to our troops has been greatly exaggerated. General Shafter reports six deaths from yellow fever in the hospital at Siboney, but none from the front. About 1,500 are sick with fever but of these only about 150 have yellow fever. The suggestion which has been made of at once improving the drainage of Santiago, should undoubtedly be carried out, whatever the general health of the inhabitants may be. Precautions of the most rigid sort are being taken to prevent the introduction of yellow fever into our southern ports. The suspicion of its appearance at Fort Monroe has not yet been confirmed, but a quarantine will be at once established should the fever actually break out. It is said that quarantine officials have refused to permit wounded soldiers to land at Old Point Comfort for fear of yellow fever.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 27, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 14, measles 60, typhoid fever 9.

Recent Appointments. — Dr. Sidney A. Lord has been appointed assistant physician in the Neurological Department of the Massachusetts General Hospital.

Sailing of the "Bay State." — There seems to be no question that the hospital ship *Bay State* will be ready for sea on the date specified, August 1st. The work on her is going forward well, and is being pushed night and day and Sundays. The ice plant has arrived and was unloaded at the wharf, and this will be installed soon, as the lower hold of the ship, where it is to go, has had a great deal of work done on it, and is about ready to receive all the fittings.

NEW YORK.

Arrival of the "Seneca." — The United States transport *Seneca* arrived on July 20th from Siboney, Cuba, with ninety-nine sick and wounded soldiers, together with about fifty other passengers. The *Seneca* is not a hospital ship, and, through somebody's blunder, she was sent off in a filthy condition, without medical stores or surgical appliances, without a proper food supply, without ice, and with even an inadequate supply of water. No army surgeon was detailed for the vessel, and the men suffered very greatly for the lack of suitable accommodations on the voyage. By chance, as it seems, there were two physicians on board, Drs. Hicks and Bird, and they, together with a single Red Cross nurse, Miss Jennings, devoted themselves assiduously to the care of the patients. When the vessel first arrived in port it was feared that some of the men might be suffering from yellow fever, but the Health Officer, Dr. Doty, kept them under observation long enough to determine that there was nothing more serious than malarial fever on board. As soon as practicable, the wounded among the sufferers were taken to Bellevue Hospital for treatment.

Sailing of the "Resolute." — On July 19th the steamer *Resolute*, formerly the *Yorktown* of the Old Dominion Line, sailed for Santiago with a large quantity of medical stores and a considerable number of immunes for hospital service. There were seventy-three male nurses (most of them from New Orleans), ten women nurses and a staff of ten physicians under the direction of Major William H. Arthur.

The "Relief" Arrives. — The regular army hospital ship *Relief*, under command of Major G. H. Torney, Surgeon U. S. Army, arrived in port from Siboney on July 23d, with 125 sick and wounded soldiers, two of the 127 with which she started having died on the voyage. It had been just three weeks since she sailed from New York perfectly appointed for the purpose for which she was designed, and on her return she presented a total and very pleasing contrast to the demoralized *Seneca*, her appearance being as neat and her equipment for medical and surgical service as complete as the most up-to-date city hospital. During the trip of the *Relief*, Dr. Torney states, she received in all 265 patients, of whom 13 died.

Death from Tetanus. — A lad, ten years of age, has just died in Brooklyn of lockjaw, whose life might possibly have been saved if the use of tetanus antitoxin serum could have been applied more promptly. Dr. Philip Brennan was called to the case on Sunday, July 17th, and immediately sending to the bacteriological bureau of the Health Department in Manhattan Borough, was informed that no serum was procurable there on Sunday. Certainly this is a state of affairs that should at once be remedied, for while it is of course by no means positive that the case would not have terminated fatally under any circumstances, there would have been, at least, a better chance of success if the antitoxin could have been used twenty-four hours earlier than it was.

Treatment of Patients on the "Relief." — All of the patients on board the hospital ship *Relief*, were enthusiastic in their praise of the treatment they had received from the surgical staff and the trained nurses. A number of the latter were picked men from Bellevue Hospital, and their excellent work was efficiently supplemented by the kind offices of six Red Cross women nurses. During the trip there were thirteen major operations performed by Dr. Torney and his assistants, with the result of ten recoveries and three deaths. The various modern "plants" with which the vessel was supplied contributed marvellously to the comfort and welfare of the sick and wounded soldiers. These included a distilling apparatus providing 2,000 gallons of fresh water a day, a carbonator for the manufacture of effervescent mineral waters, two sterilizing plants, and a disinfector. As to the great ice plant, making two tons of ice a day, in the language of one of the hospital stewards, it was worth its weight in gold. When the *Relief* was at Siboney, as much ice as could possibly be spared was sent on shore, and the donors had the satisfaction of learning that it was instrumental in saving the eyesight of two men, one a captain and the other a private who had gunshot wounds near the eyes. Mention should also be made of the admirable work accomplished by means of the two x-ray apparatuses with which the ship was provided. These were under the charge of Dr. W. M. Grey, who took no less than 75 radiographs, many of which were of the greatest possible service in locating bullets, and these are all to be sent on to Washington for permanent preservation. In one remarkable case the man was struck in the right elbow, after which the ball passed entirely across the chest and finally lodged in the left forearm, where it was readily located by the apparatus.

Miscellany.

DIAGNOSIS OF GASTROPTOSIS.

Dr. A. Symons Eccles offers a valuable paper on this subject in a recent number of the *West London Medical Journal.* It is a matter which has of late attracted a large share of attention, and it is desirable that as many carefully reported cases as possible be put on record, that we may arrive at a just conception of its true significance in relation to other disturbances, notably those occurring in the nervous system.

Dr. Eccles alludes to twenty-seven patients of whom eight were males and nineteen females. The ages of the men ranged from thirty-two to sixty-one years, while of the nineteen females the eldest was forty-five and the youngest nine. In three other males and six other females nephroptosis was coexistent, eight of the right kidney and one of the left. Methods of examination are varied and somewhat complicated. The more important points we reproduce in the writer's words:

> "Inspection in different attitudes, palpation in the recumbent, tilted up, lateral and erect postures, and sometimes in the prone position, or with the patient resting on the hands and knees; then percussion both direct, without the intervention of the passive finger and with it, has appeared to me to be more useful than so cautious an observer as Prof. Clifford Allbutt seems to have found it. Again, I believe that ausculto-palpation has been very instructive to me in confirming the diagnosis of visceral displacements and dimensions. While the stethoscope is poised lightly on the abdominal wall, I use both hands to palpate, press on, or stroke the abdominal and hypochondriac walls, and I rarely find that the dimensions mapped out by this plan are not confirmed by percussion and *vice versa.* Moreover, to test the accuracy of the ear, I often shut my eyes so that I cannot see the marks already made by the flesh pencil as the result of one or other of the means employed. Tapping lightly, very gently indeed with the tip of the semi flexed finger in a somewhat staccato fashion, is also a favorite practice of mine in examining the abdomen.
>
> "If then, I were asked, What are the physical signs and symptoms of gastroptosis? I should say that on inspection in the recumbent position the natural convexity of the epigastric region was lost, and in place thereof there is a marked concavity between the costo-chondral arches from the xiphoid cartilage almost as low down as the navel, sometimes below this point; there may also be a median sulcus intensified above by the narrowing of the space between the right and left rib cartilages, its shape being more that of an inverted Y than an inverted V. The whole abdomen may be more or less flattened, with bulging of the flanks; and in the erect posture the depression over the epigastric region is still more marked, while the umbilical and especially the hypogastric regions are unduly prominent, but not so distinctly pendulous as in cases of general enteroptosis."

THE SEASONS AT MANILA.

The seasons at Manila, according to *Science*, are described by the Spaniards as six months of mud, six months of dust and six months of everything. *Science* goes on to say: "There is much confusion in the public mind just now as to the question of the health of North American troops during a temporary sojourn in the Philippines, and also as to the larger question of possible acclimatization of our people in those islands, in case of permanent occupation. No definite answers can be given to these two questions, but in their consideration three things may well be borne in mind. First: By means of a strict observance of hygienic principles, the death-rate among foreigners in a tropical country can be very much reduced. This has been nowhere better shown than in the case of the British troops in India and of the French troops in Cochin-China. Second: The great majority of the best authorities are agreed that complete acclimatization of Europeans (and hence, we may add, of North Americans) in the tropics is impossible. By exercising the greatest care, they may *live* in tropical countries, but, as has been well said by a recent writer, to tolerate a climate is one thing; to be independent of it is quite another. Third: The Anglo-Saxons are universally acknowledged to be the least fitted, the Mediterranean nations the best fitted, to colonize in the tropics."

Correspondence.

THE SECRETARY OPHTHALMOLOGICAL SECTION, AMERICAN MEDICAL ASSOCIATION.

15 Arlington St., Boston, July 22, 1898.

Mr. Editor: — In your issue of yesterday, page 73, I notice you state that my brother, Dr. F. H. Williams, was made Secretary of the Section on Ophthalmology; it should have been Dr. C. H. Williams. I was present at the Denver meeting, read a short paper in the Ophthalmological Section and was elected secretary for the next meeting of the Section.

A correction of your notice will help me in arranging the work of the Section for the next year.

Very truly yours,
Chas. H. Williams, M.D.

METEOROLOGICAL RECORD

For the week ending July 16th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...10	29.92	62	68	56	65	83	74	N.	E.	5	8	C.	F.	
M..11	30.22	60	66	55	60	69	64	N.	S.E.	4	4	C.	O.	
T...12	30.47	61	65	57	68	73	70	N.E.	N.E.	18	7	O.	O.	
W..13	30.46	58	60	57	100	100	100	N.E.	N.	13	22	R.	R.	2.24
T...14	30.08	72	85	58	90	74	82	W.	S.W.	3	14	C.	C.	.02
F...15	29.82	78	86	69	78	50	64	W.	N.	10	9	O.	C.	
S...16	29.92	74	84	63	59	39	49	N.W.	N.	10	9	C.	C.	
☞														2.26

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 16, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York . .	3,438,899	1419	803	30.10	9.38	23.10	2.45	1.82
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	248	139	35.20	7.60	28 20	.80	6.00
Boston . . .	517,732	192	42	3.64	17.68	2.08	—	1.04
Cincinnati . .	405,000	117	—	17.00	11.05	12.75	—	1.70
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	110	36	20.93	13.65	14.56	—	1.82
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	54	27	23.30	9.25	28 60	3.70	—
Worcester . .	105,050	20	12	35.00	—	25.00	—	5.00
Fall River . .	95,919	—	—	—	—	—	—	—
Nashville . .	87,754	29	10	17.25	17.25	17.25	—	—
Lowell . . .	87,193	44	30	50.00	6.81	45.40	2.27	—
Cambridge . .	86,812	27	12	25.90	7.40	25.90	—	—
Lynn	65,220	—	—	—	—	—	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
New Bedford .	62,416	22	11	33.20	4.15	24.90	—	4.15
Somerville . .	57,977	—	—	—	—	—	—	—
Lawrence . .	55,510	—	—	—	—	—	—	—
Springfield . .	54,790	16	8	31.25	12.50	31.25	—	—
Holyoke . . .	42,364.	19	13	57.86	10.52	57.86	—	—
Salem	36,062	6	2	—	33.33	—	—	—
Brockton . .	35,853	6	1	—	—	—	—	—
Malden . . .	32,894	10	3	10.00	—	—	10.00	—
Chelsea . . .	32,716	8	0	—	37.50	—	—	—
Haverhill . .	31,406	9	5	11.11	11.11	11.11	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	—	—	—	—	—	—	—
Fitchburg . .	28,392	3	1	—	—	—	—	—
Taunton . . .	27,812	8	3	12.50	—	12.50	—	—
Quincy . . .	22,562	3	1	—	—	—	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	3	1	—	—	—	—	—
Everett . . .	21,575	4	1	—	—	—	—	—
North Adams .	19,135	4	0	—	—	—	—	—
Northampton .	17,448	—	—	—	—	—	—	—
Chicopee . .	17,368	12	5	25.00	—	25.00	—	—
Brookline . .	16,164	4	2	25.00	—	—	25.00	—
Medford . . .	15,832	2	2	—	—	—	—	—

Deaths reported 2,409: under five years of age 1,173; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping cough, erysipelas and fevers) 759, consumption 252, acute lung diseases 162, diarrheal diseases 513, diphtheria and croup 49, whooping-cough 42, typhoid fever 15, cerebro-spinal meningitis 14, measles 12, scarlet fever 11, erysipelas 3.

From typhoid fever New York and Washington 4 each, Baltimore and Cincinnati 3 each, Boston 1. From cerebro-spinal meningitis New York 12, Baltimore and New Bedford 1 each. From measles New York 10, Washington and Worcester 1 each. From scarlet fever New York 11. From erysipelas New York 2, Lowell 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending July 9th, the death-rate was 14.7. Deaths reported 3,154; acute diseases of the respiratory organs (London) 160, whooping-cough 99, diarrhea 68, measles 67, diphtheria 48, scarlet fever 25, fever 22.

The death-rates ranged from 9.4 in Cardiff to 21.4 in Sunderland; Birmingham 15.1, Bradford 14.1, Gateshead 18.1, Hull 14.3, Leeds 16.8, Liverpool 17.3, London 14.3, Manchester 17.0, Newcastle-on-Tyne 20.3, Nottingham 11.5, Sheffield 16.1, West Ham 16.6.

BOOKS AND PAMPHLETS RECEIVED

Massachusetts Infant Asylum. Thirty-first Annual Report, 1898.

Duralinfusion. Von Dr. Paul Jacob. (Sonderabdruck aus der Berliner klin. Wochenschr., 1898, No. 21.)

Early Aid to the Wounded. By Dallas Bache, Colonel and Assistant Surgeon-General, U. S. A. Reprint. 1898.

A Consideration of Amputation at the Shoulder-Joint for Sarcoma of the Humerus, with a Report of Three Cases; Operation and Recovery. By Arthur L. Fisk, M.D., New York. Reprint. 1898.

Transactions of the New York State Medical Association for the Year 1897. Volume XIV. Edited for the Association by E. D. Ferguson, M.D., of Rensselaer County. Published by the Association. 1898.

Lösliches metallisches Silber als Heilmittel. Von Dr. B. Credé, K. S. Hofrath, Divisionsarzt a. l. s., Oberarzt des Carolahauses zu Dresden. Separat-Abdruck aus Nr. 14, 15, 1898, d. "Klin.-therap. Wochenschr."

Ueber den Einfluss nucleinhaltiger Nährung auf Blut und Stoffwechsel unter besonderer Berücksichtigung des Phosphorsäurestoffwechsels. Von Dr. Paul Jacob und Dr. Peter Bergell. (Sonder-Abdruck aus der Zeitschrift für klin. Medicin. 35 Bd. H. 1, u. 2.)

Two Interesting Cases of Intestinal Resection with End-to-End Anastomosis by Means of the Murphy Button, with Recovery. Tonic and Spasmodic Intestinal Contraction, with Report of Cases. By X. O. Werder, M.D., Pittsburgh, Pa. Reprints. 1897.

American Association for the Advancement of Science, Fiftieth Anniversary. Preliminary announcement of the Boston meeting to be held August 22 to 27, 1898, and of the meetings of several affiliated scientific societies that will hold their sessions in Boston.

Twentieth Century Practice, An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Volume XIV. Infectious Diseases. New York: William Wood & Co. 1898.

Rheumatoid Arthritis; Its Pathology, Morbid Anatomy and Treatment. By Gilbert A. Bannatyne, M.D., Colas., M.R.C.P., Ed., Honorary Physician to the Royal United Hospital and to the Royal Mineral Water Hospital, Bath. Second edition, illustrated. Bristol: John Wright & Co. 1898.

Burdett's Hospitals and Charities, 1898, being the Year Book of Philanthropy and the Hospital Annual. By Sir Henry Burdett, K.C.B., Author of "Hospitals and Asylums of the World," etc. London: The Scientific Press (Limited). New York: Charles C. Scribner's Sons. Boston and Chicago: D. C. Heath & Co.

Diseases of the Nervous System, a Hand-Book for Students and Practitioners. By Charles E. Bervor, M.D., Lond., F.R.C.P., Physician to the National Hospital for the Paralyzed and Epileptic, the Great Northern Central Hospital and the National Orthopedic Hospital. With illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

On Cardiac Failure and Its Treatment, with Especial Reference to the Use of Baths and Exercises. By Alexander Morison, M.D., Edin., F.R.C.P.Ed., Physician to Out-Patients to the Great Northern Central Hospital and the Paddington Green Children's Hospital; Physician to the St. Marylebone General Dispensary. London: The Rebman Publishing Co. 1897.

Conservative Gynecology and Electro-therapeutics; a Practical Treatise on the Diseases of Women and their Treatment by Electricity. By G. Betton Massey, M.D., Physician to the Gynecologic Department of Howard Hospital and late Electro-therapeutist to the Infirmary for Nervous Diseases; Fellow and Ex-President of the American Electro-Therapeutic Association, etc. Third edition, revised, rewritten and greatly enlarged. Illustrated with 12 original full-page chromo-lithographic plates and 12 full-page half-tone plates of photographs taken from nature and numerous engravings in the text. Philadelphia: The F. A. Davis Co. 1898.

Original Articles.

SOME PRACTICAL POINTS IN THE ANATOMY OF THE FOOT.

R. W. LOVETT, M.D., AND F. J. COTTON, M.D., BOSTON.

The aim of the present paper is to study the conditions met with in the pronated foot as distinguished from the flat-foot. By pronation is meant that vicious attitude of the foot in which, in habitual standing position, it rolls over inward, the inner malleolus projects and abduction of the front part of the foot occurs. Up to a certain limit, which has not been correctly determined, this movement occurs in the normal foot; beyond this limit it must be regarded as pathological, and is likely to be attended by symptoms of pain and disability. Correction active or passive to normal position is usually easy in the milder cases, and the foot after being corrected shows no flattening of the arch, though the symptoms complained of may even be identical with those of flat-foot.

This class of cases is referred to also as weak foot;[1] in children the condition is commonly called weak ankles. The distinction between it and flat-foot is, however, often imperfectly appreciated.

The pathological alterations in advanced flat-foot have been carefully established by a number of dissections of such cases,[2] and there seems to be fair agreement between authors as to the actual changes, except in regard to the stretching of the calcaneo-scaphoid ligament. The mechanism of production has had many different interpretations. It is probably to be accepted, v. Meyer to the contrary notwithstanding, that the calcaneo-scaphoid ligament is stretched, at least usually. As to the theories of mechanism, the most plausible are those of Lorenz and v. Meyer. Both recognize the early pronated position, but, while v. Meyer believes that pronation goes on to flattening, Lorenz assumes that the outer arch, on which, according to his scheme, the inner arch rests, must break down before the inner arch slides off it downward and inward.

This classification of the production of flat-foot is of interest in the present connection only in so far as the study of less severe cases of static disorders of the foot may throw light on the mechanism which causes the severer cases. Theoretical considerations alone have failed to do this satisfactorily.

What interests us at present, however, is the determination of the actual anatomical conditions in the less severe forms of static disorders, and a study of their causes, avoidance and treatment. Such cases are, in this community at least, far commoner than fully developed flat-foot, yet most writers seem to fail to recognize them as forming a distinct class, and even when they have been so recognized, the pathology has not been worked out.

This investigation was undertaken by the writers in a spirit of inquiry. They had no theory to prove, and, after observing clinical facts, they passed to anatomical studies, for opportunity for which they are indebted to Prof. Thomas Dwight of the Harvard Medical School.

In contrast to the word pronation the word supination will be used here to designate the corrected position of the foot in which, by the influence of voluntary muscular contraction, the foot is placed with its outer border touching the ground, in its normal relation to the leg, and the inner malleolus not unduly prominent. Supination is a position of active muscular control and strength. Pronation is the position of ligamentous contrasted with muscular support, and is the position of weakness (Fig. 1).

It was first sought to determine whether pathological and physiological pronation are identical in the site and direction of the movement, to compare the range of movement in the two cases, and to determine

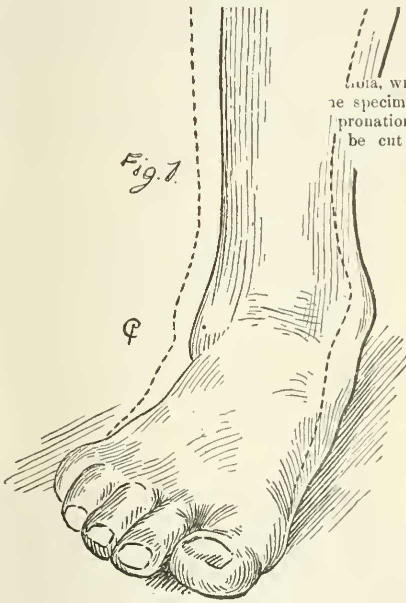

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Fig. 1. — Pronation (from photograph). Position of correction shown in broken line.

whether the functionally imperfect feet studied showed any bony or other permanent change.

For this purpose cases were selected with unserviceable feet, with more or less abnormal standing position, other cases without symptoms but of the same general appearance, other sufficiently good feet with a wide range of movement in the standing position, and others which must be classed as approximately normal. In all some sixty cases were studied.

X-RAYS.

The first method of study was with the x-ray. Photographs were taken of 11 cases of normal and pronated feet, and, for comparison, of three flat-feet with marked, two of them with extreme, bony change. The feet were photographed in two or three directions, from the inside, from above, and from the outside;

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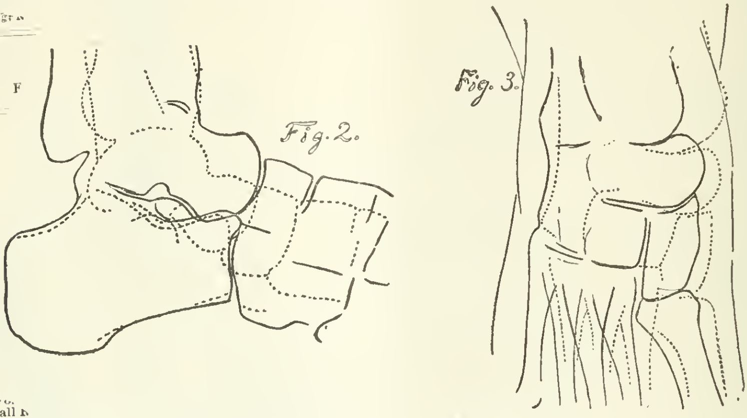
[1] Whitman: New York Medical Journal, November, 1895. Lovett: Transactions American Orthopedic Association, viii, 78. Dane: Ibid, 1897. Lovett and Dane: New York Medical Journal, March, 1896.

[2] Dittel, cited by Albert: Wien. med. Presse, 1881, p. 49. Hueter: Langenbeck's Arch., 1862, iv, 498. Henke: Ztschr. f. ration. Med., 1859. V. Meyer: Entsteh. des Plattfusses, 1883. Lorenz: Plattfuss, Stuttgart, 1883. Symington: Journ. Anat., 1884, xix, 83. Chaput: Progrès Méd., 1886, xiv, 857. Humphrey: Lancet, 1886, i, 529. Stokes: British Medical Journal, 1894, ii, 1224. Kennedy: Glasgow Medical Journal, 1894, xlii, 198.

where correction was possible, the same foot was photographed in the two positions of supination and pronation. In photographing the two positions the foot was allowed to sink or was corrected to the required position, and a fresh plate was adjusted and exposed in the same place, neither the sole of the foot nor the tube being moved. In all cases a definite measured distance of the tube from the plate was used, and the foot was placed in constant relation to both. For the lateral views the tube was placed at the height of the astragalus; for the views from above, the centre of the tube was placed directly over the centre of the front edge of the plate. The views were taken with the foot in a position of slight toeing-out, and as nearly as possible with each foot bearing an equal part of the body weight.

In this way there was obtained a series of negatives in which the error of distortion seems to have been reduced to a mimimum, for whatever distortion was present, under this constant relation of distance and angle, must be approximately reproduced in each and every plate. The plates were compared by overlaying accurate tracings of the negatives, a method which proved much more serviceable than the use of prints, or of the negatives themselves; 44 negatives were taken of which 41 proved available for comparisons. The study of the series showed:



FIGS. 2 and 3. — A painful pronated foot (X-ray tracing). Dotted line shows standing position, — full line that of voluntary correction.

(1) Save in the cases of advanced flat-foot, which showed the changes described as classical and developed nothing new (see Figs. 5 and 6), — save for these, none of the cases showed appreciable bony change. The individual variations in shape and relation of the bones were considerable, especially as regards the angle with the horizontal of the long axis of the calcis, but a study of many sets of dry bones, examined in this connection, convinced us that the variations seen in the negatives fell within the normal limit (Figs. 2 and 3).

To this there is one exception. In feet which are habitually considerably pronated, whether functionally intact or not, there seems to be some prolongation upward of the anterior surface of the astragalus, showing in the corrected position as a rise behind the scaphoid.

(2) No distinction can be drawn between the relation of bones in the painfully pronated foot and that of the relatively normal foot when allowed to pronate: nor between the normal standing position of supination and that which may be temporarily assumed in correction by feet which are habitually pronated (compare Figs. 2, 3 and 4). The range of movement is very variable, but it seems to have no definite relation to the presence of symptoms, to the usefulness of the foot, or to the position assumed in ordinary standing.

(3) The movement of pronation consists in the following changes of position:

(*a*) The foot as a whole rotates beneath the astragalus toward the position of valgus. This is seen on the x-ray plate of the lateral view by comparison of the relations, in the two positions, of scaphoid and cuboid, and is also obvious in the view from above. The valgus rotation of the calcis is best seen in side view by comparison of the relative positions of the sustentaculum tali and the line of the upper surface of the calcis. The maximum extent of rotation (between pronation and supination, in standing) was in one case about 14 degrees. This was readily determined by setting up dry bones to correspond to the positions indicated by the tracings. The valgus rotation of the front foot seemed to be somewhat more than that of the calcis, but could not be accurately estimated in degrees.

(*b*) The astragalus so rotates in pronation that its head moves inward and backward, its body and outer portion outward and forward. This is obvious in the bone itself, and is accompanied by the very obvious change in position of the malleoli which, of course, move with it in this rotation, the inner malleolus backward and the outer forward. There is at the same time a plantar flexion of the astragalus by which its head sinks towards the sole.[3]

(*c*) There is some movement outward of the cuboid on the calcis, hard to estimate accurately by the x-ray on account of the irregular contours of the bones.

(*d*) Associated with this is a movement outward of the front foot, taking place between the scaphoid and the astragalus, by which the head of the astragalus, rotating inward, is in part exposed.

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[3] All these movements have been recognized and described as occurring in the movements of the normal foot, but not for the "pronated foot." v. Meyer: Statik u Mechanik des menschl. Fusses. Golobiewski: Ztschr. f. orth. Ch., 1894, iii, 243.

(*e*) Anterior to this point no change of relation of the bones is to be made out, the whole front foot, including scaphoid and cuboid, moving essentially *en masse.*

Neither in extent or direction or site of these movements does there seem to be any constant difference between the movements of the relatively normal and the pathologically pronated foot.

ANATOMICAL DATA.

The results of the x-ray studies were checked by anatomical observations, not only of dry bones, but of the cadaver in various stages of dissection. The material placed at our disposal by Dr. Thomas Dwight did not consist, it may be said, of dry or drying specimens, but of either alcoholic specimens of ligamentous dissections, or of dissections of relatively fresh cadavers, moistened to a practically normal flexibility. To determine the movement of the bones one upon the other, long pins were driven into each of the various bones, and with the foot bearing weight the positions of pronation and supination were produced. The movements of the free ends of the pins gave a correct means of determining the movements taking place between the bones, and a very close correspondence in detail was found with the results of the x-ray photographs. Only in one respect was there a difference worthy of note; in the cadaver less valgus rotation of the calcis and more motion between the cuboid and os calcis were found under similar conditions of pronation than the x-ray photographs had led us to expect. Whether this means a laxity of ligaments in cases which show free valgus rotation of the os calcis is not certain. It must be remembered that there is great individual variation in the shape of the os calcis and in the relation of its long axis to the ground, hence, even apart from the variations in form of the joint surfaces (which are marked), there must be a different proportion between the horizontal and vertical components of rotation as affected by these variations; that is, where the posterior joint between astragalus and calcis is naturally nearly horizontal, pronation will consist more largely in abduction than in valgus rotation of the calcis beneath the astragalus. This is the probable explanation of the differences noted in different feet, and is important, inasmuch as it shows that measurements of the valgus rotation of the calcis alone cannot give a just estimate of the movement in pronation.

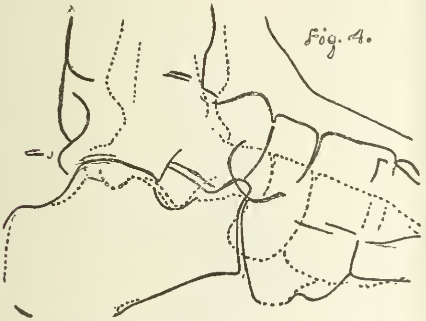

Fig. 4. A very mobile foot. No symptoms. Full line shows position of supination, dotted line that of voluntary pronation.

The abduction of the front foot is not directly dependent on the rotation of the calcis, but rather upon the horizontal rotation of the astragalus. The head of the astragalus, which is roughly spherical, moves in a ball-and-socket joint formed by the sustentaculum tali, the calcaneo-scaphoid ligament and the scaphoid. This allows of free movement, but the relations of surface are such that an inward rotation of the head of the astragalus (when the foot is under weight) determines an outward movement of the scaphoid swinging on the calcaneo-scaphoid ligament. Conversely, if the relation of the scaphoid to the calcis is fixed, with the foot bearing weight, no inward rotation of the astragalus is possible. It is in this way rather than by supporting the head of the astragalus directly, as is sometimes stated, that the tibialis posticus prevents pronation. This may readily be shown in the cadaver by nailing the tendon of this muscle to the tibia, when pronation is checked. Conversely, in some specimens where the muscles and tendons are intact, pronation is limited by this muscle, and if its tendon be cut or slipped from its groove, pronation to a much greater extent is possible.

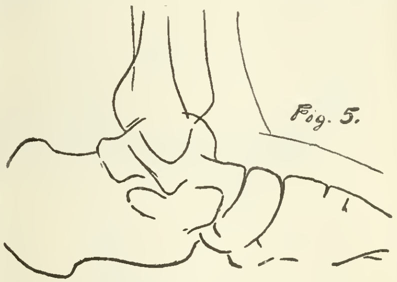

Fig. 5. Rigid flat-foot.

This somewhat complicated relation between astragalus, scaphoid and ligaments also determines the mechanism by which the front part of the foot-sole is kept flat to the ground. As the foot is supinated, there is a movement downward of the scaphoid over the head of the astragalus as well as the movement inward just described. When the foot is rolled outward in supination, this plantar flexion of scaphoid, cuneiform and inner metatarsals acts to compensate, and the inner side of the ball of the foot still remains in contact with the ground. This compensation has a practical bearing and will be referred to later.

It is to be noted that the astragalus has no muscular insertions and acts simply as a transmitter, and the sole transmitter, of the body weight. Once movement of the astragalus is permitted by the muscles, its movements and the movements of the tarsal bones beneath it are determined only by the relations of the joint surfaces — though ligaments may limit their extent.

With the scaphoid in its movement in pronation outlined above, the whole front foot moves in abduction, the scaphoid, cuneiforms and cuboid moving substantially *en masse.* The cuboid movement on the os calcis is limited by the play of a process on its posterior articular surface with a corresponding groove on the calcis. The movement in pronation is outward on the calcis with a slight twist up of the outer edge of the cuboid.

To sum up, the movements of pronation consist of the horizontal rotation of the astragalus with the sinking of its head, the rotation in valgus of the calcis beneath it, and the rotation in valgus and abduction of the front foot as a whole, occurring between astragalus and scaphoid, calcis and cuboid.

The practical immobility of the front foot itself under weight, noted in the x-ray views of abnormal and relatively normal feet, proved true also on the cadaver. Movement between the bones of the front foot is permitted in the direction of plantar flexion when the foot hangs free, and no doubt active plantar flexion, through muscular contraction, must help in the accommodation of the sole to any surface, even under weight, but in the passive weight-bearing position on even ground the bones seem to be practically locked together by the action of the plantar ligaments, holding together joint surfaces which are not constructed to allow lateral movement. This locking is not absolute, except perhaps for the third metatarsal, but the range of movement between these bones in weight bearing is, we think, far less than seems to be usually supposed. Interesting in this connection is the fact that, as plates of dissections show, the bony changes even in advanced static flat-foot involve the cuneiform and metatarsals hardly at all. This would seem to indicate the relative strength of this portion of the foot.

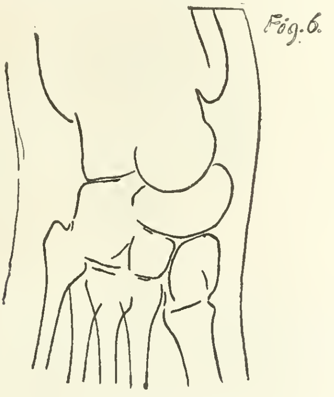

Fig. 6. Rigid flat-foot.

MEASUREMENT OF THE ROTATION OF THE ASTRAGALUS.

In order to have some definite measure of the amount of anatomical pronation, the measurement of the horizontal rotation of the malleoli was fixed upon.[4] The astragalus being firmly fixed in the malleolar mortise, so far as lateral motion goes, the malleoli take part in the horizontal excursion of the astragalus, which is an essential element in pronation. As to the accuracy of this measurement as a measurement of pronation, it can be said that pronation is invariably accompanied by rotation of the astragalus, and increased pronation by increased rotation in what seems to be a constant ratio. The measurement has been carefully and repeatedly tested, not only clinically, but on the cadaver and on ligamentous dissections as well; and it seems that, while it is not an accurate measurement of the valgus rotation of the calcis, yet, giving as it does an index of the abduction of the front foot (which has been shown above to bear a relation to the horizontal rotation of the astragalus as such), it is a fairly accurate measure of the pronation of the foot as a whole, though not mathematically accurate, as no measure of pronation can be.

This rotation we have measured as follows: A clip was constructed with sliding arms to grasp the external malleolus at its back edge, the internal at its prominent anterior portion. (See Fig. 7.) These are the only anatomical points which are constantly available clinically, and proved on examination of cadavers to bear a very constant relation to the axis of the ankle-joint (an error at the maximum of but four degrees, and averaging much less). The clip bears two projecting rods on the sliding arms which form a prolongation of a line passed through the two points on the malleoli just noted.

In using this instrument the patient stands bearing the weight equally on both feet, the direction being given to stand as naturally as possible, the patient being allowed to stand in any position of eversion which he or she may select as the ordinary standing position, or a fixed angle of divergence of the feet is chosen. From these two rods projecting from the clip a perpendicular was dropped by means of a rule or a folded piece of paper folded vertically, and the points representing the bottom of the perpendiculars were marked on the paper on which the patient stood; a thick ruler was then placed along the inner side of the patient's foot and a line drawn along it; the foot was then removed from the paper and the two points representing the perpendiculars from the rods were connected by a line, and the angle made by the two lines was measured (Angle ABC Fig. 7). The error of the actual measurement proved very small, a matter of a couple of degrees or less.

This measurement gives, of course, at best, simply the measurement of pronation in such feet as are without much bony change — the more usual condition. In flat-foot proper it can only be a measure of the position of the astragalus, and not a true measure of pronation.

This angle with its variations was studied in 119 measurements on 51 cases (beside measurements on 14 undissected cadavers). In this series we find:

(*a*) The angle varies in natural standing from 46° to 73°.

(*b*) In people with the better class of feet it is below 60°.

(*c*) The normal we should set at about 50°.

(*d*) People with painful feet are likely to have a higher angle, 60° or 70°.

(*e*) Competent feet show an appreciable, often a considerable, increase of the angle, over that of ordinary standing, when the foot is voluntarily allowed to roll inward; it may be said that they have a reserve of pronation.

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[4] The attempt to use this rotation as a measure has been made before, but by less exact methods. Lovett: New York Medical Journal, June, 1895. Dane: Loc. cit.

(*f*) When there is no such reserve of pronation one is likely to find symptoms.

(*g*) The angle varies with position, being greater in the position of divergence of the feet when this divergence is over 30°. With the feet toeing-out at 90° this increase in the angle may be considerable.

(*h*) One finds feet which have a reserve of pronation when toeing-in or parallel — none when they toe-out. This condition also seems connected with the presence of symptoms.

(*i*) There is a curiously constant maximum of 71° to 73° in the cases measured by us, which would seem to indicate the anatomical limit of pronation; but dissected feet show individual maxima, determined by ligaments, which in some cases are several degrees less than this. The occurrence of this maximum angle is not necessarily a sign of an incompetent or weak foot, unless this angle represents the habitual standing position.

(*j*) Flat-feet proper, in the few cases we have measured, record about this same angle, 70° to 73°, whether they are of the fixed or the mobile type.

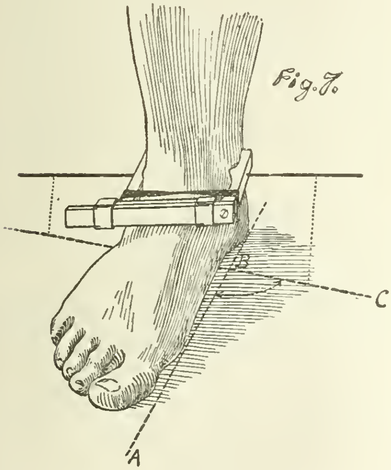

Fig. 7.

(*k*) The actual angle, though indicating the anatomical condition, is only a rough indication of the competency of a foot. A large angle indicates at most only a mechanical disadvantage in standing, and considerable pronation, shown by this as by the other measures, may exist in a foot which is not only painless but mechanically sufficient for the person's needs.

This measurement of angle is of most value in comparing the pronation in different positions of the same foot, or in comparing the two feet of an individual in the same position. However, though it is undoubtedly subject to some error, as all measurements of pronation must be, from the normal variation in the shape of the tarsal bones in different individuals, yet it appears to us the most accurate index of anatomical pronation yet proposed, and sufficiently accurate to be of definite value.

In a number of cases the relation of the internal malleolus to the weight-bearing areas was observed and measured. This was done by tracing these areas on the under side of a glass plate on which the patients stood, dropping a perpendicular from the internal malleolus to the glass, marking this point, tracing off the areas and the point so obtained, and measuring the distance from said point to a line joining the inner edge of the anterior and posterior areas of weight bearing. This distance must, of course, represent in some degree the mechanical competency of the foot as a passive support, or, conversely, the disadvantage to be overcome by muscular action, and that more accurately than v. Myer's triangle method, since the weight-bearing surfaces do not necessarily correspond to the anatomical landmarks. The scheme did not prove serviceable as an index, however; the measurement is too rough a one.

The old-fashioned smoked-paper imprints were taken in some cases, but were of use only in helping us class, according to older standards, the cases studied. The "flat-foot print" fails to differentiate between the fleshy padded, the edematous foot, and the flat foot, except in cases of advanced deformity, where mere inspection does as much. It equally confuses the lifted outer edge of many pronated feet and the naturally high arch; is, in short, practically nearly worthless. How worthless it is a recent paper by Dr. John Dane, in criticism of data previously accepted from imprints of children's feet, will clearly show.

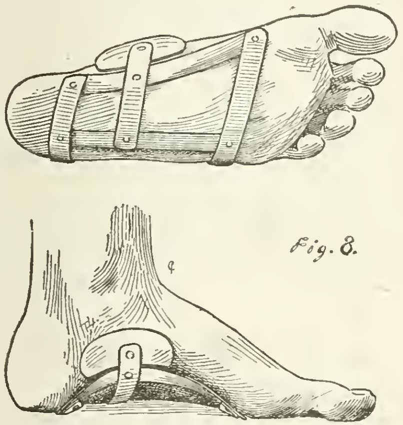

Fig. 8.

Observations by the glass-plate method are open to objections similar to those urged against the imprint method, though its data are more readily controlled by the eye. Besides this it does give definite information as to the tiring reaction (that rolling inward of the foot which is sometimes to be seen after a few moments' standing in one position) and also enables one to judge not only of the areas of weight bearing but also of the relative distribution and amount of pressure.

By aid of this method it was possible to demonstrate in certain cases that correction of the foot back to approximately the normal standing position caused a considerable lifting of the inner edge of the anterior weight-bearing areas — producing a very abnormal outline.

In some cases which might be classed as pronated feet, as well as in mobile flat-foot, this lifting of the inner edge, on correction of pronation, is readily appreciable without the aid of the glass plate. In view of the mechanism of adjustment of the sole to the ground, above described, it must mean either stretching of the calcaneo scaphoid ligament, or else bony change. In either case it has a practical bearing, as showing greater strain on the muscles, if the patient tries to stand properly, and is theoretically important as serving to show that the inner side of the foot gives way first. It is worth noting that we have seen no evidence in our cases of early breaking down of the external arch in pronated feet, or in the intermediate stages. So far as they go, then, our data tend to confirm v. Meyer's theory of flat-foot production rather than that of Lorenz.

Before passing to treatment certain points may be emphasized of more direct interest from all this mass of detail.

(*a*) There is a frequent class of feet, often disabling, which have nothing in common with flat-foot, anatomically, save the pronation.

(*b*) This pronation involves no appreciable change in the bones or ligaments in the majority of cases, and correction of the vicious standing position gives a full anatomical correction. What determines the further progress toward flat-foot cannot be said. Hoffa and of late Nasse[4] are inclined to assume a yielding bony structure as at least a frequent cause.

Intermediate stages are seen, but the great class of pronated feet should be held separate clinically from flat-foot, especially in regard to prognosis of treatment.

(*c*) The occurrence of symptoms seems to depend essentially on the reaction to overstrain of ligaments and muscles, and is apparently the result of a degree of pronation such as to bring the burden of support for a great part or the whole of the day on the ligaments. This necessary degree of pronation varies widely, and would seem to be indicated not so much by the absolute degree of pronation as by the disappearance of the reserve of pronation. There is, of course, much individual difference of reaction, and certain cases seem to stand habitually with full strain on the ligaments, and do heavy work, yet have no symptoms.

(*d*) This reserve of pronation, which seems of some importance, may be accurately measured by the angle method proposed.

(*e*) The measurement of the angle gives a record of the anatomical pronation existing, and is of value in showing the mechanical disadvantage to be overcome by muscular correction, and for estimating the degree of support required, or the value in correction of a given supporting apparatus.

TREATMENT.

In the treatment of pronated foot the end aimed at is correction into that position of moderate supination which is normal in standing. The maintenance of this position is normally largely dependent on the muscles. If the patient can be induced to learn to be conscious of pronation, and to correct voluntarily by muscular action, much will be gained. If the muscles are weak, systematic exercises — as outlined by Ellis, Roth, and adopted by other writers[5] — will help.

The disadvantages under which the foot works must be minimized by avoiding toeing-out in walking or standing.

The importance of proper shoeing need not be dwelt on here; its importance has been fully and often explained. A further lessening of mechanical disadvantage may be accomplished by the use of the Thomas sole.

Many cases, however, require some actual mechanical support, for a time at least, for muscular control is only gradually learned, even if the patient persists, as many do not, and often it is necessary to give the stretched muscles a period of rest before they can take up their proper function. The simplest form of support is the felt pad beneath the inner arch, often most efficient as a temporary measure. In the same category comes, for acutely painful cases, the application of adhesive plaster strips from the outer side of the foot beneath the sole and up the inner side of the ankle and leg, holding the foot in the desired supination. This method is especially serviceable if combined with the felt pad.

For firmer support metal plates have been the usual scheme. As ordinarily applied they are open to several objections:

(*a*) They are clumsy.

(*b*) They interfere with the action of the muscles, and make constant pressure on the muscles of the sole of the foot.

(*c*) They either do not embrace the outer side of the foot at all, in which case the foot tends to slide off outward, and bears excessively on the outer side of the boot. Such a plate lacks efficiency as a support, and may be a cause of discomfort.

(*d*) Or, they support the outer side of the foot at one point only, thereby losing a valuable point of support, in that they do not directly work against the abduction of the front foot on the calcis.

(*e*) They act ordinarily more as support from beneath than as direct aids against inward rotation, and often simply transfer the point of weight bearing without ensuring full correction of the vicious position of the foot.

These objections we have tried to avoid in an apparatus which is herewith presented (Fig. 8). It is relatively light, seems, being an elastic skeleton, to give comparatively free play to the foot muscles, and corrects satisfactorily, preventing extreme pronation, resisting pronation in lesser degrees, and even in the corrected position fitting the foot closely, with slight lateral pressure outward. It is supported on the boot sole, front and back, on the inner side, so gaining an effective fulcrum. The pressure on the foot comes to some extent as moderate elastic support of the inner side from below, but mainly as elastic pressure outward applied just below the tuberosity of the scaphoid.

At the outer side are two points of support, and the action of the plate under weight is to produce a relative adduction of both the front foot and the hind end of the calcis — that is to say, to carry the cuboid into supination with relation to the calcis. In this way correction is obtained by lateral thrust and counterpressure, which corrects more certainly than support beneath, and interferes much less with the normal bearing of the ball of the foot on the boot sole.

The apparatus is made of strips of spring steel, eighteen or twenty gauge, riveted together as shown, made to fit a cut-out plaster cast, which is taken in the corrected position. The pressure plate is of aluminum bronze. The whole apparatus is then fitted to the foot before tempering; the bars along the inner and outer side and the anterior cross-bar permit a good deal of actual support to be given locally where it is needed, as in cases where it is desirable to support the anterior arch. After fitting, the apparatus is given a spring temper and is covered with leather, a thin pad of felt being fixed between the leather and the pressure plate, if necessary.

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[4] Hoffa: Langenbeck's Arch., 1895, li, 40. Nasse: Deutsche chir. Lief, 66, I. Hälfte, S, 131.

[5] Hoffa: Loc. cit. Whitman: Boston Medical and Surgical Journal, 1888.

The apparatus is not intended for flat-foot or for feet with any appreciable bony change, nor for heavy patients. There are also cases of uncomplicated pronation which may for a time need a rigid support; for such cases, of whatever class, a plate on the lines of Whitman's, but furnishing two points of support externally, would seem to meet all requirements; often a simple arched steel plate without external support will suffice.

For the ordinary pronated foot, however, the apparatus here presented seems, so far as we have used it practically, sufficiently light and comfortable, checks vicious standing and tends constantly to correct pronation, while to some extent permitting the normal muscular use of the front foot, and allowing the rotation of the foot incident to its normal use. In this way it favors a normal gait, and facilitates the active use of the foot, which is necessary if we are to attain a cure, not merely the alleviation, of the pronated foot.

In closing, it may be said that this paper, in so far as it relates to treatment by apparatus, is a preliminary one only.

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EPIDEMIC JAUNDICE.[1]

BY E. H. POMEROY, M.D., CALUMET, MICH.

"Jaundice is strictly never an individual disease, it is merely an affection or a symptom of disease." These words of Austin Flint are as obvious and axiomatic to-day as when they were uttered; but as it is a symptom dependent upon so many and various conditions, it is impossible to wholly discontinue it from pathological nomenclature.

The object of this paper is to place upon record a few facts pertaining to an epidemic of jaundice which prevailed in Calumet and vicinity during the summer and fall of 1897. Jaundice in this case and in this paper will be referred to as meaning catarrhal cholangitis without the presence and irritation of biliary calculi.

The jaundice produced is what is known as hepatogenous jaundice. Professor Fitz, in the "American Text Book of the Theory and Practice of Medicine," mentions the opposite views of Ponfick and Stadelmann. In this, Ponfick elaborately demonstrates how hematogenous jaundice occurs, and Stadelmann demonstrates very conclusively that hemotagenous jaundice never occurs. These speculations are foreign to the purpose of this paper, and are mentioned merely in passing for the benefit of those who may be disposed to enter more elaborately into possibilities concerning the etiology.

For the purpose of this paper, hematogenous jaundice as it appears in typhoid fever, pyemia, cancer, aneurism, etc., will not be referred to except to exclude it from consideration.

Although the term "epidemic jaundice" seems to be well recognized in literature, yet it was entirely a new term to all the physicians in Calumet. We have mentioned the epidemic to a number of professional men visiting us and to a number whom we have visited, and almost invariably the term has seemed to strike the auditor as something unusual if not entirely new. Strümpell says, in his well-known work: "Experience has repeatedly shown that often, particularly in spring and fall, this disease, catarrhal jaundice, comes like an epidemic," and in almost every volume of Sajous' "Annual" is a record of an epidemic of jaundice occurring somewhere. Professor Graham, of Toronto, in the recent "American System of Medicine," by Loomis and Thompson, says: "Jaundice occurs frequently in epidemic form," and mentions records of such epidemics confined to one or two villages, or to certain garrisons.

In looking through the literature of jaundice, simple catarrhal cholangitis, either sporadic or epidemic, is attributed by the authors, almost unanimously, to a gastro-duodenal catarrh. This catarrhal condition of the mucous membrane of the duodenum causes a catarrhal inflammation and thickening of the duodenal end of the common bile duct. This inflammation and thickening of the end of the duct produces a partial stenosis and a plugging of the lumen with thickened mucus — this, in turn, causing a damming back of the bile, and a reabsorption of the bile pigments with, perhaps, some of the more toxic elements of bile. It is not the purpose of this paper to contradict this theory of the etiology of jaundice. It is, however, noticeably strange that a disease depending so entirely upon gastro-duodenal catarrh for its origin should be so uniformly free from any symptoms of gastro-duodenal catarrh. This seems to be recognized by all of the authors when reaching the subject of treatment in their articles upon jaundice — all, almost without exception, advising a treatment to excite the activity of the stomach and duodenum, and the incidental activity of the liver and hepatic and cystic ducts and membranes.

Speculation in the etiology of jaundice is always excited when one attempts to comprehend either the immediate or the remote cause of the discoloration of the tissues. This speculation is especially excited by study of the epidemic which it is my purpose to record. If the cause of catarrhal cholangitis be always an extension of inflammation from a catarrhal duodenum into the mouth of the hepatic duct, as is claimed by some, or whether it be due to a toxin in the bile causing an irritation of the absorbent tissues, as is claimed by others, whether it be a transformation of hemoglobin into bilirubin, as is claimed by Semmola and Goeffrédi, or whether it be a simple cholemia from the absorption of coloring matter from the bile, there are still features in the etiology which are hard to understand, and the epidemic to which I refer, to me increases the number of questions to be asked about the etiology, and to add but little that will throw light upon the answers to those questions. This is from the fact that the epidemic, although quite extensive, was uniformly mild, without a death, and with very few grave symptoms or noteworthy sequelæ.

My own opinion — and this opinion is shared by most, if not all, of the physicians in Calumet — is that the cause is a specific infection, to a considerable degree contagious, and dependent to some extent upon the altitude of locality, and little if at all influenced by temperature; and, in the Calumet epidemic, polluted water, as a factor, either for drinking or culinary purposes, could well-nigh be excluded.

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[1] Read at the Thirty-third Annual Meeting of the Michigan State Medical Society, May 5, 1898.

The infectious agent seemed to pollute the air of the room to a marked degree, as evidenced by the increased severity of the disease in the cases of those members of the family who were among the last to contract the disease. For example: a child exposed to the disease would become ill, and would be kept at home, and successively five, six or seven other members of the family would contract the disease, and invariably the last one in the family affected would manifest the severest symptoms. The next neighbor appearing to obtain the disease from association with this family would show the same progression from mildness to greater distress from the first one in the family to the last, and the presence of the disease in the house appeared to concentrate the infectious element to such a degree as to cause more pronounced symptoms in those the longest exposed to the contagium before contracting the disease. I cannot think the jaundice in the Calumet epidemic could have been caused simply by a mechanical occlusion of the ends of the bile ducts containing normal bile, but rather that some toxic product of the infectious element rendered either the bile abnormally absorbable or the tissues abnormally absorbent. Whether or not epidemic jaundice be always due to the same infection is somewhat doubtful. It is difficult to believe that the epidemic in Calumet, in Chasselay, and the one in Paris, where, as in Calumet, there was not one death, could be the same as the one in Essen, where the mortality was very high, or the one in Martinique, where there were 20 deaths in 30 cases. This is perhaps not less explicable, however, than the mortality rates in various epidemics of diphtheria.

This outbreak commenced in June, 1897. It prevailed in Calumet, and by Calumet I refer not only to the Calumet and Hecla mining location but also to the adjacent locations and villages: Tamarack, Osceola, Centennial, Wolverine, Kearsarge, Allouez, Red Jacket and Laurium, containing in all a population of 30,000. The elevation of land is about 700 feet above the level of Lake Superior. It is on the top of the ridge in the middle of Keewenaw Point, about five miles from Lake Superior, both on the east and west, and at the southeast lies Torch Lake, which is an arm of Portage Lake, which lies twelve miles to the south.

One peculiar circumstance in connection with the epidemic is, that although the communication is very active and free between the people living at the mines and the people living at the mills, five miles distant, at Lake Linden the epidemic did not exist along the lake either at Lake Linden or at Portage Lake (Houghton or Hancock), or at the Lake Superior water-works to the west of the mining location.

Between June, 1897, and January, 1898, there were about 675 cases of jaundice. The most of these cases were in children under eight years of age; the youngest was three months of age. In the whole number of cases there were approximately 30 cases among adults. In the epidemics cited by Professor Graham it is stated that the younger soldiers were most frequently afflicted in the garrisons, and children were the most frequently afflicted in other epidemics of this disease. The mortality varies greatly. In Essen the mortality was very high, while in the epidemic at Chasselay and the one at Paris there was not one death. In an epidemic at Martinique there were 20 deaths in 30 cases, most of these being pregnant women. In Calumet the cases were about evenly divided between males and females.

It is the impression of all of the physicians attending these cases (in the Calumet epidemic), that the onset of the disease in adults was attended with much more pain and distress than with the children.

This impression may be the result of imperfect observation by the physicians and by the parents of the children. Generally the first symptom exciting the alarm of the parents was the discoloration, and then the physician was called. This discoloration among the adults did not occur until from two to four or five days following the onset of the disease. Presumably this was the case with the children to some extent, although we cannot believe that the attacks generally were ushered in with as much pain and distress in those cases attacking the children as in those attacking adults. In every case attacking an adult the pain was very much the same as a classical attack of colic from the passage of gall-stones, although generally somewhat milder. During this epidemic it was noticed that those patients who had for some years been subject to an occasional attack of cholelithiasis seemed to have attacks during the height of this epidemic. Within the space of seven weeks, at the height of this epidemic, there were more attacks of cholelithiasis, confirmed by the recovery of gall-stones from the dejecta, than were ever known in this community, in the same length of time, before or since. During one day I personally attended four women in attacks of gall-stone colic, and the gall-stones were found in the stools of three of these patients within forty-eight hours of these attacks. In three of these cases there was marked jaundice, but very evanescent in character, lasting not more than from one to three days.

The exciting cause of the jaundice cannot be traced to any pollution of drinking-water. The majority of those afflicted used habitually pure water drawn from Lake Superior; the others used, some of them, water from the Tamarack Dam, which is water subjected to frequent examination and uniformly good; others used wells, and still others, filtered rain water.

The disease appeared to be contagious to the extent that it appeared to progress along neighborhood lines. There would be from one to seven cases in a family, but in no case did it attack every member of a family. In one family of eight people there was but one case. These eight people were all adults. The one case was a woman who has a number of grandchildren living in the community who habitually visit this house; 12 of these grandchildren were jaundiced, but only one of the six adults among the parents of these grandchildren. In another family in the next house, of four people, there was one case; in another house about 400 feet from these, in one end of the house there were seven people of whom five were jaundiced; in the other end of the same house there were five people among whom two were jaundiced. In one end of the next house to this there were four people, of whom three were jaundiced; in the other end of the house there were four people and none jaundiced. In the next house were eight people, of whom six were jaundiced; in the other end of the same building there were four people, of whom two were jaundiced. In the next house were seven people and none jaundiced. Across the street from this were two families, six people in each family; and of these 12 people, three were jaundiced. In another house nearly adjoining these were 12 people, all adults, and only two were jaundiced.

Another instance appearing to show contagion: four of five boys who habitually played together were all attacked with the disease at about the same time. In each case these four boys were the first to have the disease in their families; 12 others in their families were subsequently attacked. The period of incubation appeared to be from three to fourteen days. The remaining one of the five boys mentioned did not contract the disease at all; and although there are six people in his family, of whom three are children, none of them contracted the disease.

The weather during this epidemic was not unusually severe, and there was no other epidemic prevailing in the community at the time. We made several efforts to isolate some positive etiological factor in the disease, but wholly without success. The course of the disease was extremely mild; there were no deaths and, consequently, no autopsies, and the symptoms were not sufficiently alarming to excite either the family or the physician to extraordinary acuteness of observation. In a great many cases we made very painstaking analyses of blood, urine, feces, sputum and stomach contents; but these all failed to give us any light about the etiology of the disease. The symptoms were, as previously stated, mild; this was especially so with the children. There would be generally a rise in the temperature of one or two degrees; sometimes languor, dulness, irritability, occasional vomiting; and when from the outset of the disease the typical discoloration was delayed beyond a week, it was noticeable that the case was more severe, although in the severest cases it was remarked that upon the appearance of jaundice there was immediate amelioration of the more distressing symptoms. This description of symptoms applies generally to those cases which were not the first to be taken sick in the family. The first symptom, in the majority of cases, to cause the physician to be called to the family, was the appearance of jaundice; the alarm was excited by the discoloration more than by the severity of the other symptoms. It was frequently possible at this time to get a history of previous illness on the part of the children, but which, before this discoloration, had not been considered sufficiently severe to warrant the parents in sending for a physician.

Another feature of the disease which perhaps might here again be remarked, is one noticed by a number of physicians, namely, that those children who were the last to be taken sick with the jaundice showed the severest symptoms.

The character of the jaundice was unusual in being of a paler yellow than is ordinarily found in catarrhal hepatitis, and of much shorter duration. While among the 675 people attacked during this epidemic, there were some in whom the jaundice persisted for three or four weeks, the overwhelming majority were not jaundiced more than three or four days. In some patients in whom the jaundice could be most confidently predicted from the prodromic symptoms, and in whom the jaundice did appear, it was not well marked more than from thirty to forty hours.

In my first call to one of the cases I was accompanied by Professor Dock, of Ann Arbor. The patient was a woman, aged fifty, who had been ill but a few hours; it appeared a characteristic, rather mild case of cholelithiasis. I predicted that the woman would be jaundiced within twenty-four hours; twenty-four hours passed with no appearance of jaundice, but on the following day, forty-eight hours from the attack, the jaundice was well marked, but disappeared on the third day, and there were no other cases among four people in that family; but under the same roof in another family of seven people, there were five attacked with jaundice.

The sequelæ were unimportant; in not more than one per cent. was there any enlargement of the liver or spleen one month after the appearance of jaundice, and at the present time, April 20, 1898, I am unable to find any case showing any symptoms referable to the jaundice. The only exception I can make to this statement is that several of the children who had previously been thin and delicate showed marked improvement in nutrition after the jaundice. This was very marked in a great many cases.

The treatment followed was generally the treatment of ordinary endemic or sporadic catarrhal jaundice. In adults an anodyne was first administered, followed by a vigorous cathartic, either a mercurial or saline, and then the phosphate of soda given until the stools were of normal color and the bile acids had disappeared from the urine. We still consider phosphate of soda our best hepatic stimulant, and I believe we are justified by the best authorities. Not that the best authorities are agreed upon the action of soda upon the liver; apparently about half of the very best give it because it increases the secretion of bile, and in the bile ducts the increased amount of bile acts by flushing out the inspissated mucous plugs in the ends of the bile ducts, and thus cleansing the ducts and relieving the hepatic cells from increased absorption. The other half have proven very conclusively that the soda salts in small doses have no effect whatever upon the amount of bile secreted, and that large doses decrease the amount secreted. These, however, use the soda salts as an hepatic stimulant on the theory that they produce an alkalinity of blood which affects the bile secreted, and this bile in the ducts is rendered more solvent to the inspissated plugs, and relief is thus obtained.

Other treatment which was entirely symptomatic, yet not directed to the discoloration, was for the itching, the hebetude, the weakened heart's action, anorexia, etc. For the itching, probably the best remedy at our command, in this as in simple jaundice generally, is the daily subcutaneous injection of from one-twentieth to one-fourth of a grain of muriate of pilocarpine, though I doubt if Witkowski's claim, that a malignant diagnosis can with certainty be made where this treatment fails to give relief within eight or ten days, can be sustained, yet there was nothing in this epidemic to controvert any theory concerning malignant hepatic disease. In many of our cases, however, we did give a reasonable amount of attention to the daily amount of excretion of urea. When this is kept at a normal amount, the physician can expel, from his own mind, at least, any danger of the jaundice being due to malignant disease, which he may previously have suspected.

Clinical Department.

A SUCCESSFUL PYLORECTOMY, WITH REMOVAL OF A PORTION OF THE PANCREAS, FOR CANCER OF THE PYLORUS.[1]

BY MAURICE H. RICHARDSON, M.D., BOSTON,

Visiting Surgeon to the Massachusetts General Hospital.

The following case is the first and only one of pyloric cancer which I have found on exploration to be favorable enough to encourage me to attempt complete extirpation of the disease. Considering the frequent occurrence of cancer in this portion of the alimentary tract, the early manifestation of its presence, and the hopelessness of medical treatment, it is a matter of regret that the surgery of gastric cancer has received thus far in this community so little attention. It is, of course, natural that the surgeon, and through him the physician and his patients, should be prejudiced against a procedure which is thought to be almost invariably unsuccessful. Greater experience in operations upon the stomach, however, will doubtless lead us to be more hopeful as to the results. The ever-increasing percentage of permanent cures of cancer in the breast, after early operations by improved methods, make us confident that the results will grow still better as the importance of early and extensive dissections becomes generally realized. It seems, therefore, not unreasonable to hope that early and extensive dissections in malignant disease of the stomach may result in many cures. Even admitting the serious nature of gastrectomy[2] and pylorectomy, greater experience with these operations, performed when the patient's strength is good, will probably lessen the mortality greatly; for there is every reason why operations upon the stomach should succeed. The structure of its walls, its accessibility, the facility with which plastic methods and suturing may be applied — all render the prospect of success encouraging. Yet unless the disease is recognized in its early stages, a permanent cure can hardly be expected, no matter how successful the immediate operation may be.

Annular strictures of malignant origin, whether in the pylorus or in the intestine, are, in the beginning, slow to involve contiguous structures or to invade lymph glands; — the disease is limited to the tube itself. Thorough extirpation at this time is favorable for both immediate and permanent results, and encourages early explorations in cases of suspected cancer. I believe that a digital exploration of the stomach and the pylorus is justifiable in all cases in which cancer is suspected, and that in the absence of positive contraindications such exploration should be made, with the understanding that extirpation shall immediately follow if the lesion is favorable for this operation.

In the following case the diagnosis presented no difficulties; the prognosis was unfavorable for operation because a tumor could be felt — all cases with tumor having proved in my experience hopeless on exploration. The tumor was freely movable, however, and apparently did not involve the liver or other organs. Owing to the close relation of the tumor to important structures, the operation seemed formidable. These structures, however, especially the great vessels and their branches to the stomach, to the duodenum and to the pancreas, were easily recognized and either tied or avoided. The cut surface of the pancreas was the source of some hemorrhage, which was easily checked by ligatures. The approximation of the open ends of the stomach and the duodenum was accomplished without difficulty; the line of suture seemed perfect.

Mrs. S., age sixty-seven, came to me April 7, 1897. For two years she had had pain in the region of the umbilicus, with loss of sixty pounds in weight. Vomiting was a prominent symptom early in the disease, but it had ceased some time before she came to me. She had been treated by the water-cure. I found a movable tumor in the epigastrium, and sent the patient to the Massachusetts General Hospital. Her symptoms in detail are omitted. Suffice it to say that a diagnosis of cancer of the pylorus was made, and exploration advised. It was not expected that the conditions would justify attempts at extirpation.

The operation was performed on April 21, 1897. There had been a preliminary lavage by Dr. Young. The tumor was found to be connected with the pylorus, and to be about as large as a lemon. No masses could be felt about it; no glands behind, above or below it; it was freely movable, and could be withdrawn from the abdominal cavity outside the line of incision. The case seemed a favorable one for operation.

The mass was accordingly pulled up and out as far as possible, and well packed about with gauze. I first separated the layers of omentum to get at the posterior part of the tumor. The gastric artery and the gastro-epiploica dextra were tied, and the mass separated from the attachments of the pylorus and the duodenum. It was then cut out well above and below by means of scissors. The tumor was clearly connected with the head of the pancreas, a portion of which was therefore excised.

The mucous membranes were first united with continuous silk suture, which brought the ends into partial approximation and stopped the hemorrhage. The peritoneal surfaces were adjusted leisurely and carefully with interrupted silk sutures, one row being applied. Extravasation was provided for by means of five small gauze wicks. The time of operation was one hour.

At the end of a few days the wicks were withdrawn. There was considerable leakage of a fluid which proved to be pancreatic. The discharge gradually grew less and finally ceased. The patient left the hospital on May 28th.

This patient's recovery was owing, in my opinion, to the use of gauze which provided an outlet for leakage. In extensive plastics upon the stomach, and especially in excisions of portions which by their shape require elaborate incisions for accurate approximation, the dangers of extravasation are great, both from the technical difficulties in the way of making a tight joint and from the action of the gastric juice. I consider some provision for drainage, therefore, essential. Of about twenty circular enterorrhaphies, in which the portion excised varied in extent from a V-shaped segment to a five-foot coil — all the cases that I can recall without consulting my records — six died. Five died of shock within a few hours; one died of peritonitis from the original extravasation; all the rest recovered. Many of the patients had a temporary fistula from leakage between the sutures. It is safe to say that most would have died had the abdomen been closed. In simple gastrotomies the line of incision is so perfect that drainage is not necessary, and I have never employed it.

The subsequent history of the foregoing case shows that the operation, though immediately successful, was too late to prevent recurrence. For some months the patient continued to gain in health and strength. She was able to be up and about the house. The wound became entirely healed. She took food well; the bowels were regular; there was no pain. In September, however, she noticed that "her stomach was growing hard." From that time she failed gradually, and on January 26, 1898, nine months after the operation, she died.

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[1] Reported at the Clinical Meeting of the Massachusetts General Hospital.

[2] Since the operation upon this case three successful gastrectomies have been performed — one by Schlaker, one by Bingham and a third by the writer. The last, soon to be reported in this *Journal* is doing well, two months after the operation (May 31st).

The recurrence and death in this case by no means contraindicate the radical operation; they rather stimulate us to renewed efforts for early interference. Had exploration been resorted to two years before, when the pain in the umbilical region first became persistent, the result, it may safely be said, would have been quite different.

In other abdominal organs persistent pain calls attention to the possibility of some serious lesion — to gall-stones, to appendicitis, to renal stone, to pelvic growths. Pain in the epigastrium always suggests cancer of the stomach, if the age of the patient is such as to make this diagnosis probable. Other symptoms confirm the suspicion. Tumor is almost the only sign that proves the diagnosis — but this sign proves also the hopelessness of the case. Pain, vomiting, hematemesis, accompanied by interference with digestion and loss of flesh, justify exploration. If on exploration cancer confined to the stomach is found, the most extensive dissection is indicated, in view of the hopelessness of the case under palliative treatment.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

(Concluded from No. 4, p. 90.)

Digitalis in Mitral Disease.

IN mitral stenosis the strain to effect this equilibrium of the two circulations falls upon the right ventricle. The features of mitral stenosis are a high pulmonary and a low systemic blood pressure, a regular slow pulse, a tendency to pulmonary congestion and systemic anemia. Whilst these conditions are maintained digitalis can do no good. The indication in cardiac distress arising in mitral stenosis would be to relieve the right heart by unloading the venous system by direct venesection or intestinal and hepatic derivatives, and a restricted diet and treatment of pulmonary complications as the urgency of the symptoms might require, but when these conditions being satisfied, the pulse still remains quick and irregular and the right heart embarrassed, the employment of digitalis is certainly indicated, and in the presence of cardiac need consideration of raised arterial tension may, as a rule, be disregarded since the first and predominating influence of the drug is upon the heart. As soon, however, as the cardiac action is restored to regularity, the arterial effects of the drug must be remembered and while endeavoring to maintain, without increasing, its effects upon the heart, by greatly diminished doses, any undue action on the vessels must be watched for and avoided.

In mitral regurgitation with commencing or established heart failure all the conditions that call for the beneficent action of digitalis are present. This does not apply to acute cases nor to the presence of a mitral regurgitation in a senile heart.

The most common mistake that one observes in the use of digitalis is that too large a dose is prescribed at first, which tends to premature arterial contraction and cumulative effects. With the appearance of these physiological symptoms the drug is stopped and some other medicine substituted, until the pulse again calls for its administration. In this haphazard way of using digitalis the heart is never held in good control. In exceptional cases, where there is urgent need to push the drug, digitalin is best used subcutaneously. In ordinary cases a dose of ten minims of the tincture every four, or fifteen minims every eight, hours, or five minims every waking hour is sufficient. Thus given, the patient being at rest, it generally takes about three days before the pulse is under control and the urine begins to increase. When its decided effects are thus gradually developed, the drug should be steadily continued in doses calculated to maintain its effect. With ordinary watchfulness there is no risk whatever; timely warning of excess is given by the pulse, which, having become slow, begins to exhibit small intermediate beats and especially a tendency to go in couples. This is always a sign to reduce the doses or to omit for a few hours. An occasional mercurial will sometimes prevent the nausea that too often supervenes with digitalis, a change to digitalin in equivalent doses may be tried or a tumbler of very hot water be taken occasionally. In some cases it is not to be overcome except by omitting the drug; the patient is usually well under the influence of digitalis before this symptom appears, in which case a small dose of digitalin by the mouth or hypodermically may be sufficient to maintain its effect upon the heart.

In speaking of digitalis, the drug is regarded as representing the whole therapeutic group. Digitalis is the most efficient member, strophanthus comes next. The one reason for its use is that it affects the small vessels less; this gives it an advantage in some cases, particularly, perhaps, in carrying on the effects of digitalis in convalescent aortic, regurgitant and mitral stenosis cases. But under most conditions this very action upon the arterioles is one of the valuable attributes of digitalis and explains possibly its superiority over strophanthus. The drugs may be combined when it is desired to secure an increased cardiac effect without using digitalis in doses large enough to contract the vessels too much. Convallaria comes next as a cardiac tonic in mild cases.

From a therapeutic point of view the osmotic circulation in the cellular tissue and serous and mucous cavities is scarcely less important than the vessel circulation discovered by Harvey. The occurrence of dropsy may sometimes afford time for the readjustment of the circulatory balance in the heart and vessels. But if with the help of remedies this does not take place and the dropsy advances, interference becomes imperative when it is estimated that the pressure in the cellular tissue becomes great enough to equal or exceed the pressure in the capillaries. The fluid should be renewed by the employment of Southey's tubes, incisions or simple punctures.

Exercise in the Treatment of Heart Disease.

Exercises have been reduced to a system in three grades: massage, the resistance exercises, or their equivalent in the mechanical methods introduced by

Zander of Stockholm in 1872, and others, and the graduated walking exercises of Œrtel.

Massage.

Massage is a means of helping on the convalescent stage of acute heart affections and of combating the tendency to stagnant circulation in those who are disabled by chronic heart disease. The treatment is still more useful in maintaining the circulation, and mildly but sufficiently stimulating the coronary circulation in those who, bed-ridden or sofa-ridden from any other cause, tend on that account to impairment of heart nutrition, and suffer from chilly extremities, feeble pulse, torpid digestion and passive congestion of the lungs. The treatment is not to be advised in acute heart affections.

Resistance Exercises.

The effect of the Schott or Nauheim exercises may be said to be a stimulation of the heart's action, with some steadying effect and increased completion of systole, an improved circulation through the coronary vessels and an increased mobility of the blood by its readier passage in greater bulk through the muscles, thus relieving stagnation in the great internal organs, especially on their venous side. The graduated and observed exercises of Schott and Œrtel may be regarded as a counsel of perfection for those who can afford them as a preliminary to the return to that measure of active life of which their heart condition admits, and as a guide indicative of what that measure will be, and by what degree of ordinary exercise it may be arrived at.

Resistance exercises are especially adapted for the initial treatment of those flabby, irritable, "stuffy" hearts, using the term as applied to cases of fatty infiltration and impaired metabolism which are met with in people of venous plethora.

In cases of chlorosis with dilated heart after a preliminary week or two of rest the Schott treatment is valuable if combined with a dry, bracing climate and some chalybeate.

It is useful in commencing failure of the heart, in chronic valve lesions, combined with a more or less cessation from all other exercises, and also after such cases have been restored up to a certain point by digitalis treatment.

It is unsuited in all cases of acute endocarditis while there is any trace of activity of lesion remaining, and in cases of advanced cardio-vascular changes of the nature of sclerosis or in introspective people with neurotic hearts.

Œrtel's Treatment.

This treatment has been replaced very much by the Schott exercises, to which, however, it may be regarded as a sequel. Its chief advantage is that it is undertaken in the open air.

Exercise in General.

All the points that have been noted with respect to formulated exercises are common to other less regulated kinds of exertion of similar degree and severity.

Formerly weak-hearted people were not allowed to move, now they are made to walk. The swing of the pendulum is tending perhaps too much towards exercise.

Baths.

The strong brine and aërated baths of Nauheim and other places are unquestionably of much service in some circulatory disorders. It is well pointed out by Dr. Groedal that the baths and exercises are two separate therapeutic agents, and that in perhaps only 20 per cent. of the cases are they usefully employed in combination, although massage may be more frequently employed.

Acute Heart Failure.

The treatment of acute heart failure may perhaps be best referred to in connection with pneumonia of which it too often forms the fatal turning point. In this disease the conditions affecting the heart are (1) stress of labor, (2) blood supply and nutrition impoverished and vitiated, (3) innervation, excited and debilitated by the effects of shock and pyrexia.

It will be generally noted that the heart failure comes on suddenly, but there may have been one or two preliminary warnings of partial collapse, etc. At the very beginning of these signs ammonia should be given but should be changed after a few days for a mineral acid, of which dilute phosphoric acid is the best. Some digitalis or strophanthus should be added to the mixture and strychnine should be given separately either in an extra quantity or subcutaneously, if the absorbing powers of the patient are at all doubtful. But the most powerful remedial agent is oxygen, and should be at hand in all severe cases and should be given in good time as an occasional inhalation. In any case where heart failure threatens, the high temperature must be reduced by a degree or two by hot or cold sponging.

For sleeplessness a small dose of ten grains or twenty grains of sulphonal, taken in a hot fluid at 8 or 9 P. M., and with this preliminary a twenty-grain dose of bromide taken at 10.30 P. M. is often sufficient to secure some restful sleep. When delirium is a marked feature hyoscin in doses of one-two-hundredth grain subcutaneously, and repeated once or twice, may sometimes be used to advantage. Cases of persistent sleeplessness almost invariably prove fatal with heart failure. In these severe cases morphine should be given to secure a few hours' sleep and to give the nervous system time to recuperate, and to allow of some restoration of heart power before it is too late. Death has appeared to be averted in some cases by (1) a strong dose of food and stimulant, (2) one-third-grain dose of morphine with atropine, (3) the maintenance of aëration by the oxygen current being frequently played over the mouth and nostrils for a few minutes at a time. The oxygen may be warmed as it enters the bag by passing it through a coil of tubing immersed in hot water. Strychnine seems to favor this peculiar sleeplessness of patients when utterly exhausted, but its power is unrivalled as a cardiac stimulant and its use in cases severe enough to lead up to this condition is quite essential and it may be renewed on the effects of the morphine passing.

Acute heart failure in other diseases and from other causes requires a similar handling, varied to meet varieties in the case. Oxygen inhalations are particularly valuable in the treatment of heart failure due to fatty degeneration of the organ in old people. Cheyne-Stokes breathing is a symptom in these cases. Strychnine is a most useful cardiac stimulant.

Overstrain.

The treatment of an overtaxed heart and the lighter degrees of overstrain is simply a short period of complete rest, followed by steady but carefully-graduated exercise, calculated to maintain cardiac and general muscular circulation and nutrition without exciting the heart's action or increasing the blood pressure.

The treatment of overstrain in an unsound heart is involved in that of the heart disease upon which it supervenes, and the same remark applies to the more severe effects of strain, such as rupture of valves, aneurisms, and the like.

Infective Endocarditis.

In face of the dreadful mortality of 80 per cent. of the cases that prevail arsenical treatment must promptly be abandoned for any more promising remedy, and looking to the pathology of the disease, it would seem that in the modern development of serum therapeutics there is most to be hoped for its future treatment.

There have been recently reported four cases treated by antistreptococcus serum with the very encouraging result of three recoveries, but a considerable, and as yet unpublished, experience at the various large hospitals and in private has gone far to moderate enthusiasm for this method of treatment. It may be laid down as a principle governing treatment by this particular serum that the more distinct the history of a previous endocardial lesion, and a subsequent exposure to infection through a suppurative medium or a sewer-gas sepsis, the more appropriate the case for treatment. This rule would discourage its use in cases in which the pneumococcus, gonococcus or some other microbes divergent in character from the streptococci and staphylococci were concerned; and if with the recognition of this principle and its earlier and bolder carrying out more encouraging results are obtained, it will certainly follow that analogous measures will be found for the circumvention of the other forms of microbic action.

Reports of Societies.

AMERICAN MEDICAL ASSOCIATION.

MEETING OF THE SECTION ON THE PRACTICE OF MEDICINE, DENVER, JUNE 7–10, 1898.

(Continued from No. 4, p. 94.)

THIRD DAY.

SOME USUALLY OVERLOOKED PHYSICAL SIGNS AND SYMPTOMS IN CHEST DISEASES.

Dr. Norman Bridge, of Los Angeles, Cal., read a paper with this title.

Pulmonary tuberculosis is usually unilateral at the beginning, and so we have early a normal side of the body for comparison. By examining the two sides critically and comparing them with each other repeatedly, it is often possible to detect lesions that point unmistakably to incipient disease. We may find slight lessening of the vesicular murmur on inspiration, or slight increase in expiratory sound, at first without the tubular quality. Making allowance for the slight disparity between the two apices, if we can hear the expiratory sound better on one side than the other, there is an abnormal condition of the lungs. Later the tubular quality may be slightly perceptible.

In going over and comparing the two sides we should see if there is even a slight difference between them in: (*a*) length of the inspiratory sound; (*b*) intensity of the normal vascular quality of that sound; (*c*) length of the expiratory sound; (*d*) intensity of the sound and elevation of its pitch above what is normal; (*e*) vocal fremitus on the uttering of words that cause an extreme vibration, as *ninety-nine*; (*f*) the transmission on to the auscultating ear of the ordinary voice and soft whisper. Râles should be searched for on deep inspiration, with profound expiration, and on voluntary coughing.

Tuberculosis usually begins in a circumscribed region of one lung, or in the bronchial mucous membrane; and if there is any tendency to recover, a deposit of adventitious tissue (fibrosis) soon forms through contiguous lung tissue, which invariably changes the physical signs, the greatest change being near the focus of the disease.

Finding any slight changes in the two sides, we should carry our comparison all over the lungs and note where they are most evident. The back is the best region for this comparison. Listening over the lower zone of the lungs posteriorly the sounds are absolutely alike and normal on both sides; as we rise, listening every half inch and changing the stethoscope from one side to the other we strike a zone at about the lower angles of the scapula, where we can perceive that the vesicular murmur on inspiration is a trifle less pronounced and the expiratory sound perhaps a trifle more so and longer than on the opposite side. One inch higher up this disparity is more perceptible. Above this level the difference is progressively greater; as we ascend, the vesicular murmur is growing less and the expiratory sound greater, louder, longer and stronger and soon higher in pitch. Over the seat of the deposit the tubular breathing is most striking if the bronchi are not closed by phlegm.

If the deposit of connective tissue is slight, the sound does not reach an entire ablation of the vesicular murmur on inspiration, nor is there any ideal bronchial breathing, but only a slight increase in the loudness and length of the expiratory sound.

As the expiratory sound increases in loudness and rises in pitch, there is always a corresponding increase in vocal fremitus over the region, as well as in the transmission through the chest wall of the voice in phonation and whisper. With patulous tubes these sounds increase in loudness, as the solid substance of the breathing organ increases in mass.

Many things besides tuberculosis may cause a slight disparity between the two sides of the chest, and pleuritis is rather a common one. If the difference between the two sides is slight and uniform over the whole of both lungs at the back, and there are no other signs, then a former pleuritis is probably the cause.

In many cases the physical signs are markedly reduced, especially the râles, by deep inspiration and failure to expire freely. In a few incipient and slight cases this trick may hide all symptoms. The patient should be taught to expire profoundly. The diagnostic value of extreme expiration is not confined to the production of râles by the undisturbed flow of air through the narrowed air channels. Sometimes, if the patient will voluntarily cough at the end of such an expiration, râles will most unexpectedly be brought out. In a lung with beginning tubercular deposit in the upper part near the larger bronchi, the vesicular murmur is sometimes lessened over the whole lung, except the part that lies directly above the deposit, and there is very little expiratory sound with little of the tubular quality and few or no râles, while the vocal fremitus is still moderate in degree and the percussion resonance is nearly normal, but there is reduced transmission of voice sounds. Such a condition can only be explained by assuming complete closure of some of the bronchi, by pressure from without, by thickening of their walls or by thick phlegm.

Early in most cases of unilateral, localized tuberculosis there is greater cough during recumbency on the affected side, due to the tendency of the phlegm to run down into the smaller bronchi. Of course, as soon as the lesion extends to the lateral periphery of the lung, or if it should happen to begin there, this test will fail. It rarely fails from this region in an incipient case; it fails more often from the paucity of secretion. It is not unusual for this symptom to be pronounced early in a case, and the reverse symptom to be present later when the air channels of the periphery become full of muco-pus.

A striking tendency to error in considering chest signs is shown in cases of fluid in the pleural cavity in little children. Dulness on percussion is a sign in pleural effusions; but in small children there is little or no dulness over the lower part of the chest, especially on the left side; gas in the stomach or bowels almost completely masks this sign. If the pleural cavity is full to the apex, there is dulness, even flatness, at the top, which by absence of dulness low down leads to the eroneous theory of apical consolidation of the lung. The books make a fatally false statement when they say that the intercostal spaces bulge. They only do this when the pleura is tense nearly to bursting. They should say that the intercostal spaces are less depressible and more firm. Though lung sounds are not much transmitted through fluid, in a child's pleural cavity, faint bronchial breathing is heard. This fact, with the absence of bulging spaces, leads many astray.

Dr. Ingalls, of Chicago, believed that the front of the chest was better for making comparisons between the two sides in the majority of cases. He thought we should be very careful not to confound these early signs with other signs that have nothing to do with tuberculosis; he had seen many cases where the patients had been told that they had tuberculosis when such was not the case; it was a mistake in diagnosis, but the patient had been made miserable for life and driven to an early grave.

A pulse of 115 to 120 in a person otherwise well points pretty positively to tuberculosis. In text-books, the voice sounds are represented as being present over the fluid in pleurisy, but the speaker did not think that these voice sounds could be obtained in one case out of fifty.

Dr. Tyson, of Philadelphia, thought Dr. Bridge had struck the key-note when he stated that pleurisy with effusion had a diminished fremitus; a distinctive feature of pleurisy with effusion was the bronchial breathing with diminished fremitus; there is but one exception, that occurring in children with a purulent effusion; here, there may be an increase of the fremitus.

Dr. Edson, of Denver, said the rapidity of the pulse, especially if it was at the same time an irregular, nervous one, was a very suspicious sign, not only in advanced cases but in incipient cases of phthisis. This was not only of great diagnostic but was of great prognostic importance, particularly in cases in this high altitude of Denver.

Dr. Beggs, of Denver, remembered a statement made by Dr. Glascow, of St. Louis, ten years ago which had impressed him a great deal; it was that no man was to be considered capable of diagnosing incipient phthisis until he had examined a thousand chest cases. In cases of incipient phthisis there is an inconstancy in the occurrence of vocal fremitus. In many cases in which the anatomical conditions were practically the same, the character of the vocal fremitus and resonance varied; even in the same patient this varies from time to time.

As regards pleurisy, he referred to the case of a child of fourteen years, in whom the right pleural cavity was filled with a serous fluid, as was proven by puncture; in this case there was no bulging and no difference in the measurement of the two sides.

A sign which had given the speaker much trouble was that of muscular susurrus; every student should have his attention called to this sign.

Dr. Bridges closed the discussion. In his paper he had intended to call attention to a few of the possibilities and liabilities of error in making a diagnosis of particularly such diseases as phthisis, especially in their early stages. Muscular action was often a source of error and great trouble, especially to young practitioners; these men should be instructed to keep the muscles of the chest wall at rest during examinations.

He referred to the slight fibroses which might occur and which travelled downwards and were often so great as to interfere with chest examinations, especially if they be made from in front. If there is evidence of these fibroses extending below the fissure between the two lobes of the lungs posteriorly, there is strong evidence that there is a lesion of considerable importance situated above it. He wished to emphasize the point that the patient should be told to expire forcibly.

CHRONIC DIARRHEA ASSOCIATED WITH ACHYLIA GASTRICA.

Dr. Allen A. Jones, of Buffalo, read a paper with this title.

Among the causes of diarrhea the different conditions of the stomach that give rise to abnormal intestinal fermentation and irritation are of the utmost importance. For many years a form of diarrhea characterized by evacuation of the bowels after each meal, the stools containing considerable undigested food, has been termed lienteric. Formerly the explanation given for this was that the food was hurried through the gastro-intestinal tract so rapidly that there was no time allowed for digestion.

While this explanation is partly true, it was not until the gastric secretions were studied, and more known of the motor functions of the stomach, that it became evident that, although only a minor part of digestion was carried on in the stomach, yet the passage of much unchanged food was not likely to occur if the sphincter was normal and if there was an active secretion of gastric juice. The fact that a diarrhea is seldom lienteric, provided the gastric function is correct, is proof that this position is tenable. When foods are retained in the stomach long enough and chemical and mechanical changes of digestion proceed actively, the food is in a fair state of solution and will not pass through the intestines without being so changed that separate food elements will be unrecognizable.

If gastric secretion were normally active and yet the pylorus abnormally relaxed and patulous, food might be hurried through the intestines so as to appear unchanged in the feces, but such a condition does not frequently exist, as the pylorus is exquisitely sensitive to active secretion, and the circular fibres are reflexly stimulated so as to properly protect the orifice. If, on the other hand, gastric secretions fail and the gastric contents are not digested, we are most liable to have a condition of affairs liable to give rise to lienteric diarrhea, provided intestinal peristalsis is sufficiently hurried, or the succus entericus is diminished or absent.

In the gastric affection called by Einhorn "Achylia Gastrica" there is a suspension of the secretions of the stomach, which is due in some cases to atrophy of the gastric glandules, and in others is due to a nervous disturbance of secretion. Some cases may begin as a neurosis and go on to organic disease and atrophic changes. When the disease is established chemical change does not occur in the food. Finely divided carbo-hydrates may undergo more or less digestion, but albuminoids are not changed. There is a remarkable absence of fermentation. But little acetic or butyric acid is formed, even when much saccharine, starchy, and fatty food is ingested. Even when there is poor gastric motricity, and consequent delay in the passage of the gastric contents into the duodenum, there is practically no fermentation, which is the opposite of conditions prevalent in cases of gastrectasia from pyloric stenosis or atonic dilatation.

The causes of diarrhea in cases presenting an absence of gastric secretion may be various. One of these causes is the precipitate manner in which the stomach propels its contents into the intestines. Sometimes the stomach is empty one hour after a meal. Again the chronic inflammation of the gastric mucosa may extend into the intestines and give rise to diarrhea from chronic catarrhal enteritis, or the intestine may simply rebel from overtaxation, or the diarrhea may be the result of intestinal irritation from unusual toxic substances developed in the bowel.

Hemmeter found normal pancreatic and hepatic secretions in five cases of achylia associated with diarrhea, and hence thinks that extension of the inflammatory process is probably not the cause of the trouble.

The diarrhea differs in different cases. There are invariably several morning evacuations, and after the middle of the forenoon no further trouble in some cases; in others the diarrhea is post-prandial; in a third class there are many evacuations during the day, taking place irregularly. In some cases there is diarrhea every day; while in others it is periodic, coming on suddenly, lasting a week or two and then followed by constipation or by regular daily evacuations. In some cases there is a good deal of intestinal flatulency.

Pain is not a common symptom in these diarrheas. There is usually no elevation of temperature; the temperature is sometimes below normal. The appetite in some cases is voracious. The character of the stools varies. In some instances there is an abnormal amount of mucus. The discharges are frequent and watery. In some cases there may be constipation, but this is less common.

In the treatment of this intestinal affection hydrochloric acid is most efficacious; 20 to 30 drops of the dilute acid may be given after meals, and the dose repeated in an hour. Some give four to eight centimetres well diluted before meals. Jaworski says the acid is needed to develop the formation of pepsinogen in the gastric glandules. The acid is quickly neutralized and combined in these stomachs. In some cases its presence cannot be detected ten minutes after administration.

Dr J. M. Anders, of Philadelphia, thought that achylia gastrica occurred frequently in gastric carcinoma, atrophic catarrh of the stomach and neuroses of the stomach. He believed that lienteric diarrhea frequently depended upon catarrhal states of the intestines. He was surprised not to hear that this condition of achylia gastrica had been found associated with tuberculosis. In the majority of cases there was some great underlying condition co-existent — tuberculosis, amyloid degeneration, stomach neuroses, etc. — which should not be overlooked in the treatment of this affection.

An interesting fact, from a scientific point of view, he had noticed in certain conditions where, by the use of Ewald's test meal, there was an absence of hydrochloric acid and the gastric ferments in the gastric contents, namely, that, in spite of the absence of these associated constituents, there may be perfect intestinal digestion and absorption.

Dr. Stockton, of Buffalo, said that this symptom of achylia gastrica — diarrhea — does not depend upon one factor alone, and that it is largely a nervous expression. One patient of his had this trouble only when pregnant. Another had this diarrahea when at home; so soon as she goes away from home she is relieved.

Dr. Elliot P. Joslin, of Boston, said that in nervous affections the character of stomach contents and the great variability of the symptoms were interesting. Sometimes there is an acidity, sometimes hyperacidity; sometimes there is diarrhea, and sometimes constipation. The speaker then related a case of achylia gastrica in which was melancholia, enteroptosis combined with a nervous origin of the disease.

In the treatment of this affection he did not agree as to the use of hydrochloric acid. He related an experiment in which he took three eggs and added two or three pints of a ten-per-cent. hydrochloric-acid solution, and after letting it stand for a short time he found there was no trace of hydrochloric acid; it had all combined with the albumin.

Dr. Jones closed the discussion. As regards tuberculosis, it had been his experience to find achylia gastrica associated with the pulmonary form. In regard to the nervous side of the question, he stated that this affection had been found in stout women with hysterical manifestations, particularly those of middle life. He wished to emphasize the fact that constipation is a symptom of nervous significance. In many cases we do not get gastroptosis or enteroptosis, especially in male cases. There are some instances of irritable stomachs with quite a large quantity of free hydrochloric acid found in women with enteroptosis and gastroptosis, especially when they have floating kidneys.

ON NATURE'S CURE OF PHTHISIS, AND AN EFFORT TO IMITATE IT.

John T. Whittaker, of Cincinnati, O., read this very interesting and scientific paper.

Schlenker made a complete autopsy in 100 bodies, and found 66 were tuberculous; of these, tuberculosis was the cause of death in 53 per cent., was of great importance in 6 per cent., and was latent in 41 per cent. of the cases. These numbers are minimal, because the examination was a macroscopical and not a microscopical one. A true estimate of the frequency of this infection can be derived only from tests with tuberculin. It is universally conceded that two-sevenths of mankind succumb to tuberculosis of the lungs alone; two-thirds of mankind are affected with tuberculosis; and one-third die of the disease. Therefore in one-half of the cases recovery is complete, or the disease is reduced to such a quiescent state as to be practically non-existent.

What is the process of cure in these cases? Pretty much all the cases which have the benefit of altitude recover. There is something in altitude which gives first immunity, and in the second arrests the progress of the disease. Autopsy reveals the presence of adhesions, of nodules, of cicatrices and cirrhotic induration. The natural processes of cure seem to be initiated (1) by means which in some way chemically destroy the tubercle bacillus, either directly or by means of the action of toxins or antitoxins, or (2) indirectly by sterilizing, immunizing or invigorating the soil. We must bear in mind that phthisis, as we see it, is not a simple but a mixed infection, whereby toxins are intensified through symbiosis. Certain micro-organisms antagonize, others intensify, each other. The engrafting of the streptococcus pyogenes upon the tubercle bacillus produces toxins of a higher degree of virulence than belonged to either alone. One of the most important factors in the treatment of tuberculosis is the prevention of mixed infection.

Do we get any light as to natural processes from our successes with drugs? Creosote is the only drug which has held its place in the treatment of phthisis. Does it sterilize the soil, and is any such substance produced in nature? Unfortunately there is no good working theory to explain the action of creosote. It is admitted on all sides that this drug destroys all organisms that induce fermentation in the stomach without affecting the process of digestion; and the virtues of the creosote have been ascribed to the improvement of the nutrition, which sets in in some cases surprisingly soon. What would seem to lend support to this view is the superior virtue of the carbonate of creosote, the so-called creosotal, the least irritating to the stomach.

The only natural agents known to have an inhibitive effect upon the tubercle bacillus are some of its own products, to wit, the so-called various tuberculins which have been extracted from culture soils. Gross attempts have been made to imitate nature through the processes of cicatrization, notably by Landerer with cinnamic acid, which he found would induce a migration of leucocytes into the necrotic tissue of tubercle. This process was followed by the penetration into the mass by young blood-vessels, the formation of connective tissue with subsequent shrinkage and contraction. Of 50 cases treated, 58 per cent. were reported cured, 20 per cent. improved, and 4 per cent. unimproved, while only 9 per cent. died. The latest efforts to secure leucocytosis by the ingestion of various nucleins, enzymes, etc., find also only individual support.

Nothing in art approaches the efficacy of nature in controlling tuberculosis of the peritoneum by exposure of that structure to the external air. The speaker then cited as a sample of the sweep of surgery a desperate case of tubercular peritonitis, which recovered. The opening, the exposure, the irrigation of cavities in the lungs is not often followed by such happy results. Surgery fails for the most part in the lungs, probably because of the mixed infection, but more probably because the knife cannot reach, lay open or exsect the mother colonies in the bronchial glands.

Another attempt to imitate nature consisted in producing hyperemia in order to secure the effects of carbonic acid gas, because it had been shown that patients with heart disease attended with hyperemia of the lungs enjoyed a certain immunity from tuberculosis; so also with persons affected with emphysema. Also, in certain deformities of the chest, patients were exempt because a certain amount of carbonic-acid gas was distributed over a smaller surface. Traube produced this gas in the stomach with hydrochloric acid and bicarbonate of soda. Bergeon attempted to produce the same effect by means of the infection of sulphuretted hydrogen into the intestines.

(*To be continued.*)

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AMERICAN GYNECOLOGICAL SOCIETY.

Twenty-Third Annual Meeting, Boston, May 24–26, 1898.

FIRST DAY. — MORNING SESSION.

Dr. A. C. Sinclair, of Boston, delivered the

ADDRESS OF WELCOME.

In addition to his cordial greeting, he spoke of the development of the Society since its organization and predicted a brilliant future for its work.

The President, **Dr. Paul F. Mundé**, in the name of the Society, thanked Dr. Sinclair for his kind words of welcome and good wishes.

It was then moved that the members of the Boston Obstetrical Society be made the guests of the American Gynecological Society and be accorded all the privileges of such during the meeting. The motion was unanimously carried.

Dr. Edwin B. Cragin, of New York, read the first paper, entitled

CONGENITAL PELVIC KIDNEY OBSTRUCTING THE PARTURIENT CANAL, WITH REPORT OF A CASE OF VAGINAL NEPHRECTOMY.

As the results of Henry Morris's study of the autopsy records of the Middlesex and Guy's Hospitals show that congenital misplacement of the kidney within the pelvis occurs approximately in one out of a thousand individuals, the author considers this condition of sufficiently frequent occurrence to be of interest to the obstetrican, as a possible cause of dystocia, and to the gynecologist because it is generally mistaken for a new growth in the pelvis. Cases of floating kidney are not considered in the paper, only those in which the lack of mobility, the short ureter, and the arrangement of the blood vessels show the displacement to be congenital. The right kidney is more often misplaced than the left, although in floating kidney the reverse is generally the case. In 35 of the 40 cases reported in the literature the displacement was of the right kidney. In nearly all cases the opposite kidney was in its normal position. In one it was absent. The arterial supply of a misplaced kidney usually arises from one of the common iliac arteries, but in some cases has its origin from the aorta just above its bifurcation. The condition has been found in cases where there was some anomaly of the genitals, such as absence of the Fallopian tube, or malformation of the uterus or vagina. The symptoms vary. If there be hydronephrosis of the displaced kidney, pressure symptoms will be present. The condition is often unrecognized during life; still more often it is mistaken for something else.

The author has found reported but five cases in which congenital pelvic kidney has given rise to dystocia. In the first case the kidney obstructed labor in two confinements, the children, however, being delivered, and the patient lived to the age of seventy-five years. Autopsy showed the tumor which had obstructed labor to be the kidney.

The second case, occurring in Gusserow's clinic, was a woman with a transversely contracted pelvis. A tumor lying in front of the sacrum was made out to be the kidney. Labor was induced at the thirty-third week, but the child lived only twenty-four hours. In a second pregnancy labor was again induced, and the patient died soon after of edema of the lungs. Autopsy verified the diagnosis.

In the third case the patient had been delivered of two living children and one dead child. Labor was induced and the child lived.

The fourth patient was allowed to go within a few days of term, when labor was induced and a living child delivered after a difficult version. This woman had previously borne seven children without medical attendance, in spite of the fact that she had a rachitic pelvis.

The fifth case was a woman pregnant for the third time. The previous labors were long and difficult. After being in labor fourteen hours, she was seen by a physician who found her in collapse and the uterus ruptured. The woman died on the fifth day, and autopsy showed the left kidney fixed in the pelvis.

The case reported by the author was seen by him in consultation with Dr. Painter of New York. The patient, who was twenty-five years of age, had had two previous labors, the first being terminated by forceps, the second by version. She was then eight and a half months pregnant, and a tense, elastic tumor behind the cervix reduced the internal conjugate to about seven centimetres. The tumor was supposed to be an ovarian cyst, and, as it was evident that a living child could not be delivered unless something were done, it was decided to remove it. A vaginal incision was made and the tumor tapped. It was then found to be a distended left kidney firmly attached beneath the promontory of the sacrum. As it still formed an insurmountable obstacle to delivery, it was determined that vaginal nephrectomy was necessary. The vessels and ureter were clamped at the hilus of the kidney, the latter removed close to the clamps, the clamps replaced by ligatures, and the wound lightly packed with gauze. Seventeen hours later a well-developed child was born without difficulty. The patient made an uninterrupted recovery.

Dr. Howard A. Kelly, of Baltimore: I have seen three cases of misplaced kidney, but none was associated with pregnancy. In two of the cases the abnormal kidney was the left. In the third, seen in the practice of Dr. Hunter Robb, the patient was being operated upon for tubal disease when the kidney was found situated just below the brim of the pelvis and adherent to the mass. It was removed and the woman made a good recovery.

Dr. H. T. Hanks, of New York: To the author is due the honor of having performed the first vaginal nephrectomy.

Dr. A. Lapthorn Smith, of Montreal, then read a paper on

PREGNANCY FOLLOWING VENTROFIXATION, WITH IMPROVEMENTS IN TECHNIQUE.

The author's conclusions, based upon about 2,500 cases, reported by 41 operators in reply to a circular letter, and including 111 of his own, were as follows:

(1) That so far as curing retrodisplacements is concerned, whether retroflexion, retroversion, anteflexion with retroversion, and also prolapse of the uterus, ventrofixation, with its two buried silk sutures passing through the peritoneum and fascia, gives the most reliable results. Failures are unknown when the operation is performed in this way.

(2) Ventrofixation should be reserved for cases in which abdominal section is necessary for other reasons, such as detaching of adhesions and the removal of diseased tubes which caused the adhesions. When it is expected that pregnancy may follow, some other operation should be chosen, because:

(3) Although pregnancy only followed in 148 cases out of about 2,500, still in 30 per cent. of these, or 36, there was pain, miscarriage, or difficult labor requiring obstetrical operations.

(4) When suspensio uteri was performed, that is, the uterus attached to the peritoneum, only a few relapses occurred; but on the other hand, the patients were free from pain during pregnancy and the labors were less tedious; neither did they require resort to serious obstetrical operations. The uterus should therefore be suspended rather than fixed to the abdominal wall in all cases in which any part of the ovary is allowed to remain.

(5) A third method — namely the intra-abdominal shortening of the round ligaments — is preferable, it is claimed by some, to either ventrofixation or suspensio uteri. This may be done either by drawing a loop of the round ligament into the loop which ties off the ovary and tube; or, in cases in which the latter are not removed, simply to detach them from adhesions and shorten the round ligament by drawing up a loop of it and stitching it to itself for a space of about two inches. By this means, the round ligament develops as pregnancy advances, and the dragging and pain and other more serious accidents which are present in 30 per cent. of the cases of ventrofixation are certainly avoided.

(6) If the uterus is attached to the abdominal wall the stitches should be kept on the anterior surface but near the top of the fundus; the complications were more frequent when there was too much anteversion than was the case when the anterior surface of the fundus was attached to the abdominal wall.

(7) As large a surface as possible should be made to adhere, by scarifying both the anterior surface of the fundus and the corresponding surface of the abdominal peritoneum, in which case one buried silk will be sufficient to keep the uterus in good position.

(8) Several of the correspondents mentioned incidentally that they knew of many cases of pregnancy after Alexander's operation and that in no case was the pregnancy or labor unfavorably influenced by it. Alexander's operation should therefore be preferred whenever the uterus and appendages are free from adhesions.

(9) The results of Alexander's operation are so good that even when there are adhesions it might be well to adopt the procedure of freeing the adhesions by a very small median incision and then shortening the round ligaments by Alexander's method; after which the abdomen should be closed. This could be done without adding more than one-half of one per cent. to the mortality, which in Alexander's operation is nil.

THE TREATMENT THROUGH THE POSTERIOR CUL-DE-SAC OF ADHERENT UTERI

was the subject of a paper read by **William R. Pryor**, M.D., of New York.

The author advocated this method in preference to all others as a means of treating these cases. By employing the Trendelenburg posture, the operator is afforded as ample a view of the peritoneal cavity as in abdominal section, and is enabled to excise as much or as little of the diseased tissues as may be found there. It has the further advantage that it obviates the danger of subsequent hernia which so frequently occurs after Alexander's and the abdominal operation.

AFTERNOON SESSION.

Subject for Discussion:

HAS ELECTRICITY CEASED TO BE A USEFUL THERAPEUTIC AGENT IN GYNECOLOGY?

Dr. H. J. Garrigues, of New York, answered this question most strongly in the negative and described at length the various forms of electricity, their effects upon the different tissues, and their uses in diseased conditions of the female pelvic organs. He maintained that in certain cases which permitted of a protracted course of treatment, electricity could be employed with marked benefit and often ultimate cure. He cited the case of a woman, age forty-two, in which a myoma in the posterior wall of the uterus had entirely disappeared after thirty-eight applications of galvanism given during a period of nine months.

Dr. E. H. Grandin, of New York, was equally strong in his denunciation of electricity as a therapeutic agent in gynecology. He admitted that at one time he had been an enthusiast in his belief in the efficacy of this treatment and had made a most thorough study of it. After a trial of the Apostoli method which covered a period of several years, he had been obliged to take back all that he had said and written in favor of it, having found its use utterly without benefit in all cases and positively harmful in some. He had employed the method in a series of fifty cases of uterine fibroid, and in none did it cause any decrease in the size of the tumor, much less its disappearance, except in those cases in which the onset of the menopause was a factor. In this class of cases he considers the certainty of operative treatment much to be preferred to the doubtful, palliative effect of electricity.

Dr. G. H. Engelmann, of Boston, said that judging from the work of many members of the profession and from the journals in which their cases were reported, electricity in gynecology had by no means ceased to be a useful therapeutic agent. He has employed it in the past and still continues to employ it because he has obtained beneficial results from its use. That this method of treatment is perhaps employed less than formerly, he attributed to the fact that the times have changed and that results which can be accomplished slowly but safely by electricity may now be effected more rapidly by other means. The extravagant advantages claimed for the method by enthusiasts had also done much, he thought, to bring it into disfavor.

In the general discussion which followed, the method was almost universally condemned, and several of the members were most emphatic in their denunciations of it.

THE PORRO OPERATION *versus* TOTAL EXTIRPATION.

Dr. Hermann J. Boldt, of New York, read a paper with this title. The following are his conclusions:

(1) Total hysterectomy should be performed in preference to suprapubic hysterectomy with extraperitoneal treatment of the stump.

(4) The operation should never be performed unless absolute indications are present.

(3) The uterus can be rapidly removed by applying clamps on either side. The difference in time consumed in a Porro operation and in an ideal total hysterectomy is not more than a few minutes, because the elastic ligature is dispensed with and the proper attachment of the cervix in the lower angle of the wound nearly equals the time consumed in ligaturing the vessels and the peritoneum after removal of the uterus.

(4) When the child is dead *in utero*, the organ should not be opened for the purpose of first delivering it — the uterus should be removed *in toto* unopened.

The advantages of the total hysterectomy over the Porro operation are:

(*a*) Less danger of infection.

(*b*) Practically no danger from secondary hemorrhage.

(*c*) Less danger of intestinal obstruction.

(*d*) A shorter period of convalescence.

(*e*) Less danger of ventral hernia.

It has no disadvantages which cannot be overcome by a practical test.

SECOND DAY. — MORNING SESSION.

Dr. H. J. Garrigues, of New York, read a paper on

ANESTHESIA: OBSERVATIONS IN REGARD TO THE SCHLEICH MIXTURE.

The author recommends the use of the Schleich mixture in gynecological practice on account of its rapid evaporation and elimination from the respiratory tract, which make it especially desirable in prolonged operations and in those cases in which the patient is in the Trendelenburg posture. The following are the formulæ of the three strengths of the mixture.

No. I. — Boiling Point 38° C (100.4° F).

Chloroform, ...	45	parts by volume.
Petroleum ether, ...	15	" " "
Sulphuric ether, ...	180	" " "

No. II. — Boiling Point 40° C (104° F.)

Chloroform, ...	15	parts by volume.
Petroleum ether, ...	15	" " "
Sulphuric ether, ...	150	" " "

No. III. — Boiling Point 42° C (107.6° F.)

Chloroform, ...	30	parts by volume.
Petroleum ether, ...	15	" " "
Sulphuric ether, ...	80	" " "

The author has employed this mixture in a series of a hundred cases at St. Mark's Hospital, New York City, and he considers it safer than any other anesthetic. It is much more agreeable to the patient than either chloroform or ether, and ranges between chloroform and the A. C. E. mixture in the length of time it requires to produce narcosis. Its administration is simple, and it may be used in any case in which general anesthesia is not contraindicated. In the investigations of the author the ages of the patients ranged from ten to eighty years. In some cases there was heart disease, in others lung trouble, and several had albuminous urine. The average duration of the anesthesia was fifty-two minutes, but in several cases it was continued for one, two or three hours. Allis's inhaler was employed with the double current attachment commonly employed in chloroform administration. He begins with a drop of the mixture and then gives about one and a half cubic centimetres every half minute, employing the No. 1 mixture. He begins with this in every case, and if narcosis is not produced in ten minutes he changes to the No. III. He never employs the No. II, which he considers superfluous. Anesthesia was produced on an average with seventeen and a half cubic centimetres — a little over half a fluid ounce. The total amount used during the operation averaged 50.91 cubic centimetres — one and two-thirds ounces — the minimum being 20 cubic centimetres and the maximum 130. The average length of time required to produce narcosis was six minutes; the minimum two minutes, the maximum seventeen. Very little excitement, rarely any cyanosis, and much less vomiting were caused by this anesthetic than with chloroform or ether. It has no special influence on the pulse, but the respiration must be watched, for in some cases it became very imperfect. The return to consciousness was rapid and the effects of the narcosis soon wore off.

The author concludes, therefore, that the mixture is well taken; that anesthesia can be produced in a short time and kept up with a small quantity of the fluid; that it produces no bad effect upon the kidneys; that the heart is not affected by its use, but that it is attended by some danger to respiration, although not more so than other anesthetics.

(To be continued.)

Professor v. Eulenburg, of Berlin, the chief editor of the *Deutsche medicinische Wochenschrift*, has been elected an honorary member of the Society of Psychiatry and Nervous Diseases of Moscow.

THE BOSTON

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DR. WILLIAM PEPPER.

In the death of Dr. William Pepper, which occurred last Thursday, in California, America loses one of her best-known physicians. Although closely identified with Philadelphia and its medical interests, Dr. Pepper, through his writing and public spirit, was known in a much wider sphere, and the news of his somewhat untimely death will be felt wherever the English language is read.

He was born in 1843, and obtained his academic training at the University of Pennsylvania. He later graduated from the medical department of the same institution and was connected with various hospitals in Philadelphia. It was he who was chiefly instrumental in the establishment of the University Hospital, securing the gift of a site from the city of Philadelphia and serving as chairman of the finance and building committees.

In the University of Pennsylvania he was lecturer on morbid anatomy in 1868–1870, and on clinical medicine in 1870–76, and professor of the latter branch from 1876 to 1884, when he was elected to the chair of the theory and practice of medicine. In January, 1881, he was unanimously elected provost of the University. This office he resigned in 1894. He founded the *Philadelphia Medical Times*, and was its editor in 1870–71, and was medical director of the Centennial International Exposition, and for his services in connection therewith received from the King of Sweden the decoration of Knight Commander of the Order of St. Olaf.

He held membership in many national and local societies, and was at times president of many of them. In 1881, he was given the degree of LL.D. by Lafayette College.

Work for which Dr. Pepper will be appreciatively remembered is that in connection with the development of a more thorough medical course. This advance was secured through the extension of the course of study in the University of Pennsylvania to four years. Toward the carrying out of this plan he made a liberal personal subscription. Our larger medical schools have, as we know, in general adopted a four years' prescribed course, so that the pioneers have lost some of the prestige of the reform which at the time seemed so radical. In 1892, under Dr. Pepper's leadership, the University took another step forward in the establishment of a post-graduate department for women.

His most important literary work was the editing of the "System of Medicine by American Authors." This secured an immediate success, and is recognized as one of the chief American authorities on medical questions. He published, in conjunction with Dr. John F. Meigs, successive editions of their work on "Diseases of Children." Among his contributions to journals or the transactions of societies were many medical papers of value.

Apart from work associated with his profession, which always claimed his first attention, he was a public-spirited man in the best sense of the term, and was to Philadelphia a good citizen as well as an eminent physician. The places of such men are hard to fill.

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THE PATENTING OF DIPHTHERIA ANTITOXIN.

It is announced that Behring on June 21, 1898, received letters patent from the United States Patent Office for processes connected with the manufacture of diphtheria antitoxin. The application for this patent was made in January, 1895, and it had been several times refused.

This unfortunate confirmation of the previously suspected commercial tendencies of this distinguished investigator cannot but be a severe blow to his reputation as a scientific investigator and to the renown which German scientists have attained by their activity in the fields of research which have proved of such great practical benefit to humanity.

As has been pointed out editorially by the *Medical News*, the credit for the discovery of diphtheria antitoxin and its application to disease by no means belongs to Behring alone.

The names of Klebs, Löffler, Fränkel and Roux need only to be mentioned to suggest their distinguished contributions to our knowledge of the diphtheria toxin, of the production of immunity by repeated injections of the toxin, and finally of the antitoxin. Roux's experiments, in fact, gave the first convincing proof of the value of the serum.

The other eminent contributors to the priceless discovery of the antitoxin of diphtheria, animated by the highest motives in their work, gave its results freely to mankind without thought of remuneration.

It remained for Behring to take the unenviable position of the money-getter, and to appropriate to his selfish benefit the work of other men whose contribution to the grand result were at least equal to his own.

Where personal gain becomes the object of scientific investigation and each worker seeks to appropriate as far as possible to his own personal benefit the work of his brain, without being too solicitous as to whether his patent includes the results of work done by others, the benefits to humanity which have formerly resulted from the disinterested efforts of scientific men cannot but be sadly curtailed.

We have little reason to fear, however, that the example of this prominent contributor to human knowledge and welfare will be followed by the majority of the best class of scientific men, who will continue to regard, as heretofore, the interests of humanity as paramount to those of their private bank accounts.

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MEDICAL NOTES.

The University of Odessa. — A medical faculty is about to be constituted in the University of Odessa, and will be formally opened next autumn.

Appointment of a Woman-Physician. — Dr. Marie L. Lefort, who was recently appointed district physician by the Board of Health of Newark, N. J., is the first woman to receive such an appointment at the hands of that body.

Aged One Hundred and Nineteen Years. — Mr. Robert Taylor, postmaster at Scarva, County Down, Ireland, is dead. His age is officially given as one hundred and nineteen years, but it is believed that he was even as old as one hundred and thirty years.

Leyden Honored. — The Paris Academy of Sciences has elected as correspondent in the section of medicine and surgery Professor Ernst von Leyden, of Berlin. Thirty-two votes were cast for Professor von Leyden and five for Professor Zambaco, of Constantinople.

The White Cross Mission. — A new society is the White Cross Mission, recently organized in Oregon. It is similar in character to the Red Cross Association, but entirely distinct from it. It is stated that the War Department has granted it permission to begin its work of nursing at Manila.

Corresponding Members of the Pathological Society of Philadelphia. — Professor Rudolph Virchow, of Berlin, Professor M. V. Cornil, of the *Faculté de Médecine de Paris*, and Professor William H. Welch, of Johns Hopkins University, Baltimore, were recently elected corresponding members of the Pathological Society of Philadelphia.

Colored Nurses. — It is announced that the government is about to secure twenty-five colored women as nurses, expenses and wages $30 per month, to be paid by the government. Some of these nurses will be in the service of the Red Cross and others will be sent to posts assigned by the government. As qualifications they must have had yellow fever or have nursed through an epidemic at some time, and possess physician's certificates from their homes stating that they are good nurses.

Work of the Red Cross Association. — It is stated in the daily press that some slight friction has arisen between the medical officers of the regular army and the Red Cross Association. We have no absolute knowledge of the facts, but it is easy to see how difficulties might arise when two organizations are attempting to do essentially the same work. Whatever the merits of the situation may be, it would appear altogether advisable that there be but one head in the medical direction of the army hospitals and that that head be stringent in the exercise of its authority. There can be no doubt of the sincerity of purpose of the Red Cross Association; but there is also a certain danger that its enthusiasm may, at times, carry it too far, and lead to the defeat of its ends.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 3, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 21, scarlet fever 11, measles 28, typhoid fever 13.

President of the American Ophthalmological Society. — Dr. O. F. Wadsworth, of Boston, has been elected President of the American Ophthalmological Society.

Old Cullis Home Burned. — It is a source of congratulation that the old Cullis Consumptives' Home has been burned. The building was worthless and probably infected with the bacilli of tuberculosis.

No Stamp on Death Certificates. — It is stated that the Cambridge Board of Health has followed the example of Boston in ceasing to demand the use of ten-cent internal revenue stamps on death certificates. The matter has given considerable trouble to the Board of Health, owing to the friction between the undertakers and the physicians as to which should affix the stamps. The action is certainly a commendable one. It would seem that a death certificate was one of the last ways in which to secure revenue, and at least should only be resorted to in dire extremes, to which, fortunately, we have not come.

NEW YORK.

Birthday of a Centenarian. — It is a special pleasure to record the exceptionally long lives of those of pure American birth and descent. On July 27th, Mrs. Phœbe Doty Hedges, of Summit, N. J., celebrated her one hundredth birthday, and the occasion was made memorable to her by a visit from a chapter of the Daughters of the American Revolution, of which she is an honored member. Mrs. Hedges lives with her daughter, Mrs. Morris, in the house in which she was born, in 1798, and while unable to walk, on account of an injury to her hip due to a fall seven years ago, can work very deftly with her hands and is in full possession of her mental powers. She is the sixth lineal descendant of Edward Doty, who came to America on the *Mayflower*, and it is stated that the old Doty homestead is still standing at Plymouth. Her father was a Minute Man in the Revolutionary War, serving in one of the New Jersey regiments. She was married on December 24, 1815, to Edward Hedges, a descendant of one of the original settlers of New Jersey. Mrs. Hedges has four living grandchildren and two great-grandchildren, the youngest of whom is four years old.

Death of a Centenarian. — At the same time that Mrs. Hedges was holding her reception the funeral of another centenarian was taking place at Newark, N. J. This was Elijah Boulden Glenn, who was born on August 7, 1796, and was consequently within a few days of being one hundred and two years old. He was born near Baltimore, Md., and he took pride in tracing his ancestry back to Pochahontas. While a lad he fought in the ranks during the war of 1812. He was married in New York in 1829, and had two sons, one of whom, at the age of sixty-six, survives him.

Miscellany.

THE EFFECT OF SICKNESS IN THE ARMY.

It is an interesting observation, and one, no doubt, well borne out by the facts, that more lives are lost in an ordinary campaign through sickness than through violence, and also that the demoralization of an army by sickness is much greater than by the deaths and wounds of its members occurring in action. This is due, in great measure, to the fact that the soldier goes to war with an expectation, of the possibility at least, of being killed or wounded in battle, but with small thought of the less romantic inroads of fever or dysentery. It therefore happens that when many are on the sick list through these latter causes, a feeling of dismay is apt to arise which is much more subtle and hard to control than the casualties of the field of battle. As has been said: "The procession of comrades, well and hearty but a few days ago, ever wending its way from company quarters to the hospital tent, and the daily wail of the fife and the sombre boom of the muffled drum as comrade after comrade is taken to his last resting-place, very soon tells upon the men, and even the healthiest and the most hopeful soon give evidence of the strain under which all are suffering. There is a contagion in sickness other than what is usually meant by that word; a sympathetic contagion, which is far more depressing, far more fatal than physical contagion. A regiment with a heavy death-rate is a regiment that is not to be reckoned with in actual service. The disease, whatever it may be, that has stricken down so many of its members, has apparently seized upon all. All certainly are affected by it. Time may and probably will come when the regiment will be on the battlefield like a wall of iron; but so long as disease is sapping its strength and its energy, there is not heart enough in the whole organization to fill its ranks with healthy courageous blood."

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THE VICTIMS OF THE "BOURGOGNE" DISASTER.

The shocking details connected with the loss of life in the recent sinking of the French Line steamer *Bourgogne*, have been enhanced by the reports brought from various sources that two weeks or more after the accident the bodies of the victims were seen floating on the surface of the water, buoyed up by life-preservers, which many had had time to adjust. A more distressing spectacle is hardly to be conceived. The query occurs to us: Why did not the commanders of the vessels which have brought the news take measures to hasten the sinking of the bodies by cutting them loose from their supporting life-preservers? We find no mention of this having been attempted, although the conditions were altogether favorable. The captain of one of these vessels is said to have stated that when this picture of human calamity was passing before their eyes the ocean was in the most placid mood he ever remembers to have seen the North Atlantic. It was so smooth that the officers aver that a matchbox would have made an object for investigation for the practised eye of a sailor. The waves sent out from the vessel's propeller were all that affected the apparent restfulness of the bodies and made them move up and down in the ship's wake. The displacement of the great ship widened her wake behind, affecting bodies that were a long distance off.

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THERAPEUTIC NOTES.

Eczema of the Eyelids. — The proximity of the eye, the ease with which the tender skin of the lid can be injured, as well as complications in the form of conjunctivitis and blepharospasm — make it necessary to adopt a special mode of treatment. In the majority of cases, the inflammation of the conjunctiva attended by a muco-purulent discharge, can be cured, according to Antonelli,[1] by diligent cleansing with a weak sublimate solution (1–8000 *without* alcohol) coupled with instillation of silver nitrate (1–300) or protargol (0 2–0.4 — 100.), while the blepharospasm can be successfully combated either by the application of cold compresses, three times a day for several seconds each time, or by applying a cocaine salve (0.15–0.2 : 5.0 vaseline). We can also incorporate the cocaine in the salve to be used in the treatment of the eczema, thus: Zinc oxide, bismuth subnitrate, ten grains each, cocaine hydrochlorate eight grains, lanolin, vaseline, two drachms each. For the dermatitis of the lids the non-irritating salves are the best; as, white precipitate salve one per cent., calomel salve two to four per cent., the borosalicylate salve (acid boric, acid salicylic ten grains each, lanolin, vaseline pure, three drachms each). If the skin is very much inflamed and moist, then we resort to powders (Venetian talc) or to painting with one-per-cent. solution of picric acid. Obstinate cases in children with pronounced scrofulosis require the employment of some stimulating salve, as resorcin, acid salicylic, fifteen grains each, zinc oxide half a drachm, vaseline ten drachms. The children must also be prevented from irritating the sore spots. Removal of crusts, thorough cleansing of the nose, eventual opening of abscesses and pustules of acne, as well as the general constitutional treatment, must always be borne prominently in mind.[2]

Protargol in Ocular Therapeutics.—At the instance of Professor Neisser,[3] of Breslau, Dr. Darier used protargol in his ophthalmic practice (*Therapist*, May 14, 1898) with good success. Protargol (a combination of protein and silver, in the form of a fine yellowish powder, readily soluble in water, forming a yellow, but perfectly clear solution) is not precipitated either by chloride of sodium, or by two to three per-cent. solutions of cocaine. As compared with argentamine, which contains 6.35 per cent. of silver, and with argonine (four per cent. of silver), it is stronger than either, as it contains 8.30 per cent. of the element. But its most important quality lies in the fact that its application is perfectly unirritating and painless. Darier applied a five-per-cent. solution of the drug to a conjunctiva not previously cocainized, and observed no pain following its instillation. He thinks that protargol by its very marked penetrating qualities and by its antiseptic action, which is even more energetic than that of nitrate of silver or that of argentamine, but especially on account of its perfect harmlessness, and its insignificant irritating effect, when coming in contact with the conjunctiva and the cornea, merits to be tried methodically in ophthalmology in all cases where formerly nitrate of silver was employed.

Ichthyol in Pulmonary Tuberculosis. — Dr. Branthorme[3] recommends an alcoholic solution of ichthyol (one part of ichthyol to two of alcohol) thirty drops in water several times a day. The dose is increased daily by two drops till it reaches one hundred and fifty drops per day. Ichthyol is not only not injurious to the stomach, but even beneficial in cases of atonic dyspepsia. It is administered to patients in whom creosote is contraindicated. While the latter exerts its principal effect on local symptoms, the action of ichthyol is said to influence the whole organism. It is not only antibacillary in its effect, but, like arsenic, it exerts an effect on the digestive apparatus and on nutrition. It is probably best used when alternated with creosote.

Itching of the Skin in Icterus. —

℞ Ichthyol	ʒ i – ʒ ii.
Spiritus Aeth. Sulph. āā	ʒ x.

M. et Sig. Rub outside. (Boulland).

Gingivitis in Smokers. —

℞ Salol	gr. xii.
Spir. Menth. pip.	ʒ x.
Tr. Catechu	gtt xlviii.

M. et. Sig. A teaspoonful in a half glass of warm water, as a mouth wash. (Viau.)

M. Meyer[4] (of Lyons) employs solutions of sodium salicylate (one drachm and a half to two drachms of water) as a gargle for plain as well as pseudo-diphtheritic sore throat. He uses a tablespoonful of the solution in half a glass of lukewarm water. It is said to relieve the painful sensation of constriction and to modify rapidly the inflammatory process.

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[1] La Médecine Infantile, March 15, 1898.

[2] Münch. med. Woch., May 10, 1898.

[3] Centralblatt f. d. gesammte Therapie, June, 1898; France Méd.

[4] Annals de Méd. et Chir. Inf., June 1, 1898.

For Chilblains. —

℞ Aristol . . . . ʒ ii.
Collodion . . . . ℥ iss.
M. et. Sig. For external use. (Therap. Monatsch.)

For Tinnitus Aurium,[5] not dependent on any disease of the ear (even though there be a collection of cerumen), Model and Robin (*La Médecine Moderne*) employed successfully cimicifuga racemosa, which usually stopped the noise in the course of three days after the beginning of the treatment. The average dose was thirty drops *per diem*; it failed in cases that had lasted for over two years. The author considered the buzzing in the ear as due to a reaction of the auditory nerve, which is subjected to a direct or indirect irritation. Cimicifuga racemosa, which is known to act as an antispasmodic in labor, also as a diaphoretic and somnifacient, as well as an efficient remedy in pruritus, exerts an influence on the circulation of the ear and on the reflex irritability of the auditory nerve.

Arsenious Acid in the Local Treatment of Epithelioma of the Face. — M. Voron[6] presented a patient with an epithelioma of the face, which Jaboulay treated with the following mixture:

Acid arsen. . . . . ʒ i.
Aquæ destil } āā . . . . ℥ ii.
Alcohol }

The ulceration of six years' duration spread over the left temporal region, into its inferior part, toward the edge of the left brow, the size of a five-franc piece. The irregular borders permitted a view of the encroachment, the bottom was purple, secreting sanious pus. At the inner cathus of the right eye there was observed another point of ulceration, and this was touched by a solution of chloride of gold (1–100). The washings with the arsenic solution were made every day from March 12th to April 6th; cicatrization was progressing fairly well and the ulceration was reduced considerably in size. The patient treats himself at the present time. There is only left now a small ulcerated spot, of the size of a pin-head, secreting but little. The other ulceration disappeared entirely.

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Correspondence.

THE EFFECTS OF THE MAUSER BULLETS.

U. S. General Hospital, Fort Monroe, Virginia.
July 25, 1898.

Mr. Editor: — There is and has been so much written concerning the terrible wounds made by the Mauser bullet that it occurs to me to send you a short account of the effects of this bullet as I have seen them. We have here in our hospital and hospital tents almost five hundred men. We have about three hundred men who have been wounded by the Mauser bullet. So far but one man has died from his injuries. This was a case where the bullet entered the neck, passed downward wounding the left subclavian artery, fracturing the first rib, and came out through the scapula.

This man walked unaided when he came ashore from the transport. The wounds were healed but there was a very large aneurism completely filling the triangle. The left arm was paralyzed and it was impossible to be certain as to there being a slight impulse in the left radial at the wrist. The man was suffering intense pain and it was decided to operate. Unfortunately the poor fellow died on the table. The post-mortem revealed the fact that the first and second parts of the subclavian were torn. All of the wounds made by the Mauser bullet look more like holes made by a small gimlet than anything else. The points of exit are a very little, if any, larger than the points of entrance.

It is very strange that among all these wounded men there is not a single example of the terrible havoc said to have been caused by this bullet. Some of our army officers say the reason why these wounds are so simple is because the Spaniards use such poor powder. Another explanation given is that the execution done by the Mauser and the Krag Jorgensen depends upon whether the man hit is within what is termed the explosive range of the bullet. These men must have been hit at all ranges. Accept whatever theory you wish, the fact is that here are about three hundred men wounded by the Mauser bullet and not a single incidence of this terrible havoc, and pus is an unknown quantity here.

There are several cases where the bullet has penetrated the anterior chest wall, passed through the lung and come out behind. The patients have coughed a little blood but otherwise have not appeared to suffer in the least. In some cases the bullets have entered the back of the neck, passed down the entire length of the back along the spine and come out opposite the lower lumbar vertebræ; the point of exit a very little larger than the point of entrance and scarcely any tenderness along the track of the bullet.

There are other cases where the bullet passed through the bones of the tarsus, the femur, or humerus, simply boring a small hole. In one remarkable case the bullet entered the temple, passed behind the orbit, and came out on the other side. The sight is gone from the eye on the side of entrance of the bullet, but otherwise the man is all right. I could mention case after case, some of them abdominal ones, where the recoveries seem almost like miracles. Since I began to write a surgeon who came from the front to-day sat down beside me; I asked him if he had seen many wounded by the Mauser bullet. He stated that he had seen over six hundred wounded men and in nine cases out of ten he could not see any difference between the point of entrance and the point of exit, and that with the exception of a few compound fractures the wounds did not present any of these terrible features. I think the men who have said so much concerning the terrible havoc caused by the Mauser bullet have not seen many wounds caused by this bullet.

Robert E. Bell,
Surgeon U. S. Army.

METEOROLOGICAL RECORD

For the week ending July 23d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...17	30.05	70	78	63	49	89	69	N.W.	S.W.	6	12	F.	R.	
M..18	30.10	74	83	66	81	78	80	E.	S.	5	4	O.	C.	
T...19	30.00	76	84	69	84	91	88	S.W.	W.	18	5	O.	O.	.43
W..20	29.94	78	84	71	88	75	82	S.	E.	7	6	O.	C.	.03
T...21	30.00	80	91	68	78	92	85	W.	E.	6	10	F.	O.	.14
F...22	30.21	68	72	61	78	90	81	N.E.	S.E.	16	5	O.	F.	
S...23	30.28	65	69	61	80	86	83	N.E.	S.	12	10	O.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

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[5] Münch. med. Woch., No. 22, 1898.
[6] La Médecine Moderne, June 8, 1898.

RECORD OF MORTALITY

For the Week ending Saturday, July 23, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York	3,438,899	1486	818	32.69	10.15	27.16	1.89	1.64
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	523	214	25.84	8.55	19.76	.95	3.80
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	251	114	32.37	4.68	25.35	.39	4.29
Boston	517,732	155	46	9.10	10.40	3.90	—	2.60
Cincinnati	405,000	104	—	14.55	13.58	11.64	—	.97
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	123	65	33.21	4.05	20.25	2.43	8.91
Washington	277,000	114	42	15.62	11.36	10.65	—	.71
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	69	22	29.88	4.78	21 58	6.64	—
Worcester	105,050	29	13	31.05	3.45	20.70	3.45	—
Fall River	95,919	—	—	—	—	—	—	—
Nashville	87,754	23	5	8.70	4.35	8.70	—	—
Lowell	87,193	49	23	24.48	2.04	22.44	2.04	—
Cambridge	86,812	28	16	39.27	10.71	28.56	—	—
Lynn	65,220	14	2	7.14	21.42	—	—	—
Charleston	65,165	48	14	27.04	6.24	14.56	12.48	—
New Bedford	62,416	30	17	29.99	9.99	26.66	—	—
Somerville	57,977	—	—	—	—	—	—	—
Lawrence	55,510	31	22	77.52	6.46	74.29	—	—
Springfield	54,790	20	10	35.00	—	30.00	5.09	—
Holyoke	42,364	18	13	44.44	11.11	44.44	—	—
Salem	36,062	3	0	33.33	—	—	—	—
Brockton	35,853	—	—	—	—	—	—	—
Malden	32,894	8	0	25.00	—	—	25.00	—
Chelsea	32,716	16	—	12.50	6.25	6.25	—	6.25
Haverhill	31,406	11	1	9.09	27.27	9.09	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	8	0	12.50	25.00	12.50	—	—
Taunton	27,812	13	5	15.38	7.69	15.38	—	—
Quincy	22,562	5	3	—	—	—	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	4	2	25 00	25.00	25.00	—	—
Everett	21,575	6	1	—	—	—	—	—
North Adams	19,135	1	0	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Chicopee	17,368	9	8	44.44	11.11	44.44	—	—
Brookline	16,164	6	0	—	—	—	—	—
Medford	15,832	2	2	50.00	—	—	—	—

Deaths reported 3,218: under five years of age 1,488; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 911, consumption 286, acute lung diseases 205, diarrheal diseases 723, diphtheria and croup 61, whooping-cough 53, typhoid fever 32, cerebro-spinal meningitis 14, measles 11, scarlet fever 14, erysipelas 3. From typhoid fever Philadelphia 6, Washington 5, New York and Boston 4 each, Baltimore and Pittsburg 3 each, Providence 1. From cerebro-spinal meningitis New York 9, Baltimore, Cincinnati, Lynn, New Bedford and Medford 1 each. From scarlet fever New York 8, Pittsburgh 2, Philadelphia, Baltimore, Cambridge and Lawrence 1 each. From measles New York 8, Baltimore, Cincinnati and Washington 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending July 16th, the death-rate was 14.7. Deaths reported 3,159; acute diseases of the respiratory organs (London) 175, diarrhea 122, whooping-cough 83, measles 79, diphtheria 54, scarlet fever 24, fever 16.

The death-rates ranged from 8.7 in Portsmouth to 22.9 in Newcastle-on-Tyne; Birmingham 12.9, Bradford 14.7, Croydon 9.2, Gateshead 12.6, Hull 12.9, Leeds 14.5, Leicester 12.0, Liverpool 18.8, London 14.1, Manchester 19.0, Nottingham 13.7, Sunderland 18.1, Swansea 16.4, West Ham 12.7.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING JULY 28, 1898.

Bailhache, Preston H., surgeon. Granted leave of absence for six days from July 18, 1898. July 15, 1898.

Purviance, George, surgeon, Chairman of Board of Examiners. To proceed to Port Tampa, Fla., for the examination of officers of the Service preparatory to promotion. July 26, 1898.

Godfrey, John, surgeon, Member of Board of Examiners. To proceed to Port Tampa, Fla., for the examination of officers of the Service preparatory to promotion. July 26, 1898.

Carter, H. R., surgeon. To proceed to Fort Monroe, Va., for special temporary duty. July 22, 1898.

Carmichael, D. A., surgeon, Recorder Board of Examiners. To proceed to Port Tampa, Fla., for the examination of officers of the Service preparatory to promotion. July 26, 1898.

Glennan, A. H., passed assistant surgeon. To report to Chairman of Board of Examiners at Port Tampa, Fla., for examination to determine fitness for promotion. July 26, 1898.

Wasdin, Eugene, passed assistant surgeon. To report to Chairman of Board of Examiners at Port Tampa, Fla., for examination to determine fitness for promotion. July 26, 1898.

Brooks, S. D., passed assistant surgeon. To proceed to Point Pleasant, N. J., for special temporary duty. July 23, 1898.

White, J. H., passed assistant surgeon. To report to Chairman of Board of Examiners at Washington, D. C., for examination to determine fitness for promotion, July 20, 1898. To proceed to Fort Monroe, Va., for special temporary duty. July 21, 1898.

Geddings, H. D., passed assistant surgeon. To proceed to Fort Monroe, Va., for special temporary duty. July 21, 1898. To proceed to Port Tampa, Fla., for special temporary duty. July 25, 1898.

Cumming, H. S., assistant surgeon. Relieved from duty at Immigration Depot, New York, N. Y., and to report to commanding officer of the U. S. Marine Hospital at same port for duty. July 18, 1898. Re-assigned to duty at Immigration Depot, New York, N. Y. July 25, 1898.

Clark, Taliafero, assistant surgeon. Upon being relieved by Sanitary Inspector R. E. L. Burford, to rejoin station at South Atlantic Quarantine. July 20, 1898.

SOCIETY NOTICE.

American Climatological Association. — The Fifteenth Annual Meeting will be held at the Maplewood Hotel, near Bethlehem, N. H., on August 31st and September 1st, 1898. The following programme has been arranged:

Opening Address. — August 31st, 10 a. m. By the President, Dr. E. O. Otis, of Boston. Subject. — Avenbrugger and Lænnec, the Discoverers of Auscultation and Percussion.

Common Errors of General Practitioners in Dealing with Cases of Pulmonary Tuberculosis. By Dr. F. I. Knight, of Boston.

Note on the Position of the Lower Border of the Heart. By Dr. Glentworth R. Butler, of Brooklyn.

A Case of Dissecting Aneurism of the Thoracic Aorta Rupturing into the Pericardial Sac and Causing Immediate Death. By Dr. Judson Deland, of Philadelphia.

The Influence of Respiration on the Action of the Heart in Health and Disease. By Dr. R. G. Curtin, of Philadelphia.

Suggestions: The Result of Recent Experience with Phthisical Patients. By Dr. Vincent Y. Bowditch, of Boston.

In the afternoon at two o'clock the Association is invited to a drive to the "Profile," by the courtesy of Dr. C. F. McGahan.

September 1st. 9.30 a. m. to 1 p. m. Clinical Notes on Asthma and its Treatment. By Dr. Beverley Robinson, of New York.

Ergot in Chronic Malaria. By Dr. A. Jacobi, of New York.

Preliminary Report of Seventy-five Cases of Malarial Fever and Their Relation to the Course of Certain Brooks. By Dr. R. C. Newton, of Montclair.

Concerning the Natural History of Pulmonary Tuberculosis. By Dr. J. C. Wilson, of Philadelphia.

Oxygen Inhalations in Acute Pulmonary Affections. By Dr. Andrew H. Smith, of New York.

Variations in Pathogenic Activity among Tubercle Bacilli. By Dr. Theobald Smith, of Boston.

The Treatment of Hay Fever. By Dr. J. C. Mulhall, of St. Louis.

Sanatoria for the Consumptive Poor. By Dr. J. M. Anders, of Philadelphia.

Infection from the Hands in Phthisis. By Dr. E. L. Baldwin, of Saranac Lake.

Business Meeting, 2.30 p. m.

Application of the X-Rays in the Diagnosis of Tuberculosis. By Dr. F. H. Williams, of Boston.

The Value of Systematic Physical Training in the Prevention and Cure of Pulmonary Disease. By Dr. E. Fletcher Ingals, of Chicago.

The Distribution of Pulmonary Tuberculosis in New Jersey. By Dr. Guy Hinsdale, of Philadelphia.

A New Inhaler. By Dr. H. Longstreet Taylor, of St. Paul.

A Single Test of the Virulency of Sputa Kept Many Months. By Dr. Irwin H. Hance, of Lakewood.

Some Statistics upon Serotherapy in Tuberculosis. By Dr. J. E. Stubbert, of Liberty, N. Y.

Papers are also promised by Dr. H. P. Loomis, Dr. S. G. Bonney, Dr. Charles E. Quimby and others.

Guy Hinsdale, M.D., Philadelphia,
Secretary and Treasurer.

Original Articles.

HOSPITAL SHIPS. THE "BAY STATE."

BY C. A. SIEGFRIED, M.D., NEWPORT, R. I.,
Medical Inspector, U. S. Navy.

The care of the sick and wounded has in recent wars taken on exceptional importance, and at this time we find in the medical departments in all military and naval forces a fulness, variety and skill of equipment, both in material and personnel, that would astound those in control even twenty-five years ago; not to speak of the days of the Crimean War, from the horrors and inhumanities of which the civilized world recoiled, though the leading and at the time the most enlightened nations took part in it. Soldiers and sailors are no longer hirelings, they are directly and continuously from the people, and modern large forces are, to a great extent, schools for the bulk of their members.

In England and America, where the voluntary system of service still exists, the grade of the regular forces is perhaps not so near the general people, yet still the soldier and sailor are as well cared for, probably better, than in the armies and navies where the conscription or universal service holds.

It may be said that, from the period of the Crimean War, humanitarianism and the power of the forces of modern development compelled the beginning and continuous evolution of the arts and sciences of hygiene, medicine and surgery as applied to military and naval life; hence one can easily trace the gradual improvements in means, methods, the foresight and the growth in efficiency of their medical departments. So that now these departments are, as a rule, quite up to civil establishments; nay, more, there is a watchfulness exercised over soldiers and sailors regarding food and water supplies, disease causes and prevention, re-vaccination and general hygiene not to any extent customary in civil communities anywhere.

It must not be imagined that "hospital ships" are a present-time evolution, they are simply in evidence as the mark of progress in naval medicine and surgery. Their equipment and very apparent usefulness at this time is, however, striking. Owing to the great development of offensive power in modern warships, and the crowded complexity necessary, there has almost ceased to be room on board for hospitals; and once the list of casualties exceeds five per cent. of the personnel all attempts at surgical relief become a hopeless task. The usual space set apart for a hospital in ordinary times is in battle abandoned, the armored or protected sections alone at that time containing the crews—men and officers of all descriptions; so that the surgeons are equipped mainly for first-aid work, and must work as best they may and can, circulating about the fighting guns' crews or in their immediate vicinity. Operative procedures of the most pressing nature are alone to be attempted. Casualties in the proportion of from 20 to 60 per cent. must be expected in naval combats — from the history of such engagements during the past thirty years. Rapid fire and machine guns, in the hands of those knowing their use, in addition to the frightfully destructive effect of the modern explosive shell and penetrating power of the present naval ordnance, tend to end such battles within an hour; and in a ship's complement of 450 — the average number in a large cruiser or battleship — the state of affairs with a casualty list of 33 per cent., the general estimate now looked for in naval battles, can be easily imagined. The casualties in the recent engagements in Manila Bay and off the port of Santiago de Cuba, on the Spanish ships, were much above this figure, approximating nearer 60 per cent. in the majority of the ships. It is now known that the killed and wounded from the effects of a few of the single shells, in these battles, that reached the interior of crowded decks, numbered as high as seventy. There was one instance in the Yalu battle, between China and Japan in 1895, reported to the writer by Commander McGiffen, an American, who served in the leading Chinese battleship as second in command, where 102 men were placed *hors du combat* by one large exploding shell. A shell exploding produces at once a wide area of white fusing heat and flame, with an innumerable number of irregular missiles; these effects being exaggerated when the explosion occurs within confined decks, spaces and turrets. Supposing that a conflict were to occur between ships well matched in ship, men and ordnance, casualties mount up to 80 per cent., as has happened in a few instances. Probably the greatest slaughter of modern times occurred in 1879, when the Chileans with two ships took the Peruvian ship the *Huascar* (all ironclads). So that it can be readily seen that with fighting ships and fleets there must be ships equipped solely for hospital uses. There is no room on board a modern fighting ship or machine for an injured or sick man. All available space is consumed for purposes of offence and defence, and the intricate complexity of a typical and admirable ship of war must be seen to be appreciated.

For the past several years naval authorities have been reluctantly coming to the hospital ship for strictly naval uses, and at the Moscow International Medical Congress last year, the American naval delegate, the present Surgeon-General, Wm. K. Van Reypen, presented a paper on this subject, with detailed plans. It was hoped that sooner or later such a craft would be provided for our naval service. The present war hastened matters, and a fine mercantile steamer of 3,800 tons displacement was at once procured, and, being hastily fitted and equipped, reached the scene of active operations in Cuba to be of most important use, being at that time the only vessel of the kind ready.

She was placed temporarily at the service of the military arm of the government. Hospital ships for the use of armies when engaged in distant military enterprises may be more appropriately named transport ships, for their services may be radically different. Naval hospital ships, under the protection and neutrality of the Geneva Red Cross Convention Articles, must save and help both sides in a conflict, regardless of nationality, and keep the sea with the fleet to which they belong. The credit of early procurement, rapid equipment, and quick despatch of the naval hospital ship *Solace* rests with the Honorable Secretary of the Navy, Mr. Long, who at once seconded all the efforts and energetic steps taken by Surgeon-General Van Reypen. President McKinley approved the expenditure out of the fifty millions' war appropriation, and the *Solace* took shape. Several hospital ships are now proving their value, and as each successive one goes forth to succor and to save, the experience gained bears fruit in many minor details in the equipment and fittings.

In the great French fleet, gathered by Richelieu in 1693, there were 190 ships of all classes, including three hospital ships. There were 7,654 guns and 44,700 men all told in this fleet. But this was an exception rather than the rule. In the China-Japanese war, at the battle of the Yalu, the latter power had present a well-equipped hospital ship, having recently transformed for the purpose a merchant steamer of about 3,000 tons. She did good service in that conflict, the wounded being transferred during and after the engagement. There are numerous hospital ships anchored in many colonial harbors, for both army and naval uses, but the complete hospital ship as we now understand the term in this country — an active, complete, self-sustaining vessel, thoroughly able to render competent and scientific medical and surgical aid, sailing under the Articles of the Geneva Convention — is distinctively an American creation of this present time, and the navy has gained the credit of being first in this beneficent field, with the sailing of the *Solace*. The articles (VII to XV) of the Geneva Convention, relating to the Marine, were adopted in 1868. Aid must be rendered both sides, regardless of nationality, the ships being neutral, and men once rescued during battle are debarred from further activity as combatants for the war. Military hospital ships are distinguished by their white color with green strake (a broad stripe on each side); civil aid society ships with red strake on the white. They can carry no contraband stores, nor any means of offence or defence. When fitted at the expense of aid societies, a naval officer must certify that he has controlled and inspected their equipment and fitting out, and that they are in accordance with the terms of the Geneva Convention, and this officer is appointed by the sovereign or executive of the country under whose authority the ship is fitted out and commissioned.

An original design or model for a hospital ship would probably have more beam to length than is common in the merchant craft available, for the purposes of stability and easy motion at sea, and for more agreeable spacing of compartments. It is not essential to have great speed, as this involves the use of enormous space for machinery, increased heat, and exaggeration of vibration and noise. Fair speed, large coal endurance, an easy model, somewhat high between decks, and not too large a type of ship, are essential points. To answer her purpose well she must berth her patients conveniently and agreeably, with ample facilities for suitable dieting, good air at all times, pure water; a good ice plant with cold-storage rooms, an electric lighting system, a laundry, a steam disinfector; an operating and dressing room equipped with hot and cold running water, sterilizer, and the modern fittings, clinical laboratory, x-ray apparatus; ambulance appliances and apparatus, including boats by steam and barges; dispensaries, diet kitchens, lavatories, baths, water-closets; offices, store-rooms of all kinds; a carefully selected staff of physicians and surgeons, a pharmacist, nurses, cooks, and the usual attendants. A section must be set aside for isolation uses, and an infectious or contagious ward, complete in itself, must be provided, preferably on an upper deck well aft. The usual size of berths is 24x75 inches (28 inches width would be better). They should be made of iron piping one inch, with the upright stanchions running from deck to deck, on which the berths rest, of two and five-eighths inches; finished in white enamel. Various methods of construction are in vogue. The *Bay State* berths are very convenient and secure, the frame resting in deep hooks (at the four corners) encircling by a band the stanchions between every two berths, the space between the ends of the berths being several inches. It also allows of the whole berth being removed and transported bodily. Berths are in two tiers, with a passage of from 20 to 30 inches between the lines; the average cubic capacity or air space per berth, 250 cubic feet. Woven wire springs and hair mattresses, and side bars complete the berth.

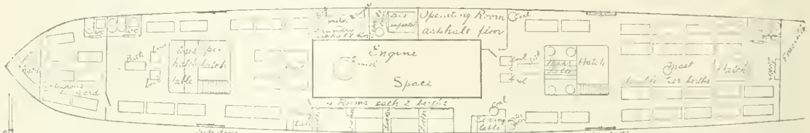

FIG. 1.

Bay State. Main hospital deck, general arrangement. Air ports, ventilating tubes, etc., not shown. Ice plant, cold storage, store-rooms and additional berths on deck below. Cabins, etc., of personnel on upper deck houses (galley, etc.); over all light flying deck.

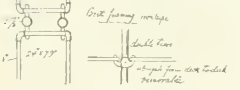

FIG. 2.

Stanchions and berth framing.

Systems of ventilation are essential, and fan blowers, usually run by steam, are employed, though electricity is used for fans up to 24 inches diameter. The tubing or air ducts should extend throughout the structure below the main deck, and careful calculation and construction are necessary for success. Artificial ventilation in ships, I have no hesitation in stating, should be by the plenary method — *forcing air in* to the compartments and spaces needing ventilation. It is easily shown that really pure air is hardly attainable in a complicated structure, such as a ship is when the air is extracted, the distal parts necessarily getting the air which has filtered through the other compartments in reaching it — passing over decks, beds — more or less respired and robbed of its oxygen, and having accumulated dust and gaseous emanations. Most systems are arranged to work both ways. A fair maximum number of revolutions of the blower must be insisted upon and it must be kept running constantly.

Ice plants are not perfected to an extent desirable. The Allen patent, in use in naval vessels, of producing cold by the alternate contraction and expansion of common air, is usually successful; and though in the tropics the capacity shrinks fifty per cent., the one ton machine (daily ice-making capacity plus cold-storage) answers an excellent purpose in the naval medium sized cruiser. The ammonia process is being improved rapidly, and is simpler than the compressed air patent. The ammonia ice plant in the *Bay State* will have a capacity daily of producing 5,000 pounds of ice (with tropical conditions), and preserving one cold-storage room of 1,386 cubic feet at 40°, and one of 630 cubic feet at 25° F. There will be an ice-storage of 230 cubic feet. It is the Hendrick machine and patents, and uses anhydrous ammonia and calcic chloride brine of a fixed specific gravity. It promises admirably and surpasses some of the ice plants in hospital ships of much larger tonnage and size now in service. In outside conditions of air and water, temperatures under 65° F., this capacity will be doubled. A feature of the construction here is the complete incasing of the machine proper in a one-fourth inch steel box containing separate pump, ventilating system, etc., to remove possible chemical *débris* — a constant annoyance usually. It is possible that ultimately liquid air may be utilized in refrigeration and ice making, but at present this substance, on passing into the gaseous state, is not practically controllable.

The apparatus to condense sea water, filter it, and furnish a pure fresh-water supply has a capacity of 3,000 gallons daily. This will provide an ample supply for all possible uses. Storage tanks containing several times that amount are also in the ship. Sea water is also supplied for baths.

The steam disinfector is set up adjoining the laundry. It can be charged from the deck, the sterile contents being then removed to the laundry. Its size is about 48x60 inches, capable of receiving two mattresses with complete bedding, etc., at once. The laundry is composed of a washer, wringer, and small engine, and will be competent to finish up in one day the hospital's bed linen, towels, cloths, etc.

The cooking is done on the spar deck (upper deck), and the food is sent down to the deck below — the hospital deck — by dumb-waiter. Serving tables, fitted up appropriately, and made of metal, with carefully devised shelving, lockers, etc., are conveniently placed to receive and distribute the food. The diet scale of the *Bay State* has been carefully gone over, and in most competent hands. It will include every luxury and necessary element to be found in the most liberal establishments, and is proportioned to the various messes on board, from the seamen, engineers' force, officers' messes and the patients' dietary particularly. Facilities to properly prepare all food substances are present in the very complete galley installed contiguous to the engine bulkhead on deck.

The electric lighting plant, dynamo and appliances are estimated on supplying about 200 lights of 16-candle power each. Electric fans to the number of about forty, with 12-inch fans, are provided. These were very kindly given, on the basis of one to every four patients. There is no question of the extreme usefulness and comfort to be derived from these admirable contrivances when in the tropics.

The baths are of good size (five feet two inches), of enamelled metal, and with the hand-bowls stand free, the former to be enclosed with canvas suspended from a rod overhead. An excellent compound valved supply stand-pipe will furnish hot, cold and salt water as desired. The slop-hoppers and water-closets are distributed in three localities, easy of access from the main berth sections. A hopper and siphon trap-bowl is affixed to the drain (directly through the ship's side), which has an additional valve at its exit. It is so arranged to be well above the water line. Ships' water-closets are not by any means perfected contrivances when placed at or near the external water-line; and, though there are many patents and kinds in use, they do not, as a rule, function well without a vast amount of looking after.

The *Bay State* will have one "alba naphtha" launch, of 30 feet length, and four pulling boats of 24 feet length, and one of 12 feet. The launch will be able to tow the boats in transporting patients, and carry on the daily work between ship and shore when in port — mails, marketing, stores, etc. The cots and stretchers to be supplied can be placed in the pulling boats when containing patients, and on arrival alongside the ship, the booms fitted to each mast, with convenient tackle, will readily lift cots with patients to the side doors and into the ship. Other ambulance appliances will include some "Lowmoor jacket stretchers," United States Navy cots and stretchers. The jacket stretcher retains firmly in any position a patient by means of broad canvas bands across the chest, under the arms, under the perineum, buckling to the two coming over the shoulders, and transversely over the legs. With a willing and earnest staff, such as the *Bay State* will possess, the transfer of patients can give no anxiety.

The operating-room, though small, will satisfactorily accomplish its purpose. It is supplied with sterilizing apparatus (Kny Scheerer make), an x-ray apparatus, hot and cold water, a fixed, operating, metal table, sufficient shelving, lockers for instruments and the usual appropriate surgical gear. The floors of this room, disinfecting room and laundry are of asphaltum, draining to the usual outboard scuppers and waterways, common to the whole hospital deck alongside the skin of the ship. The air ports or deadlights will during daylight furnish sufficient light, and the electric light will supplement it. A small clinical laboratory outfit is also provided.

The personnel of the *Bay State* will consist of about 48 people. The deck and engine force gives a total of about 22; the stewards, cooks and attendants of about 8; and the purely medical and surgical side of about 18. There is the purser, the man of business and accounts. The principal medical officer will be the surgeon superintendent, Dr. Herbert L. Burrell, assistant professor of surgery in the Harvard Medical School. He will have the aid of four assistant surgeons. There will be six female nurses and six baymen (competent nurses and attendants); all have been carefully selected, and have promised to serve for three months, signing the usual shipping articles of agreement to that effect. The commanding and directing head of the ship is the surgeon superintendent, subject only to the navigating officer, Captain Butnam, upon questions of navigation or control when the safety and well-being of the vessel may be threatened. The executive committee of the Massachusetts Volunteer Aid Association finally governs the general direction and objects sought to be attained by the ship.

It may be interesting to compare costs of hospital ships, calculating them to the unit of fixed berth. From what has gone before in the acquirement, equipment, rearrangement and outfitting of these self-sustaining hospital and ambulance craft, it is well known that they are complex, liable to failure at important points of detail, and very expensive. We are, in fact, evolving satisfactory hospital ships at this present time. It is a new art and with each ship definite points of improvement in details are pointed out. Ice plants fail, ventilation becomes faulty, dynamos need replacement, the personnel needs rearrangement, and some questions arise in placing of berths — spacing, dimensions, securing them — and kinds of materials. Transportation of patients is also a matter of experience. Much depends upon the kind of work to be done. Surgical cases may shortly disappear, and the ship's berths be crowded with purely medical cases — malaria, typhoid, dysentery and heat effects. However, it is the recognized part of a hospital ship to be equipped for all manner of medical and surgical work, at all times.

A vessel of 4,000 tons displacement, in this country, if new or nearly so, costs at least a half million dollars. Her equipment and fitting out as a hospital ship will then foot up from $60,000 to $75,000. She will have a company, complete in all departments, of not less than 100, probably 120. With crowding she may have 350 fixed berths, with a maximum capacity of possibly 400. At this rate the cost will be about $1,640 per fixed berth. The ships now afloat have cost much more, approximating more nearly to $1,900 per berth, whilst the rearrangement from mercantile and passenger uses has not been as complete and satisfactory as was desired because of urgent need for hospital and military purposes. The *Solace* was in good time, was on the spot during the first battles of the war. She has wooden-framed berths, an additional ice machine has been added, and she carries her honors handsomely, even though she was rushed day and night when fitting out. When the first hospital ship is designed and constructed, from the first keel plate as such, then may we expect to see probably a more perfect and complete craft.

The *Bay State* will be admirable (for her size), and distinctly possesses some superiorities. She is but 200 feet long, 27 feet maximum width, single screw, bark rigged, 780 tonnage displacement, is built of three-eighths-inch steel (Scott & Co., Bowling, Scotland, 1886), and is rated 100, A. 1. Speed, 12 knots; draft, 14 feet; steaming radius, 3,000 miles. She was owned by the Boston Fruit Company, and was sold to the Massachusetts Volunteer Aid Association for $50,000. Her fitting out and virtual internal reconstruction will cost about $60,000, making a total of $110,000, or cost per fixed berth of about $1,200. She is not palatial, but she possesses solid advantages and comforts for her work, and no ancient upholstery or useless wooden fittings. Her hospital deck compartment is new work, mainly metal, and she is virtually aseptic. The space is given up for patients' needs and uses, while the personnel on board, for the charge and care of them, are far from being housed and berthed luxuriously.

It is to the credit of Massachusetts, to her cultivated and patriotic citizens; and to the medical profession here — who give all their services eagerly and gratuitously — that the State has the noble distinction of being the first civil community anywhere to send out at its own expense a complete hospital ship for the humane uses of all the men, naval and military, who are bearing arms for our common country.

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SIR ASTLEY COOPER, BART.[1]

AN ESTIMATE OF HIS CHARACTER AND CAREER.

BY JAMES G. MUMFORD, M.D., BOSTON,
Surgeon to Out-patients, Massachusetts General Hospital; Visiting Surgeon, Carney Hospital.

ONE of the most interesting and picturesque figures in all surgical history is that of Astley Paston Cooper. Well born and bred; highly gifted both mentally and physically; of enormous industry and ambition: living at a time of revolutionary changes in the world's history — changes social, political and intellectual — he was a fit contemporary of such men as Fox and Canning and Mirabeau and Hamilton — less mercurial than the first and only less brilliant than the last.

Somewhat younger than those distinguished men, he was brought under the same great influences; and though he died near the middle of the present century, he had known Dr. Johnson, had heard Hunter, had seen Robespierre and George III, had experienced Waterloo, and had lived to be honored by the Citizen King. Whatever there was in life for the finding, that Cooper found, and amid all the changes and chances of an extraordinary era he is seen always steadily advancing.

Astley Cooper was born on the 23d of August, 1768, one year before the great Napoleon. In France old Louis XV was living; in Germany Frederick was resting on his laurels; in America Washington was an obscure country gentleman, and in England George III was still a young king. There was peace at home and abroad, though the great undercurrent was already at work, destined to overturn the geography and dynasties of the world. Of all the peoples about to become embroiled in this turmoil, the English and Americans alone were to emerge with added strength; and parallel with the fluctuating but always advancing fortunes of his people, Cooper's life developed in vigor, resourcefulness and success.

A great deal has been written and said about this man, but I do not find that his true significance has been appreciated. He was not a hero; perhaps not one of the world's great men; but like a few others of that day, he early felt the import of what was being done by the wide forces behind men, and in his own sphere of life he grew to typify the revolution in which he lived.

Great changes in politics, philosophy, literature and science do not come suddenly, full grown, as we know. It is evolution that leads to what men call revolution. Rousseau preceded Jefferson; Descartes preceded Darwin, and John Hunter preceded Astley Cooper.

The traditions which lay behind and surrounded the young Cooper were certainly not of a kind to develop his natural genius. His ancestors belonged to the country gentry class; his father was an excellent clergyman of independent fortune, his mother a fond, sweet woman who wrote moral poems and tales for the young and found a publisher. He was born a younger son to this couple at Brooke, in Norfolk.

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[1] Read before the Historical Club of Johns Hopkins Hospital, May 9, 1898.

There, and later in Yarmouth, he grew up a wild, generous, mischievous, brilliant boy, the plague and astonishment of his parents.

I find no tales of him that presage his later fame. His dull and pompous nephew, Bransby Cooper, has written a life of him, and tells of how he applied a tourniquet to the thigh of his young foster brother, who had been injured and was bleeding from the femoral artery. A chapter is devoted to this scene and there is much feeble wagging of heads; but I doubt not that boys other than embryo great surgeons have done the same before and since.

This young Astley was forever in scrapes and would have none of books. The practical jokes of the day were brutal enough, and of them he had his share. Such tales are but dull to hear.

So he grew up, wild, ungoverned and unread, but kind and gentle toward all women and young children. In the course of time his brothers, steady persons, well instructed by the good scholar their father, went their ways to the university. For him there was nothing in life of that sort, and it was not until his uncle, William Cooper, from London, a surgeon of repute, came down to visit at the parsonage, that a clear path became open to him.

The anxious father was only too glad to find some congenial employment for the exuberant son, and so with many anxious prayers and solemn blessings from his elders the lad was sent to London to make his way.

Astley Cooper was sixteen years old when he began the study of medicine. His preparation was slight enough; a little Latin and mathematics, a smattering of French and a good constitution were his stock. He had read little and never became a reading man. Like Hunter, Hume, Brodie and many others, he would learn all things for himself, and cared little for the written thoughts of others — ancients or moderns. It was a sign of the times; men were finding out the facts of life for themselves and cared little for knowledge at second-hand.

Here is a description of his outer man, in the stately words of his biographer: "His manners and appearance at this time were winning and agreeable. Though only sixteen, he was tall and finely proportioned, healthy and manly, with a countenance handsome and expressive. His talk was brisk and animated, his voice and manner pleasing and well-bred. He was graceful and agreeable, popular in society, and always greatly influenced by women." This is a pleasant picture, and one sees him the young Apollo indeed.

Cooper had the rare good fortune to be placed as articled pupil with one of the greatest surgeons of his time — Henry Cline. The uncle who had brought him to London seems to have been a jealous and uncomfortable person, and readily parted with his tempestuous kinsman.

Cline was an interesting man. At this time, 1784, the American war had been concluded, and those democratic principles, which had gained such headway in France, were professed in a milder degree by great numbers of liberal Englishmen. Cline was always an advocate of such views, and was at this time intimate with the celebrated Horne-Tooke and with Thelwall. To such a band was joined young Cooper, who eagerly adopted their views, and so pained beyond expression his anxious friends at home.

It is evident to one following his course that his whole trend of thought and endeavor were strongly influenced by such pursuits, and though, like most Englishmen, he fell back in later life with the strong conservative tide setting against all things French, still the broad manner of thinking which he early learned colored always his subsequent career.

Cline cared much for all these things, but that did not prevent him from being a sound surgeon and an accomplished teacher. He was eighteen years Cooper's senior. In later years, Sir Astley wrote many comments on men he had known, and this is what he says of Cline in one place: "In surgery he was cool, safe, judicious and cautious; in anatomy, sufficiently well informed for teaching and practice, but he lacked industry and professional zeal. He was gentle, firm, mild, unruffled." This is pleasant, but not high praise. Cooper had high ideals, and after middle life, when phenomenal success had established his own confidence and self-esteem, he was never lavish of praise for others.

But Cline's political friends were not his only associates. He knew well and appreciated John Hunter. To that remarkable man his young apprentice was soon introduced, and the teachings of the great scientist at once captivated and engrossed the youthful scholar.

Of the method of Hunter I need say but a word. It was a method as old as that Babylonian Zadig, of of whom Huxley tells the story. It was what we call the inductive method. But what Hunter did was to apply it faithfully, unselfishly, unfalteringly to biological science and the study of medicine; until, in spite of opposition, hatred, contempt and ridicule, he placed these studies, and the men who profess them, in that dignified and ennobled position before the eyes of the world which a hundred years have only increased and strengthened.

Cline appreciated him, and this is what he says of him: "Having heard Mr. Hunter's lectures on the subject of Disease, I found them so far superior to everything I had conceived or heard before that there seemed no comparison between the great mind of the man who delivered them and all the individuals, whether ancient or modern, who had gone before him." Cooper himself later said of Hunter: "Mr. Hunter was, as Lavater said, *a man who thought for himself*, but he was more; he was the most industrious man that ever lived." Here is an anecdote which Cooper tells of Hunter, who was often slipshod and indifferent in practice, in spite of his enormous knowledge: "Mr. Howden had a patient with an obstinate running sore whom he brought to Mr. Hunter for consultation. They went into Mr. Hunter's room and the case was explained. Mr. Hunter folded his arms and said: 'And so, sir, you have an obstinate running sore?' 'Yes, sir.' 'Why then, sir,' said Mr. Hunter, 'if I had your running sore I should say,— Mr. Sore, run and be damned.'"

Cooper early perceived (and it was a knowledge he received from Hunter, not from Cline) that a thorough knowledge of anatomy was at the bottom of all successful surgery. Before his day there was no anatomical study and instruction as we know it. There were some anatomists, but they were not to be found among the ordinary students and practitioners of surgery.

Mr. Cline was surgeon to St. Thomas's Hospital, and it was in the schools of the United Borough Hospitals, St. Thomas's and Guys, that Cooper received his education. The amount of time that he put into anatomical studies would be impossible to students of our day, with their elaborate curriculum and carefully regulated hours. In those days there were no graded courses. Certain lectures on anatomy, surgery and medicine were held, and bedside teaching was given; but until the time came for going into practice the young men were allowed to dispose of their hours as they pleased, so far as the school was concerned. It was over the articled pupils only that any real control was exercised, and these were always the men who rose to position and influence in after life.

To Astley Cooper the study of anatomy meant not only the normal dissections, but pathological dissections and comparative anatomy. From the second term of his medical studies until the day of his death, his industry in all these lines was enormous.

To rise at four, to dissect for two hours before breakfast, to demonstrate for his fellow-students all the morning, to hear lectures and assist at autopsies until dinner and to dissect again until near midnight — these were for many years his regular occupations.

The various and fascinating lines of research which engross students to-day were mostly unknown a hundred years ago. Microscopy was in its infancy, chemistry was crude, bacteriology and all its attendant interests were of course undreamed of, so that the patient and thorough student confined himself mostly to gross inspections in the case of human pathology, and to the investigation of phenomena in animals living and dead.

It is marvellous to what a degree of accuracy those men trained their unaided senses. Without the microscope, the culture tube, the stethoscope or the thermometer, those differentiations known to us were impossible. But students made the most of their few talents and the great collections of Hunter, Cooper and others bear witness to the enthusiasm and wide range of their inquiries. It was in their observations on the structure of the lower animals that both of these men excelled and outstripped their contemporaries. Hunter did not stop at the dissection of a whale, and Cooper had a dead elephant brought to his own house and worked upon it in his court-yard. Both secured the reversion of animals that died in the collection at the Tower, and found in this a perfect mine of material for their work.

As Cooper grew into practice he never allowed anything to interfere with such daily avocations. When patients thronged to him in the morning he put them off until his consulting hour of eight o'clock, so that the time between five and seven might be devoted uninterruptedly to anatomy and pathology. He made one great collection which he gave to St. Thomas's, and later, when the schools were separated, he plunged with renewed ardor into the formation of a museum for Guys; and before his death this too had grown to great size. In these pursuits there was no rest for his assistants. He knew good men and how to make use of them, and was able to inspire them with his own enthusiasm. If an autopsy was desirable it must be obtained; if a strange animal was heard of it must be brought to him for dissection; if a lecture was to be given it must be illustrated by specimens from his own museum, and if his collection was at fault the lack must be made good. Wherever he went he studied and investigated; when at home with his parents he haunted the shop of the local chemist; when travelling abroad for pleasure he spent his time in museums, hospitals and dissecting-rooms; when at his place in the country he tried vivisection experiments on his own pointers, and stopped to dissect the very birds that he shot.

In 1834, when he was sixty-six years old, he made an extended tour on the Continent, and from notes in his diary we find the sort of busy man he was:

"Paris, Oct. 7th. At half-past ten I called upon M. Dupuytren. He was ill. I found him with loaded lungs and a quick pulse, 140, short breathing and with a sunken countenance. . . .

"Dupuytren has provided me with all I wish for as to the cadavers.

"Oct. 8th. Rose at six and went with Dr. Marx to see the provision Dupuytren had made for my dissecting. We went to the Hotel Dieu, and I found a room devoted entirely to myself. A cadaver there. I dissected for nearly two hours before breakfast, and afterwards for four hours, between ten and two o'clock.

"Oct. 9th. Dissected from ten until one. . . .

"Oct. 11th. Went to the dissecting-room but found they had removed my subject."

He never rested, and I doubt if he could have been a very comfortable person with whom to live; but his friends loved him and from the very first he secured the enthusiastic admiration of his contemporaries in the profession.

Poverty never came to burden or to stimulate Astley Cooper. In his student days he was comfortably supported by his father, and in the beginning of his practice he married a wife with a fortune. The unceasing anxiety and effort to make a fair living which submerges and drives to the wall so many brilliant young professional men did not come to him. He never knew the maddening anxiety of waiting for a practice, and even in the height of his career he subordinated his patients to his teaching.

(To be continued.)

Clinical Department.

ORBITAL INJURY FROM CONTRE-COUP.[1]

BY FREDERICK E. CHENEY, M.D.,

Assistant in Ophthalmology, Harvard Medical School; One of the Surgeons to the Massachusetts Charitable Eye and Ear Infirmary; One of the Ophthalmic Surgeons to the Out-Patient Department of the Massachusetts General Hospital.

The expression, injury from contre-coup, though most often used in connection with cranial lesions, is, of course, equally applicable to an injury to any part of the body where the conditions fall with the definition of this term. "Contre-coup, or counter-stroke," is defined by Foster as "the transmitted commotion manifested at a certain point in the body when a blow is received at a distant or opposite point." This definition is probably the generally accepted one. The term may be especially well applied, it seems to me, to certain injuries of the orbit, resulting from a blow on the orbital margin, producing comparatively little effect at the point of impact, but followed by deep intra-orbital lesions of more or less serious nature. In the orbital, as in the cranial, cavity, a hemorrhage, an abscess, and perhaps also a fracture of the bony wall may follow such a blow, and in like manner the situation of the lesion can at times be demonstrated with a considerable degree of accuracy by noting the effect of nerve pressure in the muscles which they supply.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1898.

A fracture through the apex of the orbit, as a result of a blow on the orbital border, is not of extreme rarity and there may be little in the history or symptoms to indicate that a fissure extends from the point of impact backwards. It is probable, however, that in a large proportion of such cases fissures do exist, and they cannot, of course, be regarded as fractures from contre-coup, although the structures at the apex seem to be the only ones seriously involved. A case in point is that of a boy who was seen four days after being thrown down by another boy, striking the left eye on a horse-car rail. He was unconscious for about an hour, but there was no bleeding from the nose, mouth or ears. The eye was found to be completely blind when he regained consciousness. Upon examination the condition was as follows: ecchymosis of both upper and lower lids and of the ocular conjunctiva. There was no emphysema, no abrasion of the skin. Moderate ptosis existed, and motion in all directions was very limited. There was slight exophthalmus, but no more than could be accounted for by a paralysis of all the ocular muscles. Pupil dilated and reacted neither to light nor accommodation. Vision absolutely lost, there being no perception of light. The transparent media were perfectly clear. The retina was edematous and the seat of numerous hemorrhages, especially marked in and around the macular region and the borders of the disc were slightly indistinct. The condition resembled very much the appearance that results from a sudden obstruction to the retinal circulation. The case was kept under observation for about six weeks and when last seen the ptosis had nearly disappeared. The movements upward, downward and outward were about normal, but still defective inward. There was at no time perception of light. A paralysis of all the ocular muscles after such an injury would, of course, indicate a lesion at the apex of the orbit and the ocular symptoms, the complete blindness and fundus changes, could be best accounted for in this connection by a fracture through the optic foramen with pressure on the optic nerve and perhaps also the ophthalmic artery. There is certainly nothing to indicate the extension of a fissure backward from the orbital border, but it is, of course, impossible to say with any degree of certainty that such a condition did not exist.

A case that illustrates especially well an injury from contre-coup is the following: the patient, a little girl, was seen at the Massachusetts Charitable Eye and Ear Infirmary, October 13, 1890. Two weeks before she was struck under the left eye with a small stick. A few hours after the blow it was noticed that the left upper lid began to droop, and after a little it completely covered the eye. As far as could be learned, the blow was not a severe one. There had been no redness of the eye and little, if any, pain. The point of direct injury was indicated by a slight abrasion of the skin nearly healed at about the centre of the lower orbital border. There was no tenderness on pressure at any point. The ptosis was found to be complete. The eye moved freely in every direction, no exophthalmus and no injection or ecchymosis of the ocular conjunctiva of the lids. The pupil was of good reaction, the accommodation active, and the ophthalmoscopic examination negative. There was a small opacity of the cornea and a posterior synechia, which may or may not have resulted from the blow. The ptosis began to improve after she had been under observation for about a week, and within a short time disappeared completely. The question of localization, in this case, is not a difficult one. It is, I think, safe to conclude that the branch of the third nerve supplying the levator palprebræ superioris was the tissue injured, and not the muscle itself. A contusion of the muscle at some point might, of course, give rise to defect in motion, but it is hardly possible that a complete paralysis could result unless it had been very extensively lacerated. It is to be remembered that the upper division of the third nerve extends from the sphenoidal fissure inward over the optic nerve. Of its two branches, one goes to the superior-rectus, the other passing through it or to its inner side, breaks up into a number of branches and enters the under surface of the levator near the junction of its posterior and middle third. An injury of the levator branch of the third nerve would, therefore, localize the point of counter-stroke at the upper and a little to the inner side of the optic nerve within the muscular cone, not far in front of the optic foramen and nearer the inner than the outer orbital wall. Another point in connection with the case which it will be of interest to consider briefly is the nature of the lesion. The fact that the ptosis did not develop immediately and that it gradually became more complete after it was first noticed would make it seem probable that pressure on the nerve fibres, and not a laceration, was the cause of the paralysis. This pressure may, of course, have resulted from a hemorrhage or swelling of the surrounding orbital tissues, although the absence of conjunctival ecchymosis would certainly exclude a hemorrhage of any extent, and it would be hard to understand such a condition remaining so extremely local. The most probable theory, it seems to me, is that there was a slight bruising of the nerve followed either by a serous exudation or a small hemorrhage into its sheath. These cases of ptosis, without other ocular paralysis, following blows on the orbital margin are not common, but I have recently seen another case through the kindness of Dr. Walton. In his patient, the ptosis, which followed a blow from a ball, was not complete but had persisted for about six months; there was little probability, therefore, of its spontaneous disappearance.

In a second case which came to the Infirmary July 7, 1890, the counter-stroke seems to have been received at about the same point as in the preceding one, but the injury was of a much more serious nature. The patient was a boy fifteen years of age. Two weeks before while at play, he received a sharp blow over the left eye from a stalk of rhubarb. There was considerable pain directly after the injury but it soon ceased and nothing more was thought of it until the following day when it was noticed that the upper lid drooped and there was some redness and watering of the eye. The redness disappeared in a day or two but the condition of the lid remained unchanged. Seven or eight days after the injury it was discovered for the first time that the left eye was more prominent than the right. When examined by me, the ptosis was found to be complete and there was marked exophthalmus. The ocular movements were good laterally and downward but very defective upward. There was no redness, abrasion, swelling or ecchymosis of the brow, lids or globe or other symptoms that would suggest a recent injury. The pupil was of good size and reaction, the transparent media clear and the fundus normal. There was no tenderness, on pressure, at any point along the orbital border or of the globe. The vision was nine-tenths of the normal and was not improved by glasses. The right eye was normal in every respect. The boy was said to be perfectly well with the exception of his eye trouble and there was nothing in his general appearance to indicate the contrary. When seen three days later the exophthalmus had decidedly increased, the ocular movements were more limited in all directions and the vision had fallen to less than two-tenths. There was still no edema or ecchymosis of the lids or conjunctiva and no headache, nausea or other signs of general disturbance. The ophthalmoscopic examination showed well-marked optic neuritis with a prominence of the disc and complete obliteration of its borders. The retinal veins were congested and tortuous, but there were no hemorrhages.

The development of optic neuritis in connection with the greater degree of exophthalmus at this date furnished unmistakable evidence of an increase in the post-ocular pressure, and the fact that the vision had fallen off from nine-tenths to two-tenths within three days left no doubt as to the advisability of immediate surgical interference. The operation was performed under ether on the afternoon of the same day. An incision was made through the upper lid, a little to the inner side of the centre, just below the orbital border and continued backwards into the orbit for about an inch and a half. Withdrawal of the knife was followed by considerable bleeding, but no escape of pus or decrease in the exophthalmus. The incision through the integument having been enlarged, the orbital cellular tissues were divided as freely as possible in the region of the suspected abscess; the method being to introduce a pair of small, straight forceps into the wound, draw forward the tissues presenting and cut into them with blunt-pointed scissors. A pus cavity was finally opened and upon making firm pressure over the eye-ball one or two drachms of thick, yellowish pus escaped. The cavity was then thoroughly syringed out with a $\frac{1}{5000}$ solution of corrosive sublimate, a drainage-tube inserted and a compress bandage applied. Directly after the escape of pus the exopthalmus decreased a little, but the reduction was only temporary, the globe being again forced forward, and at the end of two or three minutes was as prominent as before the operation. For ten days there was considerable edema of the lids and ocular conjunctiva, but there was very little pain, no headache and but slight elevation of temperature. The wound was syringed daily with a corrosive-sublimate solution and for the first few days there was considerable purulent discharge. The exophthalmus began to decrease at the end of the second week and at the time of discharge, August 27, was hardly noticeable. The vision began to improve somewhat earlier, it being seven-tenths of the normal seven days after the operation, and fully restored three weeks later. The boy was again seen October 13th, when, with the exception of an almost complete ptosis, the ocular condition was found to be normal. He was admitted to the house at this time, and Pagenstecher's operation for ptosis performed, which resulted very satisfactorily. There is nothing in the history of this case to indicate that any of the orbital nerves were primarily involved except the branch of the third supplying the levator. A paralysis of the superior rectus may have been an early symptom, however, there being pressure on both branches of the upper division of the third or on their common trunk. The defective motion of the other ocular muscles practically developed while the case was under observation and was undoubtedly secondary to the inflammatory condition and resulting pressure of the intra-orbital tissues. There was nothing that would suggest a fracture of the orbital bones, or an intra-orbital hemorrhage, and the ptosis following so quickly upon the injury would practically exclude the possibility of pus forming in one of the neighboring cavities and perforating into the orbit. The only reasonable conclusion to be drawn, therefore, is, that the counter-stroke was of sufficient severity to result in a breaking down of the orbital tissues and the formation of an abscess, and that in this case, as in the preceding one, the point of injury was in the posterior third of the orbit within the muscular cone above the optic nerve and nearer the inner than the outer orbital wall. Although the orbit is not a large cavity the localization of an abscess or other pathological change is often most unsatisfactory. To explore an orbit and find nothing to account for a high degree of exophthalmus has, I presume, been an experience of most ophthalmic surgeons. A small collection of pus far back and in a mesh-work of connective tissue may result in an exophthalmus out of all proportion to the degree of pressure that it could, of itself, induce, for the probable reason that it is accompanied by an extensive edema and vascular engorgement of the orbital contents. In a case like the one just cited, therefore, points in localization should be carefully considered and, if operation is decided upon, a free division of the connective tissue with blunt-pointed scissors offers the safest, as well as the surest, means of finding and evacuating a collection of pus.

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A CASE OF INTERMITTENT HYDRONEPHROSIS CURED BY A URETEROPLASTIC OPERATION.[1]

BY JOHN W. ELLIOT, M.D., BOSTON.

The patient, an unmarried woman, twenty-three years old, a type-setter by occupation, entered the Massachusetts General Hospital on June 12, 1897.

Two years before entrance, while at work, she had been suddenly attacked with pain in the back and right lumbar region, accompanied by nausea and vomiting. After one day in bed she was well again. A few months later these attacks occurred every three or four weeks. They were in no way connected with menstruation, and she was never jaundiced.

During the following summer she was free from the attacks, but in the autumn they began again and have continued ever since, occurring at times as often as every fortnight. In January she first noticed a tumor in the right side which has gradually increased in size, although at times it has almost entirely disappeared. On May 20th the tumor appeared with an attack of pain; the next day the tumor disappeared with the pain. She did not notice that she passed a large amount of urine at this time. She had never passed gravel.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1898.

She was in the midst of an attack when she entered the hospital. Temperature 100°, pulse 104. The urine was acid. Specific gravity 1,024. Slight trace of albumin present. Sediment considerable, very occasional hyaline casts with pus cell adherent. Occasional small, round cell, often fatty. In the right lumbar region, there was a tumor the size of two fists. It extended past the median line in front, and could be plainly felt in the back. It was slightly movable and indistinctly fluctuating, but not painful to touch.

On June 13th, the next day after entrance, the tumor had entirely disappeared with the pain, forty ounces of urine having been passed in the night.

The right kidney, however, could be felt much more distinctly than the left. It moved up and down with respiration, but on changing the position of the patient it did not move out of place.

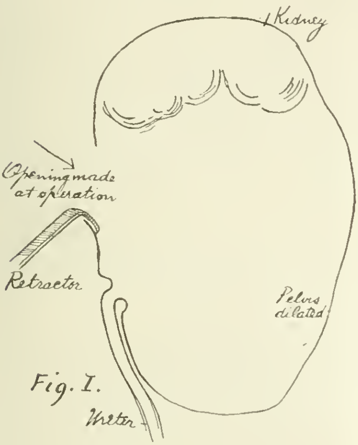

Fig. I.

On June 21st I found on examination periuterine adhesions on the right side in such a position that there seemed a possibility that they might bind down and occlude the ureter.

July 2d. The patient began to have pain and fulness in the right side and the next morning the tumor appeared again. This time the tumor became smaller on the second day, and disappeared on the third day, after passing twenty-nine ounces of urine.

The patient was again allowed to go about the hospital grounds, and on July 23d the tumor began to appear again and, to my surprise, the quantity of urine was much increased at this very time.

July 25th. Outline of tumor visible. Patient suffering a great deal of pain.

July 28th. The operation was done with the patient on the left side, bent over a sand bag. The tumor could be felt, although considerably diminished in size. The kidney was exposed by a lumbar incision. It was found to be nearly twice its normal size. The dissection was carried along the under side of the kidney which finally was tipped over toward the median line. The pelvis was then seen lying in folds and somewhat adherent to the surrounding fat. It was many times its normal size, the distance from ureter to calices being about five inches. The ureter, of normal size, was found leading off from the side of the pelvis, a pouch of which extended below the level of the mouth of the ureter on the inner side. The pelvis was opened by a transverse incision one and a quarter inches long. The mouth of the ureter was found directly beneath this opening. About the ureteral opening was a raised ring one-eighth inch in diameter, consisting of fibrous tissue which acted apparently as a sort of dam. (See diagram No. 1.) To the inner side of this dam the pelvis was much dilated. The urethra was catheterized with an English bougie No. 5 (12 French) which met no obstruction. No. 6 English did not pass easily. Calices and pelvis of kidney examined but no stone or other disease was found. The obstruction to the urine was therefore apparently due to a valve action of the pelvis. It appeared as if a certain amount of urine collected in the pelvis behind the raised end of the ureter. This caused the pelvis to sag and press on the ureter, closing it completely. The mouth of the ureter was laid open by an incision through the raised ring and extending one-half inch downward. The incision was made toward the dilated sac of the pelvis on the inner side of the ureter to form a channel for the flow of urine. The sides of this longitudinal incision were pulled apart until the ends could be united in the middle, thus changing the line into a horizontal one (like the pyloroplasty). In this position the cut edges were united by catgut sutures inside the pelvis of the kidney. (See Fig. 2.)

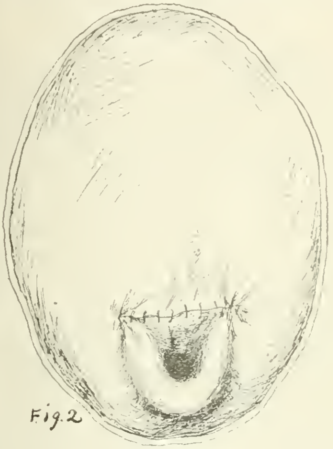

Fig. 2

Looking into the pelvis of kidney showing result of plastic operation on the ureteral opening.

A bougie was left in the ureter and a drainage-tube and gauze packed into the pelvis, the outside wound being partially closed.

The patient made a good recovery. The bougie was removed in three days.

There followed a moderate pyelitis which was much benefited by washing out the pelvis. On August 17th the wound was allowed to close, but so much pus appeared in the urine that the wound was reopened in order to continue washing the pelvis. A few days later the wound was again allowed to close and the pus in the urine gradually disappeared, and the patient left the hospital September 13th in good condition.

November 29th. Patient reported that she had had no further trouble and was working at type-setting. Urine normal. No albumin.

April 6, 1898. The patient was shown to the Surgical Section. She stated that she was in good health and was working steadily. On examination the right kidney could be felt somewhat enlarged, but there was no sign of a recurrence of the hydronephrosis.

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A CASE OF PERFORATING GASTRIC ULCER. OPERATION AT END OF TWENTY-FOUR HOURS. RECOVERY.[1]

BY A. T. CABOT, A.M., M.D., BOSTON,
Surgeon to the Massachusetts General Hospital.

The following case is unusual, in that recovery followed an operation which was done at least twenty-three hours after perforation of the stomach occurred. Usually operative interference to be successful in these cases must follow closely on the accident; for a rapidly fatal peritonitis is the almost immediate consequence of the escape of the stomach contents into the abdomen. The patient's good fortune in this case was due to the somewhat unusual character of the perforation.

Mrs. G., about thirty years of age, was seen in consultation with Dr. C. C. Odlin, of Melrose, at eleven o'clock on the morning of February 4, 1898. She had for some time been troubled with symptoms of indigestion which were occasionally of sufficient severity to cause vomiting. One week before the vomitus had contained a small amount of blood. An especially troublesome feature of her condition had been the formation of large quantities of gas in the stomach. At one o'clock on the afternoon of the previous day, while at the house of a friend, she had been suddenly seized with violent abdominal pain. A swelling of the abdomen came on rapidly, so that when Dr. Odlin saw her a short time after the seizure it was already tensely distended. He found her in quite a profound condition of collapse. With the use of morphia and of hot fomentations the pain was somewhat controlled and her condition slowly improved.

Our examination showed the abdomen to be tensely distended, somewhat tender everywhere but especially so in the left iliac region and in the epigastrium. No resistance or mass could be felt anywhere. Percussion was tympanitic and especially high pitched in character. The liver dulness had entirely disappeared and a high tympanitic note was obtained over that organ.

A probable diagnosis of perforating gastric ulcer was made and an immediate operation was advised. This was agreed to and at once prepared for. The abdomen was opened just before twelve o'clock. On incising the peritoneum, large quantities of odorless gas escaped. The stomach and intestines were considerably distended and the peritoneal surfaces were moderately injected but no fluid or solid stomach contents were seen although there was a small amount of turbid serum in the dependent parts of the abdomen.

The stomach presented a normal appearance except that just at the edge of the liver was a little fibrinous exudation. Separating the stomach from the liver, more of this exudation was found but not in any quantity. At one point on the lesser curvature of the stomach the fibrin was a little thicker than elsewhere and on wiping it off a yellow, sloughy area about one-quarter of an inch in diameter was brought to view. The centre of this was perforated by a minute opening through which a few bubbles of air escaped. Beneath this the stomach wall was slightly indurated over an area about one inch long by three-quarters of an inch broad.

The above-described opening was closed by folding the stomach wall together over it with Lembert stitches in two rows. These were so taken as to fold in the entire portion of the wall that was occupied by the induration. It was believed that the indurated area accurately marked the base of the ulcer as it existed on the stomach wall and by folding this in, any danger of further enlargement of the perforation in the ulcerated area was guarded against. The accessible portions of the abdomen were then irrigated with a salt solution and carefully wiped out. A small wick of gauze was laid over the lesser curvature of the stomach, reaching beyond the seat of the ulcer and the wound was then closed, leaving a small opening at the upper angle for the emergence of the end of the gauze.

The patient made a steady and uninterrupted recovery. The most troublesome symptom during convalescence was flatulency, which was excessive. Nourishment was provided for by liquid enemata the first few days after the operation, after which food was given in small quantities.

The bowels moved on the third day and the gauze was removed on the fifth day. The wound finally closed at the end of three weeks.

In this case the giving way of the stomach wall in the ulcerated area was undoubtedly due to the extreme distention of the viscus with gas. As far as could be seen, none of the fluid or solid contents had entered the peritoneal cavity. The sloughing condition of the stomach wall just about the point of perforation makes it probable that a much larger opening would presently have been made by the action of the gastric juice on this dead tissue.

The point of greatest diagnostic value in this case was the absolute disappearance of the liver dulness in consequence of the great amount of gas in the peritoneal cavity.

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A CASE OF ACTINOMYCOSIS.[1]

BY E. A. CODMAN, M.D., BOSTON.

The patient entered the Massachusetts General Hospital July 18, 1895, in the service of Dr. F. B. Harrington, by whose kindness I am able to report the case.

He was forty-eight years old and married. The family history was negative, except that his mother and an uncle died of phthisis.

Previous history good until three years before, that is, 1892, when he had a severe attack of the grippe with a very bad cough. His attacks of coughing were so violent that they attracted a great deal of attention wherever he went, as in a train. This cough lasted with decreasing severity until within a month of entrance. The sputum was sometimes bloody, but usually yellow and foamy. About one year before entrance, that is, summer of 1894, a swelling about the size of a dollar appeared on chest wall near the site of present sinus. In September this swelling burst and a sinus formed. In June, 1895, two other such swellings and sinuses formed.

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[1] Read before the Surgical Section of the Suffolk District Medical Society, April 6, 1898.

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The cause was supposed to be tubercular necrosis of one of the ribs, and he was recommended to the hospital to have the sinuses cleaned up.

The chest was negative except for cardio-respiratory murmur in region of apex, and harsh breathing with a few râles in left front, in region of sinuses. There were two sinuses and one old scar in cardiac region, low down.

Before entering the hospital the patient had been working for twenty-five years in a straw-hat factory. The straw used was imported from Italy, China and other places.

An operation was done by Dr. F. B. Harrington, and the tract between the two sinuses was dissected out. This tract appeared to be an ordinary tubercular sinus, but Dr. Mallory, who happened to be present at the operation, noticed some yellow granules in the discharge and suspected actinomycosis. He examined these under the microscope and in a few minutes was able to verify this diagnosis. Another tract was then dissected out and the wounds closed except for small drains.

The wounds healed readily except where drained, and on the 25th the patient returned home to West Upton with instructions to take K. I. in increasing doses.

A letter from the patient on January 12, 1896: — "As regards my side, I will say it has healed, as you might say. Since I was in Boston I have taken the medicine you prescribed for me, and shall continue to do so. I expect it will break out in a week or so. There will be a little bunch come about the size of a pea and quite sore. In course of two or three days I tap it with a gold pin, and in two or three days it is healed. A very little matter comes out and then clear blood. These bunches come in the wound. They do not come as often as they did but seem to grow less. As to my health, I have not been so well for five years as I am now."

I saw the patient again in February, 1896. His general health was better than for years. He weighed 144 pounds against 132 for the last fifteen years. He had been taking the iodide up to 110 grains daily.

A fresh abscess which had appeared above median scar, I opened and curetted as far as possible. A week later I endeavored to excise the sinus, but found that it extended over two inches under the sternum. Dr. Mallory was kind enough to examine the specimen again and found the fungus still present.

This wound healed in about six weeks. Since then the K. I. has been continued, and on November 23, 1897, he writes as follows: — "It remained about the same for eight or ten months, and for the last four months it has not troubled me much. It will gather in the same place that you opened when I last saw you. It has been two weeks since I have opened it. Then I got two drops of blood, no matter; it seems to grow less. I think by the feeling it will have to be opened in a week or so. It forms a blood-blister and no larger than a quarter of a small cranberry. There is no pain any more than a sliver under the skin large enough to fester. I call myself better than for years. I have taken the medicine most of the time. I don't think there has been over four weeks in the time I have been without taking it. I skip a day and sometimes a meal or two, that is all. I am working ten hours and feel fine."

The patient has been kind enough to allow me to show him to-night. The sinus has not broken out since six weeks ago. Unfortunately, for the last week he has had a bad cold so that he appears in perhaps worse condition than he really is.

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Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular meeting Wednesday, April 6, 1898, Dr. H. L. Burrell, in the chair.

Dr. Codman reported

A CASE OF ACTINOMYCOSIS.[1]

Dr. A. T. Cabot reported

A CASE OF PERFORATING GASTRIC ULCER.[2]

Dr. J. W. Elliot read a paper on

INTERMITTENT HYDRONEPHROSIS WITH CURE BY OPERATION.[3]

Dr. Richardson: Cases of this kind comprise a field in which the prospect seems to be alluring and brilliant. I was so much impressed by Fenger's paper that I performed the operation on the first case of intermittent hydronephrosis that I saw. This case I reported a year ago, in the *Transactions* of the American Surgical Association. The principle employed by Fenger which Dr. Elliot followed is, I think, the same principle which I used, but I was able to use it, I think, in a more satisfactory way in my case than in those in which it is necessary to open the pelvis of the kidney. I showed my patient at the clinical society of the hospital about a year after the operation and found a perfect cure. The patient was a nurse and had a recurring tumor in the region of the gall-bladder. In fact, I thought the trouble was in the gall-bladder and operated for that. I found that the gall-bladder was normal, but that there was a retro-peritoneal tumor in the region of the kidney which I recognized as hydronephrosis, so that afterwards in my second operation I was guided by the knowledge of the anatomical relations better than if I had not performed the original and more or less unnecessary exploration. In this case the Miculicz operation of pyloroplasty was employed. In Fenger's the valve was removed by an intrapelvic longitudinal incision converted into a transverse one. I used very fine silk and the joint came out very nicely just as pyloroplasties do for strictures of the pylorus. The woman made a good recovery and has been well ever since. It was not a movable kidney. There was no preliminary history in my case, nothing pointing to the cause. I think these cases are very interesting and they open up a field which I think will be a brilliant one when we get the technique of the operation so well understood that we avoid the dangers of extravasation and septicemia. In my case the urine was perfectly aseptic, no evidence of pyelitis, in fact, everything went on just like any other aseptic operation. Half the incision was in the pelvis and half in the ureter.

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[1] See page 134 of the Journal.

[2] Loc. cit.

[3] See page 132 of the Journal.

Dr. Arthur T. Cabot reported a case of very large hydronephrosis. The sac was as large as an adult head and the ureter in entering it did not seem to make a valve. A bougie was introduced into the ureter well down towards the bladder and then the edges of the incision into the pelvis of the kidney were fixed to the sides of the wound. In this case the condition seemed more favorable for cure than an intermittent hydronephrosis. The sac was very much larger, and the distention was of long standing. The urine obtained from this kidney by drainage was of good character and fair amount. The bougie was taken out of the ureter at the end of three days and the kidney soon shrank to normal size and the sinus in the side closed quickly.

The patient was seen six or eight months afterwards and absolutely nothing in the way of any distention of the kidney could be made out. In this case, then, no plastic operation was done on the ureter. The ureter was straightened on a bougie and kept straight three days, in which time the walls of the ureter probably became slightly stiffened by the irritation of the bougie, and the kidney also was drawn up and fixed in a better position than it formerly occupied and these two forces operating together obviated the valvular condition that led to the hydronephrosis.

He said that Dr. Richardson's case was the only one he knew that absolutely demonstrated the value of the plastic operation upon the valve. In every other reported operation that he knew a bougie had been introduced into the upper part of the ureter and left there for from three to five or six days and the kidney also in these cases has been fixed whether it is sewed or not. For at the opening made for drainage, an adhesion certainly takes place which fixes the kidney, prevents its going up and down and so removes that cause for hydronephrosis. Dr. Richardson operated without introducing a bougie and without emptying the pelvis and keeping it empty. Cases have been reported in which the simple emptying of the pelvis has been enough to draw the parts into better condition and remove the kink that has caused the obstruction, while the fixation following the operation has confirmed the cure.

As suggesting some points for discussion I will simply say that Cohnheim some years ago showed that ligature of the ureter was not followed by hydronephrosis, but by gradual disappearance of the kidney. The causes of hydronephrosis are a partial or an intermittent obstruction of the ureters, or the gradual closing of them. When hydronephrosis is caused by an intermittent or by a gradual obstruction it may finally become permanent and destroy the kidney; therefore this operation which has been revived by Fenger is of the greatest value if it can be successfully practised, because it saves the very valuable kidney substance from destruction by taking away the cause. The causes of valvular hydronephrosis are very important and suggestive as to treatment. Cohnheim thinks that it is a congenital bending or congenital valve that usually causes intermittent hydronephrosis. Landau and Terrier believe that movable kidney is the usual cause, and Landau has made elaborate experiments on the cadaver to show that pulling down the kidney bends the ureter in such a way as to cause obstruction. Tuffier also takes the same view, and consequently he believes the proper treatment of the intermittent hydronephrosis is nephrorrhaphy. Küster, on the other hand, believes that this condition is brought about usually by pyelitis, the inflammation of the lining membrane swelling the mouth of the ureter and causing moderate obstruction — intermittent obstruction. Simon thinks an accidental asymmetrical dilatation twists the kidney part way round and in that way makes a valve of the ureter which closes and uncloses. Fenger is inclined to believe that all these causes play their parts at different times, and probably at times two of them act together. I think it is important in reporting cases to state what condition was found. In my case the kidney certainly was not a typical movable kidney. It moved up and down but did not move sideways. All kidneys, I suppose, move up and down more or less in respiration. In regard to the operation, Simon wrote the first paper on the subject in 1876, I think. His case died. Trendelenburg opened the abdomen by a lateral laparotomy and split the mouth of the ureter and turned out the mucous membrane, sewed it out to make the opening larger. His patient unfortunately died. Küster intended to do the same operation, but found stricture of the ureter, so he resected the ureter. Fenger (1892) was the first to do a successful operation for intermittent hydronephrosis due to obstruction by valve formation. In his case the kidney was a movable kidney, and he not only cut away the valve but fixed the floating kidney itself. Mynter, of Buffalo, in 1893, did the second successful operation. Since then there have been several in Boston, and I dare say others.

Dr. Watson: I have had no operative experience in this matter, so I will not speak on that aspect of the subject.

Dr. Elliot has referred to Cohnheim's early experiments with reference to renal retention. Albarran has recently made an interesting series of similar observations; among them the following things were noted: The immediate effect of the ligature of the ureter is to produce an enlargement of the kidney, due not to the distention of the pelvis by the collection of urine in it but to congestion of the organ itself. The secreting function of the kidney is suspended and but a few drops of urine collect.

A rapid destruction of the renal tissue takes place if the total obstruction of the ureter continues. In partial retentions the condition of enlargement due to congestion of the kidney and the temporary suspension of the renal function are also observed, but if partial obstruction is continued or often repeated hydronephrosis is ultimately produced. The congestive enlargement of the kidney has usually been assumed to be due to hydronephrosis by clinicians.

I have recently had the opportunity to note, for a short time, the phenomena produced by complete ligation of the ureter in the living subject; this occurred during a nephrectomy. The kidney was bound down in an abnormal position by extensive adhesions. I ligated the ureter low down as the first step in the operation; the time occupied after this in freeing the kidney prior to its removal was about twenty-five minutes. In the first place, previous to the ligature of the ureter I had the opportunity to observe the rhythmic peristaltic-like contractions of the renal pelvis and upper end of the ureter in the propulsion of the urine toward the bladder. As soon as the ligature was applied these contractions ceased, but for a time could be reproduced by sharply tapping upon the pelvis with the handle of a knife.

But a few drops of urine collected in the pelvis and after a few minutes the kidney began to enlarge through disturbances in its blood circulation; this enlargement was not great during the time that it could be noted. This observation corresponds with those of Albarran's referred to above, so far as it went.

A further series of Albarran's has special interest from the point of view of the surgeon. In it he showed how much greater the possibilities of restoration of the renal function were after what seemed at the time of operation very extensive destruction of the kidney tissue by hydro- or pyo-nephrosis than we have thought heretofore. Many of us have had opportunities for verifying this fact clinically in cases of the above-named conditions after a nephrotomy has been done. In the case of one patient for whom I did a nephrotomy three years ago and showed to this Society a year later, I have made frequent quantitative examinations of the urinary solids and have their gradual increase and a degree of return toward the normal that seemed impossible at the time of operation because of the amount of destruction that had already taken place. These things, together with the increasing number of successful results of the conservative plastic operations upon the renal pelvis and ureter such as this one that Dr. Elliot has reported here to-night, give promise of our being able to avoid the far more dangerous operation of nephrectomy in a certain number of cases by substituting these for it, and they should certainly be given a wider trial.

Dr. Elliot: I was leaving the loin open, so it was more convenient in this case. My bougie was a closed one, and did not carry any urine at all. I followed Fenger. I thought afterwards that a bougie would not prevent a stricture forming because it is too early in the first three or four days. Fenger had succeeded with the bougie and I knew Dr. Cabot had, so I thought I would do it in that way. The bougie does not particularly appeal to me, but it seems to work well.

Dr. Porter: This subject appeals to me more because it is a distinct advance in the conservative surgery of the kidney than from any other standpoint. Up to some few years ago a hydronephrosis of the kidney was a condition which led to destruction of the kidney and to final extirpation. It seems to me this is a very great advance in that line and it appeals to me somewhat more than ordinarily because just prior to the advent of this operation from the hands of Fenger I had a similar case to those that have been reported to-night, in a movable kidney with hydronephrosis. I did nephrorrhaphy and the case was relieved for some time, but the condition returned and the patient finally submitted to nephrectomy for the purpose of being relieved from the constantly recurring attacks of pain which laid her up from her duties a number of days and even at times extending into weeks. As soon as I heard Fenger read his paper I recognized this as a case that could have been relieved by such an operation as described to-night. Since that time I have not had a case which seemed to demand the operation. It is one of those cases the surgeon is looking for, and I hope the time will not be long when we shall have reports of more of them.

In answer to questions Dr. Porter stated that when he did the nephrectomy the pelvis was still dilated. The patient was aspirated before the nephrorrhaphy was done and went home, and was relieved quite a while. He was summoned by her doctor for this recurrence and advised nephrectomy. A year afterwards she wrote that she was in perfect health.

Dr. Elliot: I think the cases brought up this evening are very interesting in connection with the theory of cause and cure. Dr. Porter's case more or less disposes of the probability of curing these by simply fixing the kidney. Before Fenger's time it was the opinion of Touffier, Landau and such men that fixing these kidneys would cure them. Dr. Richardson's case shows that it is not the bougie that does it, and Dr. Cabot's case shows that certain ones of these cases can be cured without a plastic operation. I was interested in what Dr. Cabot said about cure by aspiration. It occurred to me some time ago that curing by aspiration was probably by a final atrophy of the kidney after the urine had been drained away, and two years ago I happened to have a case of pelvic inflammation, and in the course of that case there was a hydronephrosis, which was aspirated by my colleague who had charge of the case with me, and that was a perfect cure so far as the hydronephrosis went. The case went on from bad to worse and finally the patient died. At the autopsy this cured hydronephrosis was found to be a totally destroyed kidney, so that confirmed the idea which I had had in my mind. It certainly shows that sometimes the cases of hydronephrosis apparently cured by aspiration are probably the ultimate atrophy of all kidney substance. The encouraging thing about this new operation is that here in Boston there have been three cases done following Fenger and all have recovered, which shows that probably the mortality will not be very high.

Dr. F. E. Cheney read a paper on

ORBITAL INJURY BY CONTRE-COUP.[4]

Dr. Standish: I have been much interested in Dr. Cheney's paper, although I do not know that I have ever seen a case exactly like the one reported. Of course what he says in regard to abscess in the orbit has been the experience of every one. An effort to find a small abscess in the back of the orbit is rarely successful. Fractures into the orbit of course are fairly frequent, and often result in injury to the vessels or to the nerve. Most cases of fracture through the orbit that I have seen have been associated fractures of the base of the skull and have arisen from blows on the back of the head. I remember very well a case I saw when at the Massachusetts Hospital. A sea-captain fell backwards over the hatch, and struck on the back of the head. There was immediate loss of vision, and subconjunctival hemorrhage extending down on the cheek. In that case the ophthalmoscopic examination showed no blood in the vessels of the retina; undoubtedly the ophthalmic artery had been ruptured by a sharp edge of the bone at the back of the orbit, at the time of the fracture. Of course in such a case there is no dispute as to what has happened; but there are other cases, of which I have seen two, which I wish to speak of on account of their medico-legal importance. I saw a girl fifteen or sixteen years of age who had been pushed off a wagon by the driver, while trying to steal a ride, and fell into the street striking on the back of the head. There was no illness, no hemorrhage into the orbit, no result whatever, except the fact that the child said she could not see out of one eye. The ophthalmoscopic examination showed a perfectly normal fundus; the vessels were properly filled, the nerve looked well and everything seemed to be in good shape. The case was a medico-legal one and I was inclined to think it was probably a case of pure fraud. The interesting point came three months afterwards, when there was undoubted atrophy of the nerve in that eye and it became evident that there had been a fracture through the orbit and the nerve injured, and that the child had been correct in saying she saw nothing. The second case was similar to the first: an injury to the back of the head, nothing to be seen in the eye, but after a period of three or four months, atrophy supervened. In that case also, there had been a fracture sufficient to do this damage without there being any other sign of fracture. I am very glad to hear these cases Dr. Cheney has reported. They are not common.

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[4] See page 130 of the Journal.

Dr. Walton: These cases are certainly very rare, as Dr. Standish has said, and this makes it all the more important for us to be able to recognize them. I will pass around, in the first place, this photograph of the case to which Dr. Cheney has alluded, in which almost immediate painless paralysis or partial paralysis of the lid followed a blow on the forehead with a base-ball. This was the first case I had seen, in fact, the only case I have ever seen, and it puzzled me. At first I thought the ptosis might have antedated the injury, but photographs previously taken precluded this supposition. On looking up the literature I found there were a few such cases reported and I am glad Dr. Cheney has tabulated his experiences to aid in drawing general conclusions in a class of cases which isolated would be baffling. It certainly looks as if it must be hemorrhage that takes place in these cases. Rapid onset without pain could only mean one of two things, — either serous exudation or hemorrhage. It seems very improbable that serous exudation of the sheath should produce lasting paralysis, and it also seems improbable, it is true, that hemorrhage in the sheath of the nerve should cause permanent paralysis, judging by our knowledge of other nerves. Gowers has, therefore, suggested that the circulation of these nerves may differ in some way from that of others. Whether this is true I do not know. Such a case as the one to which I have alluded is certainly very hard to explain. It is very difficult to imagine this nerve, however delicate it may be, so ruptured by a blow of a base-ball, as to cause permanent loss of function, and no other symptoms. It is also improbable that there was any fracture. Goldscheider found in one case a hemorrhage in the sheath of one of the branches of the third nerve; the symptoms from which lesion had preceded by several days a meningeal hemorrhage.

PATHOLOGICAL SPECIMENS.

Dr. E. W. Cushing: I. I have, in the first place, a specimen of what was supposed to be a fibroid tumor. A young woman thirty-two years old was perfectly blanched by hemorrhage, and in such shape I did not dare operate. I curetted the uterus and sent her home for two or three weeks and then removed the uterus which was five inches long and three inches broad. Instead of being a simple fibroid, it contains an adenoma forming a mass as large as a goose egg. This disease is quite rare in young women of that age, for it usually comes in those who have passed the menopause. She recovered.

II. I have here another specimen which is very interesting from the age of the woman. A young woman of twenty-six, a few months after the birth of her first child, began to have hemorrhages and on examination it was found that there was a deep ragged ulcer on the posterior lip of the cervix uteri. It was evidently nothing but malignant. I removed it by vaginal hysterectomy. As is my custom in those cases where everything is clean, I united the opening of the floor of the pelvis, matching the peritoneum together and burying the stumps of the broad ligaments, closing the incision in the vagina entirely with catgut; some days after, without much fever, there was a collection in the pelvis, which was opened through the original incision, and a thick pus was discharged, which on examination was tubercular and composed of very little else except tubercle bacilli and detritus. Dr. Leary thinks there must be some tubercular peritonitis or tuberculosis of the large intestine, but there are no symptoms of it. It was an odd thing to have a combination of cancer and tubercle in so young a woman. The patient went home in good condition.

III. This specimen is from a woman who was operated on a year ago at the Massachusetts General Hospital, and she said the operation was for appendicitis. I know nothing about the case at that time. She was there three months and went away with a fistula. That lasted a year, during which time she has not menstruated. She came with fecal fistula, and the oval part of the specimen represents the skin, and the tube of the length and size of the little finger is the fistula leading to the bowel and leading also to abscess of the right tube. I dissected it all out, separated the bowel off, and sewed up the opening in it, removed the right tube and the other tube. The ovaries were missing, but both tubes contained pus. To make everything sure I also removed the appendix which was adherent and she is doing very well; has since gone home well. The interesting thing is that in these cases by cutting around the fecal fistulous opening in the skin the fistula can be dissected out as a thick tube about the size of the finger down to the place where it opens into the bowel, and this gives a chance to sew the bowel up.

IV. At first sight it does not seem plain what the next specimen is, but it is from a case of very large prolapse in a woman seventy-nine years old, who had had it eighteen years and refused all help until she began to have this ulcer form, which at first sight appeared to be epitheliomatous. I therefore dissected out the ulcer from above, and then formed a flap from over the bladder and removing the neck of the womb, which is about one and one-half inches long. A posterior flap was formed and all the redundant tissue dissected away. Joining the anterior and posterior flaps together and uniting the openings running far up on the sides, I was able to push the stump back and build up a perineum. That is the oldest woman I ever operated on. The disease is not an epithelioma, there is a sort of papillomatous condition of the great ulcer which might eventually become epitheliomatous.

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AMERICAN MEDICAL ASSOCIATION.

Meeting of the Section on the Practice of Medicine, Denver, June 7–10, 1898.

(Concluded from No. 5, p. 116.)

There is universal testimony that altitude cures phthisis. Altitude acts in various ways: (1) By dryness, which is inimical to the growth of the tubercle bacillus. (2) By cold, which favors dryness and is a stimulus. It also increases the tendency to sleep. (3) By sunshine, under which the tubercle bacillus can be killed if directly exposed, in a period varying from a few minutes to a few hours. (4) By an increase in the quantity of ozone, the natural purifier. (5) By purity, as the air becomes more and more pure as we ascend. Miquel found the air of Paris to contain 55,000 bacteria to every 10 cubic metres. (6) By rarefaction, the most important factor of all. At an elevation of 13,300 feet, it is one-sixth as dense as at the sea. This rarefaction leads to increased exercise of the heart and the lungs, and so, unconsciously, to gymnastics. The dyspnea, palpitation, vertigo, etc., which attend mountain climbing depend upon insufficient oxygenation of the blood. No elevation has ever been attained in which the quantity of oxygen was not more than sufficient for the wants of the body, and it was for a long time difficult to account for those symptoms which are sometimes embraced under the term "mountain sickness." The explanation was found to be in the phenomena of pressure. The blood-vessels will only take up a certain amount of oxygen at a certain degree of pressure. Bert found that a pressure of fifteen atmospheres is fatal. On the other hand, the blood-corpuscles will not take up enough oxygen under a greatly diminished pressure, and nature adjusts herself to this difficulty by increasing the number of blood-corpuscles but diminishing their size.

The polycythemia is an accommodation to a lessened pressure, for the same increase in the number of blood-corpuscles in animals may be artificially produced by confinement in a rarefied atmosphere. Can we imitate this process in the pneumatic cabinet? The experiments made hitherto have shown no increase in the blood-corpuscles or in the hemoglobin, and still less that increase in strength which develops so rapidly in the mountain climate.

As the virtues of the mountain climate seemed to depend chiefly upon the increase in the number of blood-corpuscles, it occurred to the speaker to try to secure this increase in a more direct way. Transfusion of blood has become practically limited to the treatment of hemorrhage and the poisoning by certain gases. The speaker then dwelt upon the difficulty of getting blood at the time when needed, of the dangers of transfusion, of the bad symptoms following its use, of the different methods in use, etc. The great desideratum was to get a heterogeneous blood which could be introduced into the body with all its ingredients quickly, safely and pleasantly.

He wished to get a blood that contained all the bactericidal properties; blood from a younger animal was therefore to be desired, as older blood loses its power to destroy bacteria. It was also desirable to increase the number of the leucocytes, because the bactericidal properties of the blood rest largely in these cells. The dissolution of the white blood-corpuscles under the action of bacteria liberates the antitoxin which destroys the bacteria.

As the coagulum entangles most of the white blood-cells, it is necessary to prevent coagulation to secure their presence. The process of coagulation is closely connected with the life of the blood, and it may be said in a general way that the process of coagulation represents a beginning dissolution of blood and the prevention of it with simple means may be regarded as the preservation of the life of the blood. The speaker then referred to the many ways of preventing the coagulation of blood; among others being the addition of water, egg albumin, sugar, glycerin, cooling addition of tripsin of peptone, leech bites, bites of poisonous snakes, various drugs, etc. Blood can be kept fluid by a number of agents, each of which being a constituent of the blood and therefore an article of nutrition. These are common salts, bicarbonate of soda and the sugar of milk. The addition to fresh blood of salt, soda and sugar of milk adds nutritive principles, preserves the corpuscles, red and white, intensifies the alkalescence, prevents coagulation and prolongs the life of the blood. Thus the first part of the question was solved.

The next problem, the method of introduction, which seemed to be the most difficult, turned out the most easy. The drinking of blood having certain objections, it occurred to the speaker to introduce the blood directly into the intestines; this was done by means of a fountain syringe, or better yet by using the funnel and tube of a common stomach-tube, which can be easily pushed into and beyond the sigmoid flexure. The injection is taken at night, with the patient lying upon the left side; after the injection the patient should lie fifteen minutes upon the back, then fifteen minutes upon the right side, so that the fluid may find its way through the colon. In no case should the fluid be heated, as it favors coagulation. Introduce the quantity every night, and in bad cases twice a day, previously washing out the bowels with warm water. The patient is directed to add a teaspoonful of salt, two tablespoonfuls of soda and a tablespoonful of sugar of milk to a pint of boiled water and to pour one-half of the quantity into a clean glass jar, requesting the butcher to add to it one pint of fresh calf's blood.

The speaker had lost a great deal of time in determining the best agents for preventing coagulation, so he was able to report upon but twelve cases of phthisis and one of apparently pernicious anemia. The patients without fever showed a continuous gain in weight, but patients with high fever showed no improvement. The cases marked by anemia were the most benefited and showed the most rapid gains — from two to three pounds a week. The most decided change was seen in a case of anemia apparently of a fatal form; twenty pounds' gain in three weeks was reported.

REST: A NEGLECTED FACTOR IN THE TREATMENT OF GASTRO-INTESTINAL DISORDER.

Dr. C. D. Spivak, of Denver, Col., read a paper with this title.

He did not enter into the discussion of the subject from a physiological standpoint, as we had not sufficient data to form a rational physiological theory of rest. He used the word "rest" as the antithesis of action. All of our organs manifest periods of action and repose, some absolutely rhythmical and others intermittent. Rest can be defined as nature's prophylactic. It not only prevents the further breaking down of tissues, but it affords chances for the tissues to store up new energy. The two periods of rest and activity must remain in a direct ratio in order to maintain an equilibrium. Nature insists upon rest "even to the extent of inflicting a twinge of pain on such as disobey her precepts." The surgeon and the neurologist have monopolized rest, the physician uses the whole pharmacopeia first, last and all the time.

The speaker wished to emphasize the importance of this much-neglected therapeutical agent in the treatment of gastro-intestinal affections. The physician has washed, scoured, scratched, punched and electrified the stomach, and is looking forward to the time when he can do the same for the duodenum. These things are all well enough, but the stomach and intestine are in no way different from any other organ in our body. There seems no reason why a bruised limb should be kept at rest, and not a stomach when it is in the same condition. There seems no reason why we should apply the Wier-Mitchell rest-cure to neurasthenia, and not to nervous dyspepsia. The only redeeming instance where the rest-cure is applied to the stomach is in cases of ulcer of that organ. A surgeon does not draw a line of demarcation between an ulcerated, broken, bruised, or simply inflamed limb. Rest is the *sine qua non* treatment. In the stomach, from a simple inflammation to a solution of continuity, the process, both pathological and reparative, is the same. Then why not apply, among other things, the same remedy?

Rest may be applied to the stomach in the following way:

(1) Rest in bed — absolute rest in bed. Sitting is not allowed under any circumstances. The bowels are regulated; the bedpan used. The whole body is sponged every morning. Isolation and massage are also employed if the judgment indicates such measures.

(2) Diet. Abstinence is the best bill-of-fare in many severe cases of gastro-intestinal disorder. Two, or even three, days' fasting will do no harm in cases of ulcer, dyspepsias and diarrheas of all kinds. Nutritive enemata can be employed where longer fasting is indicated. If food is given by the mouth, it should be given in small quantities, no matter whether liquid or solid, and at regular intervals. The quality and quantity of the food must be suited to the individual.

(3) Poultices. It is difficult to formulate a theory as to the action of poultices, but it is certain that they allay the peristaltic movements of the stomach, and make the patient feel comfortable and at rest. In severe cases the poultices are applied constantly day and night for one or two weeks; in milder cases from six to eight hours daily.

Nine cases were reported out of over one hundred treated, with a view of illustrating the groups of diseases wherein the author's method had given satisfaction.

CONCLUSIONS.

(1) Rest is indicated in all dyspepsias the underlying cause of which is a deranged nervous system.

(2) It is indicated in all cases where abdominal pain is present.

(3) In all cases of acute and chronic diarrhea.

(4) In hemorrhage of the stomach or intestines.

(5) In all tubercular cases suffering from disturbed digestion, be it stomach or intestines, and especially those having a vacillating temperature record. The rest-cure is indicated in 90 per cent. of all tubercular cases.

(6) So far as I know there is no disease of the gastro-intestinal tract where rest is not indicated.

Dr. Connell, of Pennsylvania, did not think there was any class of cases that required rest so much as diseases of the stomach. By rest he meant physiological rest; abstain from food entirely.

Dr. Tyson, of Philadelphia, said that the rest treatment of gastro-intestinal troubles would do more or less good in every case; that the application of therapeutic measures in these gastro-intestinal diseases was more or less haphazard. He hoped the time would come when accurate methods of treatment would bring more satisfactory results. A patient could go two or three days without any food, if he is in a position not to demand any force; food is a force-producing agent.

Dr. Spivac closed. He said he had tried to arouse the interest in the profession to one of the best methods that can be used and one which nature tries to use in the cure of disease.

In regard to tuberculosis those cases that were suffering from fever should take rest in bed. I limit these cases where rest is indicated in tuberculosis where there is temperature, diarrhea and vomiting.

REPORT OF CASE OF ANEURISM OF THE CONCAVITY OF THE TRANSVERSE ARCH, APPEARING EXTERNALLY AS A LARGE TUMOR IN THE REGION OF THE HEART,

by Drs. H. W. McLauthlin and William N. Beggs, of Denver, Col.

Dr. McLauthlin read the report of this case.

History: Charles M., age fifty-two, musician, mother died of cancer at the age of seventy and a sister of phthisis. He was dissipated and had contracted syphilis at the age of twenty. Had had rheumatism for fifteen years. Four months before coming for treatment he had bad cold, severe cough and a swelling in the left chest which had persisted, was tender and attended by shooting pains. He had become short of breath and this symptom had increased until he could breathe only with difficulty. He coughed considerably and expectorated. His appetite was good, but he was inclined to diarrhea and had lost about twenty pounds in four months.

Physical examination showed a large tumor the size of two fists, on the left side of the sternum, extending from the lower border of the second rib to the upper border of the seventh rib, and laterally from the centre of the sternum to the middle of the axillary region. This tumor was firm, pulsating distinctly, with no audible bruit. The heart sounds distinct, though the position of that organ could not be determined. Flatness exists over the whole left chest. Respiratory sounds were feeble, and fremitus absent, except in upper part near spine, where there was bronchial breathing with coarse râles. The right side shows exaggerated respiration in spots, with moist râles. There was edema of the ankles and puffiness of the eyelids. Pulse about 90; respiration, 39. Patient weak and apathetic, memory poor, abundant syphilitic marks. Pulsation scarcely perceptible in the right radial artery, extremely weak in the left. There is no tracheal tugging. The right pupil larger than the left. Urinary analysis was negative.

The patient became progressively weaker and the tumor enlarged in every direction; its vertical measurement was ten inches and its transverse thirteen inches. A small amount of straw-colored fluid was drawn from the pleural cavity, and it was evident that there was a considerable amount present. Later, the skin over the tumor became red and blood began to appear. He died within a month from the time he was first seen.

The post-mortem made by Dr. Beggs showed large hemispherical tumor extending from the left anterior axillary line to one inch to the right of the sternum and from the clavicle to the seventh rib. The skin was eroded and dissection showed the cutis vera so thin that it could not be removed without invading the tumor. A considerable amount of cruor was expelled, the tumor was saccular, communicating with the aorta. The eroded distal ends of the second and third ribs extended into the cavity. The left edge of the sternum was eroded to a depth of about one half inch. The pericardial cavity was entirely obliterated by adhesions. The heart was small, pale, flabby, friable and turned to the right on its axis. The valves were normal. The ascending and transverse portions of the arch were dilated and the inner surface wrinkled and atheromatous. The opening of the aneurismal sac began one and one-eighth inches above the upper margin of the semilunar valves, and was eight and one-half inches in circumference. The sac was directed first downward and forward, then forward and upward. In the right pleural cavity there were numerous old adhesions, in the left one and one-half quarts of amber-colored fluid. The left lung was much compressed and consolidated. The upper surface of the liver was covered with numerous shallow, richly stellate scars, and was slightly granular. The splenic capsule was much thickened and opaque, white in color, and there were a few shallow stellate scars on the surface.

A peculiarity of this tumor was its location, the usual place being beneath the sternum, below the right or left clavicle or in the back.

DIFFERENTIAL DIAGNOSIS.

The signs and symptoms during life strongly suggested aneurism, but the pulsation was nowhere strong, and Da Costa's most emphatic sign, the presence of two points of pulsation in the chest, two hearts apparently, was not ascertainable. There was absence of thrill and murmur from the tumor.

A pulsating empyema sometimes simulates aneurism. In this case the physical signs of fluid in the chest were present, but the tumor was enormously large for an empyema pointing externally. The tumor was firmer and the pulsation more expansile than in empyema; pressure signs were also present. The fluid in the chest was non-purulent.

Solid tumors of the chest, sarcoma, lymphomata and lymphadenomata are infrequent and tend to grow inward rather than outward. If such growths project externally and pulsate they may simulate an aneurism with rather firm clots. The expansile force is usually much less distinct. The adjacent glands of the axilla and neck are often enlarged, and the veins on the side of the thorax affected are liable to be varicosed. In cancer, the general health is usually poor.

Mediastinal abscess was not considered because of the size and location of the tumor, the character of the pulsation, the degree of the pressure symptoms and the character of the temperature.

The average duration of life after the first distinct symptoms of aneurism is given from fifteen to eighteen months. In 26 instances out of 68 death occurred from rupture of the aneurism, but in only one of these was the rupture external. In the case reported, death would probably have occurred from external rupture. Hemorrhage from aortic aneurism is far from being always fatal. Slow oozing and even quite severe repeated hemorrhages, if there are intervals in which to recover from immediate shock, may extend over a considerable time. Osler says that spontaneous cure is not very infrequent in small sacculated aneurisms of the ascending aorta. In many of these cases the disease has been undetected during life, and the obliterated sac found at the post-mortem. Their progress may be checked for a long time by the formation of thrombi, but the process of repair is always incomplete, and it is doubtful if any true aneurism of the arch, large enough to produce symptoms, has ever been healed.

THE SALIVA OF THE BABE AS A FACTOR IN THE PERFECT DIGESTION OF THE MILK IN ARTIFICIAL FEEDING AND THE MEANS BY WHICH IT IS TO BE OBTAINED BY AN ARTIFICIAL NIPPLE.

Dr. W. G. A. Bomville, of Philadelphia, Pa., read this paper and presented a specimen of his improved nipple.

While there has been great advance in bacteriological research and milk has been Pasteurized, yet there has been no advance in the artificial nipple, although more than a thousand different shapes have been made up to the present time.

The case that led to this invention was one in which the breast of the mother had been needlessly sacrificed before marriage, and as the breasts had never functioned there was no milk in the remaining organ. This necessitated artificial feeding of the infant. Various foods and preparations were tried, but nothing was found which nourished the child, who was fast approaching starvation. The speaker used the most approved nursing bottles on the market, and commenced experimenting on himself in an attempt to study the philosophy of natural nursing in order to get the mechanical action of the jaws and to see how much should be drawn from a bottle in a given number of minutes. The importance of sucking soon became evident. In watching the baby take the common nipple it was observed that it did no sucking, but would get the long rubber nipple under its tongue and squeeze the milk out without effort. The milk either passed into the mouth too rapidly, as the hole in the nipple was of too large a calibre, or else the nipple collapsed. The ordinary nipple has three defects: it is too long, it collapses too easily and the hole is of too large a calibre. These things are all unnatural and wrong. The speaker then invented a secondary nipple to be placed inside the first. To insure a given amount of milk a hole was drilled into the inner nipple, then it made no difference how large the hole in the outer nipple was. The outer nipple was shortened until it was the length of the mother's. The result was that the buccinator muscles had to be exerted in order to produce a suction of air from the mouth, which caused an influx into the mouth of saliva which never came in any perceptible quantity when the old style of nipple was used. By this combination the flow of milk into the mouth was controlled and the babe was forced to muscular activity of the jaws causing a flow of saliva, and it took about twenty minutes to get four ounces of milk. Nature will not permit any animal that has to suck for its sustenance to live unless it makes the forcible effort to get its milk. This provision of nature is wonderful and beneficent.

The special case referred to did well after the use of this appliance was adopted, and many other lives have been saved by its use.

The speaker made some comparisons between the saliva of the infant and the adult. In his opinion the idea that infants had no saliva at birth was incorrect. He pointed out the fact that the condition of the saliva was an important diagnostic factor in determining much that was wrong with the human system.

SOME CONSIDERATIONS OF UREMIA AND ITS TREATMENT.

Dr. E. W. Mitchell, of Cincinnati, O., read a paper with this title.

Officers appointed for the ensuing year: Chairman, Frank Billings, of Chicago, Ill.; Secretary, Carroll E. Edson, of Denver, Col.

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AMERICAN GYNECOLOGICAL SOCIETY.

Twenty-Third Annual Meeting, Boston, May 24–26, 1898.

(Concluded from No. 5, p. 119.)

Dr. Matthew D. Mann, of Buffalo, N. Y., read a paper entitled

THE SURGICAL TREATMENT OF IRREDUCIBLE RETROFLEXION OF THE GRAVID UTERUS.

In those cases in which the most improved methods, including the use of anesthesia, have failed to replace the uterus, it was advised that the abdomen be opened and the fundus pulled up by the hand introduced behind it. The following case was reported: The patient was thirty-five years of age and had given birth to several children and a number of miscarriages. When she presented herself she stated that she had not menstruated for four months, during which time she had felt very badly, having suffered great pain in the pelvis with inability to empty the rectum and bladder. Examination showed the pelvis filled by what was apparently a thin-walled fluctuating cyst situated behind the uterus and firmly fixed. The cervix was crowded forward against the symphysis, but the position of the body of the uterus could not be determined. The diagnosis lay between retroflexion of the gravid uterus or a cyst behind the uterus. All efforts to push the mass up out of the pelvis having failed, it was determined to open the abdomen. This being done showed that the tumor was the retroflexed uterus. With considerable difficulty the hand was introduced behind it and the fundus lifted up. The abdomen was then closed and the patient made an uninterrupted recovery and went on to full term. Two additional cases in which the same method had been employed were referred to by the author.

Dr. J. Whitridge Williams, of Baltimore, then read a paper on

BACTERIA OF THE VAGINA AND THEIR PRACTICAL SIGNIFICANCE, BASED UPON THE EXAMINATION OF THE VAGINAL SECRETION OF ONE HUNDRED PREGNANT WOMEN.

In explaining the varying results obtained by different investigators, the author considered this fact due to faulty technique in obtaining the secretion for examination. The utmost care is necessary not to carry germs into the uterus from without and in his observations the most rigid precautions were carried out to prevent this. The external genitals were first thoroughly scrubbed and disinfected; then, with the labia held apart by the fingers of one hand to prevent contact with the instruments, a sterile-glass tube was introduced into the vagina and the secretion sucked up into it by means of a syringe attached to one end. The glass tube was then sealed at both ends in order to protect it from outside contamination until the time of examination arrived. As a result of the investigations made the following conclusions were drawn:

(1) That, as found by Kronig, the vaginal secretion does not contain pyogenic streptococci or staphylococci aureus; therefore ante-partum douches are unnecessary.

(2) That the discrepancy in the findings of different investigators is to be found in the technique of obtaining the secretion.

(3) That as the vagina does not contain pyogenic streptococci or staphylococci aureus, auto-infection is impossible; if these germs are found in the vagina during the puerperium, they have been introduced from without.

(4) That if the vagina contained streptococci, as frequently stated by Walthard, Valile and Kottman, vaginal examination with the sterile finger would be very dangerous, which is not the case.

(5) It is possible that in rare instances the vagina contains bacteria which may give rise to sapremia and putrefactive endometritis which are usually mild and do not lead to death.

(6) That death from puerperal infection is due to infection from without and is usually caused by the neglect of antiseptic precautions on the part of the physician, for in all instances save one the bacilli found in the uterus were different from those in the vagina.

PRESIDENT'S ADDRESS.

The first part of the address was devoted to a consideration of the subject of puerperal sepsis, and the latter part to a review of the progress of gynecology during the past year.

Puerperal sepsis was discussed under three heads, namely: (*a*) Sapremia, in which the septic focus remains localized and the microbe, the staphylococcus, does not enter the general circulation; (*b*) Septicemia, in which the septic germ, the streptococcus, finds its way into the general system by invading the blood; and (*c*) pyemia or the variety of septicemia in which deposits of streptococci take place in different and distant portions of the body and there produce decomposition and abscesses. The author does not consider that the attending physician or nurse is necessarily to blame when infection occurs, for he is a believer to a certain extent in atmospheric and auto-infection, and cited a case in which a woman with a felon on one of her fingers had infected herself by introducing it into the vagina, thereby producing an intense puerperal sepsis from which she ultimately died. The importance of prophylaxis was emphasized, stress being laid upon a thorough emptying of the uterus, of placenta, membranes, and coagula, even if it be necessary to introduce the hand for this purpose, and the maintenance of as thorough contraction of the uterus as may be obtained by friction, ice, or the administration of ergot. In cases in which infection has taken place, irrigation of the uterine cavity with a mild antiseptic, after it had been entirely emptied, was recommended. If bichloride of mercury be used for this purpose, the solution should not be stronger than 1–10,000. He is opposed to the use of the curette, which he considers does harm by opening new channels for infection. In cases in which all septic decidua cannot be removed by the hand, an application to the endometrium of a strong solution (25 to 50 per cent.) of chloride of zinc or pure tincture of iodine made through a speculum, followed by irrigation with sterilized water and a uterine pack of iodoform gauze, was advocated. Packing of the uterus with gauze saturated with alcohol, as advised by Carossa, was referred to as sounding plausible but not having been sufficiently employed for its value to be definitely determined. The use of saline laxatives, as recommended some years ago by Seyfert, of Prague, for the purpose of eliminating the poison, was mentioned merely as a matter of historical interest. Serum-therapy in the treatment of puerperal sepsis has been employed by the author in three cases with results which surpassed his expectations.

In regard to the surgical treatment of puerperal sepsis, the evacuation of pus at the most accessible point was recommended. A general purulent peritonitis is to be treated by abdominal or vaginal section, the author favoring the latter route as affording better drainage, or a combination of the two if a thorough flushing of the abdominal cavity be considered necessary. He advocates the expectant method of treating pelvic exudates by means of cold when the temperature permits, with heat and blisters later, until absorption takes place or the exudate undergoes suppuration, in which latter event the abscess should be opened. Early removal of the offending organs was deprecated — still, if the focus of infection in uterus or appendages cannot be reached, hysterectomy is indicated, although he is of the opinion that it is not easy to determine just when such indication exists. He is also in favor of removing the whole uterus with its appendages in Porro's operation when performed when the uterus is already in a septic condition.

In touching upon the topics of interest which have occupied the attention of gynecologists and obstetricians during the past year, the respective merits of abdominal and vaginal section were referred to as being fairly well settled, that is, that it is best to employ the vaginal route when the object is merely to incise, open, and drain abscesses, to remove intraligamentous tumors, cysts of the broad ligament, and effusions of blood between the layers of the broad ligament or in Douglas's pouch when the latter are sealed off from the general pelvic cavity. The question of removing an ectopic gestation sac through the posterior vaginal cul-de-sac, however, is not yet settled, the majority of operators preferring abdominal section on account of the danger of uncontrollable hemorrhage in the former method. As a rule all abdominal tumors should be removed by the abdominal route, although it is possible to remove small ones — and the French surgeons even remove large ones by morcellation — through the vagina.

In the surgical treatment of retrodisplacement of the uterus three methods have been practised with apparently equal success. Alexander's operation has grown in favor. Ventrofixation has not gained in favor, nor has anterior vaginal fixation. The method of the future is probably that of shortening of the round ligaments through an anterior vaginal incision.

The electrical treatment of uterine fibroids has fallen more or less into desuetude, as but little is heard of it.

Conservative surgery of the ovaries is a hopeful subject of the future.

The management of the stump in abdominal hysterectomy is still under discussion, equally good results being claimed by the advocates of total extirpation and preservation of the cervix with its covering of peritoneal flaps. The latter method is preferred by the author.

Vaginal hysterectomy, partly by ligature and partly by clamps, is still employed. In suitable cases Byrne's method of galvano-cautery offers the best chance for permanent cure.

The artificial determination of sex as advanced by Professor Schenck, of Vienna, is rather premature and has not yet attained a position in science.

The tendency of the general surgeon to encroach upon the field of gynecology was also mentioned and was attributed to the fact that his fitness permits him to attempt any and all surgical operations. It was advised that the younger men be trained in general surgery in order that they be competent to perform any operation.

In closing, the President referred to the loss which the Society had sustained during the past year by the death of several of the members: Drs. Lusk, Kollock, Parvin, Wilson, Braxton Hicks, and Tarnier.

Dr. E. W. Cushing, of Boston, read a paper entitled

CHOICE OF METHODS IN HYSTERECTOMY.

The various methods of performing hysterectomy were considered, namely: (1) *Suprapubic*, extraperitoneal, infra-peritoneal, cervix cauterized and drained, cervix closed without drainage, cervix closed without cautery; (2) *Total Extirpation*, abdominal, vagina open (peritoneum open or closed), vagina closed; (3) *Combined Operation* by vaginal and abdominal incision (methods of Doyen, Martin and Richelot); (4) *Vaginal*, clamps, morcellation, ligatures, abdomen drained or closed.

The author said that while the extra-peritoneal method has been abandoned by all operators, it might occasionally be necessary to employ it in an emergency in which it is essential to terminate the operation quickly, as, for instance, in a case of rupture of the uterus.

Chrobak's method of dilating, cauterizing and draining with gauze the cervical canal in treating the stump infra-peritoneally was employed with success in twelve cases by the author in 1892, but he has since abandoned this method as he considers it better to remove the whole cervix. If, however, the cervix is left, cauterization of the canal is unnecessary if the entire uterine cavity has been properly cleansed and disinfected previous to operation. The incisions amputating the uterus should be made oblique in order to leave as little of the cervical tissue as possible. The two flaps are then united, a strip of gauze wet with sublimate solution having previously been drawn down through the cervical canal to remove any secretion which may be there. Total extirpation prolongs the operation ten minutes and carries with it the danger of wounding the ureters. There is also additional danger of infection of the peritoneal cavity from the vagina. Removal of the cervix tends to diminish sexual sensation, and it is therefore desirable to leave it unless some special reason calls for its removal. In malignant disease of any part of the uterus total extirpation should invariably be performed.

When the cervix has been removed, the vagina may either (*a*) be left wide open for drainage; (*b*) the peritoneum may be closed and the vaginal raw surface left open, or (*c*) the vagina and peritoneum may be entirely closed. In the rare cases in which it is considered best to employ the first method the author makes use of a glass drainage-tube, introducing a stitch on either side to close the small lateral vessels. The use of the tube requires care. The second method is obsolete. The method always to be preferred is the closure of the vagina and peritoneum, which leaves no raw surface.

The author does not favor the combined method of operating, which he thinks complicates matters. In all hysterectomies, whether abdominal or vaginal, the rule should be to entirely close the wound unless strong reason for drainage exists.

The methods of Martin and Doyen in doing vaginal hysterectomy were described as rapid and showy in their hands but difficult of performance by those less expert, and were classed as belonging to the transition stage of hysterectomy, being but outgrowths of the combined operation.

The relative value of abdominal and vaginal hysterectomy was discussed at length, the matter of personal equation and training of the operator being considered important factors in the choice. It is the author's opinion that more dexterity and experience are required to perform the vaginal than the abdominal operation. The advantages claimed by the advocates of the vaginal method — less danger of hernia, absence of abdominal cicatrix, less time and less shock — have become relatively less during the past few years by improved technique in abdominal work. The advantages of the abdominal method are founded upon sound surgical principles, that is, greater certainty in diagnosis; greater facility in work by sight; the possibility of recognizing and overcoming unforeseen complications; greater security against wounding intestines and ureters, and better control over hemorrhage.

The use of clamps in vaginal work the author considers crude and barbarous on account of the fouling of the wound and great pain which they cause. The following conditions were given in which the employment of the vaginal operation with clamps is justifiable: (1) Inflammatory conditions in which pus is present in large amount and the weakness of the patient such that an abdominal operation would be fatal, that is, the operation being undertaken for the evacuation of pus, removal of the uterus (if found necessary) being only incidental; (2) When the patient is old or weak or abdominal walls thick, the vagina being roomy, and the uterus freely movable; (3) In cases of cancer of the cervix when conditions make it undesirable to close the opening in the floor of the pelvis and the abdominal operation would be attended by danger of sepsis.

Except under such rather exceptional circumstances, if vaginal hysterectomy is to have any standing in the present state of surgery, it must be as a very finished procedure of a very finished operator, and it must have a technique which will compare favorably with the abdominal operation.

AFTERNOON SESSION.

Dr. **Howard A. Kelly**, of Baltimore, read a paper on

THE TREATMENT OF MYOMATOUS UTERI.

Myomectomy was advocated in all cases in which the patient is of the childbearing age, and the author's method of performing this operation was described.

Dr. **Seth C. Gordon**, of Portland, Me., read a paper entitled

SUTURE AND LIGATURE MATERIAL — ABSORBABLE OR NON-ABSORBABLE.

This is a question which is still unsettled, the most radical differences of opinion being held by men equally experienced. Sims revolutionized the practice of gynecological surgery by the introduction of silver wire in vaginal operations; Emmet has continued its use up to the present day. It is extensively used by Halsted for the reason that it not only permits of absolute sterilization but is itself a germicide. With these exceptions, few operators use silver wire or any other metallic suture at the present day, although in the opinion of the author its aseptic quality entitles it to preference over nearly all kinds of non-absorbable material. In this respect, silkworm-gut more nearly approaches it than anything else.

Silk is more generally used than any other non-absorbable material, and is classed by some surgeons as absorbable, which, however, is not the case. Halsted, who uses no absorbable suture material, would prefer it could he be sure that it is free from germs. It is probable that all surgeons would prefer this provided (1) that it would not be absorbed until it had accomplished the object for which it was used, that is, to retain the parts in apposition until complete union has taken place or, in ligation of a vessel, until it is safe from hemorrhage; (2) that the material is absolutely aseptic at the time of use and will remain so until it is absorbed.

Catgut and kangaroo tendon are the absorbable materials used for sutures and ligatures, the latter having been introduced and employed for many years by Dr. Marcy, of Boston, who reports most favorably in regard to it. The author's experience with this material is limited. The chief objections to it are that it comes in short lengths, which precludes its being used in the over-and-over stitch, and the possibility of its remaining unabsorbed too long and producing fistulous openings. Catgut is used very extensively, and its merits are that it rarely fails of absorption, and is elastic; its objections are the extreme difficulty of rendering it absolutely sterile and the fact that when made strictly aseptic its fibre is impaired to a great degree; also that it is absorbed too quickly. Halsted, who never uses catgut, makes the statement that he has never examined a specimen of catgut which was free from pathogenic germs.

With the exception of silkworm-gut for closing the abdominal incision, the author has used no non-absorbable suture material since 1884. He makes use of catgut exclusively. In hysterectomy he employs this in an over-and-over suture and all ligatures used in the pelvic cavity are carried through tissue with a needle and tied afterward in order to prevent slipping. He has also employed catgut in operations upon cleft palate — a very severe test — with most excellent results. He has not yet employed it in vesico-vaginal fistula, because the opportunity has not presented, but intends to do so when occasion offers.

The following are his conclusions:

(1) All suture material unabsorbed must necessarily have more or less exudate about it.

(2) Such exudate is of lower vitality than normal repair where tissues are just approximated and not strangulated.

(3) That a few days only are necessary to ensure repair if there be no infection, and, therefore, in cases where no great amount of strain exists, absorbable sutures only are needed.

(4) Where continued strain on the parts is inevitable, non-absorbable sutures should be used for at least two weeks but should be so placed as to be removed.

(5) For such sutures the silkworm-gut seems to be the best, as it can be made sterile and kept so.

(6) For all other purposes catgut is sufficient.

(7) That inflammation is always destructive to complete repair.

(8) The sterile catgut or kangaroo tendon should therefore fulfil all indications for suture or ligature material with the exceptions named.

Dr. A. Palmer Dudley, of New York, read a paper, entitled

CONSERVATIVE OPERATIONS UPON THE UTERINE APPENDAGES.

As a supplement to a report of eighty-eight cases in which conservative treatment was employed, made before the New York State Medical Association in October, 1897, the author reported two additional cases in which this treatment was employed in cases of gonorrheal infection with the most gratifying results.

Dr. A. J. C. Skene, of Brooklyn, N. Y., then gave a demonstration of the method of employing his electric hemostatic forceps, which he now uses to the conclusion of all ligatures. Large hysterectomy clamps and small artery forceps were shown. Necessarily, dead tissue was employed in the demonstration, but the action of the electric current in dessicating but not cauterizing the artery was very apparent.

THIRD DAY. — MORNING SESSION.

Dr. J. Wesley Bovee, of Washington, read a paper entitled

THE PATENCY OF THE STUMP AFTER SALPINGECTOMY.

The failure to close the canal of the Fallopian tube stump, or its subsequent restoration after salpingectomy, is considered by the author an important factor in causing many of the imperfect cures which result from this operation. The consequences of permeability of the canal of the stump are pregnancy and peritoneal or stump infection. The former is a condition which means eminent danger in some cases and is to be avoided, but by far the most serious danger is that of infection spreading from the uterus to the peritoneum. As a means to prevent these consequences, the author suggests that occlusion of the canal be effected by cutting out the Fallopian tube, with a wedge-shaped piece of the uterus, penetrating deeply into the uterine wall, by two perpendicular incisions about an inch long in front of and behind the tubo-uterine junction, and closing the muscle and peritoneum by suture.

THE SURGICAL TREATMENT OF STERILITY; HOW FAR IS IT JUSTIFIABLE OR EXPEDIENT?

The paper of **Dr. Matthew D. Mann**, of Buffalo, dealt with the surgical treatment of sterility when due to malformations or diseased conditions of the vulva, vagina and uterus. Appropriate operations were recommended for vaginismus, atresia of the vagina and stenosis of the uterine canal.

Dr. W. Gill Wylie, of New York, read a paper on

THE TREATMENT OF STERILITY DUE TO ANTEFLEXION OF THE UTERUS, STENOSIS OF THE UTERINE CANAL AND ENDOMETRITIS.

He advised divulsion of the canal, curettement and the introduction of a curved uterine drainage-tube, this treatment to be repeated if the dysmenorrhea, which usually accompanies these cases, is not relieved. The patient is to be kept in bed during the week following the curettement and introduction of the tube. The latter is then removed. If the treatment is repeated, the patient may be permitted to return to her home and the tube left *in situ* for a month or longer, being cautioned to avoid violent exercise, such as horseback riding and sexual intercourse. The author has employed this method with marvellous success in a number of cases.

Dr. A. F. Currier, of New York, read a paper on

REMOVAL BY ABDOMINAL INCISION OF THE REMAINS OF AN EXTRA-UTERINE FETATION OF FOURTEEN YEARS' DURATION.

The patient was a large, well-developed woman, forty-five years of age, a school teacher, who had one child twenty-seven years of age. After a period of sterility lasting twelve years, she again became pregnant. The usual enlargement of the abdomen took place and there were no unusual symptoms during the pregnancy. She passed the ninth, tenth and eleventh months without any sign of labor until August 2, 1884 (at the end of the eleventh month), when she was suddenly seized with intense pain in the abdomen accompanied by profuse hemorrhage from the uterus. Delivery did not take place and she was confined to her bed until October, at which time she was able to return to her work although still feeling weak. She consulted an eminent gynecologist, who appeared to be puzzled by the abortive attempt at labor, but who advised her not to submit to operation so long as she felt well. The abdominal enlargement gradually diminished and her health remained excellent until June, 1897. In August of that year she strained herself slightly in getting off a street car and in a few days began to suffer intense pain in the abdomen. When first seen by the author, on August 15th, the pain had diminished but she was septic and anemic. There was also a mitral regurgitation murmur. The vaginal vault was indurated, and an abdominal tumor extended into both iliac fossæ and two inches above the umbilicus. A diagnosis of retained fetus or a very large fibroid tumor of the uterus was made. Operation was postponed on account of the patient's weakness until the first of December. During this time two fistulæ formed, one in the rectum, and one in the left ischio-rectal fossa, through which small pieces of bone were discharged. There was a very offensive diarrhea, and one severe hemorrhage from the rectum had occurred. The fistulous tract in the ischio-rectal fossa was first curetted and packed and an abdominal incision made. The intestines were so matted together that separation was impossible and a putrid, offensive fluid filled the lower portion of the abdomen. The fetal mass, encapsulated by a thin layer of new tissue and surrounded by intestines, was at once felt when the hand was introduced. All traces of placenta and membranes had disappeared and nothing remained of the fetus but the bones, disarticulated with the exception of the spinal column and part of the skull. These were removed one by one, the pelvic cavity flushed with hot water and packed with gauze to control the free oozing of blood. Later, the pads were removed and a packing of iodoform gauze substituted. The thin walls of the sac were then stitched with silkworm-gut to the abdominal wound, and the upper and lower angles of the latter closed. The patient stood the operation well. When the dressings were removed, at the end of twenty-four hours, the wound was found to be covered with feces, and when the stitches were removed on the twelfth day it burst open, as might have been expected. The patient recovered from the operation promptly in spite of this, and was greatly improved in health when, in January, 1898, an attempt was made to close the abdominal wound. Closure of the ischio-rectal fistula had already taken place. It had previously been ascertained that the fistula into the rectum was so situated that it was impossible to reach it from below to close it; therefore a large drainage-tube was introduced through the abdominal wound and drawn down into the rectum, its upper end remaining in the abdominal incision, before the latter, which was between eight and ten inches long, was closed about it with silver wire sutures after the granulation tissue had been scraped away. The drainage-tube was removed at the end of six days, during which time the wound remained clean. The rest of the wound was then curetted and closed. Upon removing the first sutures a few days later it was found that the wound had healed in part of its length. Gas and feces were passed by the rectum, but a little leakage occurred at the abdominal wound, and it became evident that healing by granulation was the only hope. At this time the patient's condition was good; she was able to sit up and had a good appetite. In February she took cold, bronchitis set in, the kidneys failed to act, uncontrollable vomiting set in, and finally, uremia with suppression of urine, and death took place ten weeks from the date of the first operation. No autopsy was obtained.

The author reported the case on account of the remarkable toleration of the foreign body by the patient in spite of the fact that the sac wall was very thin. Such toleration, however, has been noted before. As long ago as 1679 a case of extra-uterine gestation, in which the products of conception were retained during a period of twenty-five years, was reported by Blizny, of Paris. In 1767, Nebel, of Heidelburg, reported a case in which fetal bones had been retained for fifty years in a woman's abdomen.

Dr. M. D. Mann: In looking up the literature of this subject, the author need not have gone so far back. If he had looked in the "Transactions" of this Society be would have found that the late Dr. Lusk, of New York, two years ago reported two cases in which the fetus had been retained ten and thirteen years respectively, and showed one of the specimens. I myself have operated upon a case in which the fetus was carried for eight years. In this case the pregnancy was not abdominal, as the fetus was found in the horn of an undeveloped uterus.

Dr. Hunter Robb, of Cleveland, read a paper on

ENDOTHELIOMA LYMPHANGIOMATODES OF THE CERVIX UTERI.

A case of this kind was reported, the diagnosis being made by careful microscopical examination. The clinical appearance of the cervix was that of malignant disease in an inoperable stage.

Dr. Eugene Boise, of Grand Rapids, Mich., read a paper entitled

POST-OPERATIVE SALINE INFUSIONS.

The author advocated the employment of saline infusion by the intra-venous method after operation in cases in which the patient is suffering from shock and loss of blood, and also in cases of sepsis, uremia and intestinal obstruction.

Dr. Henry D. Fry, of Washington, then read a paper on

STREPTOCOCCIC INFECTION IN CHILDBIRTH AND THE APPLICATION OF SERUM-THERAPY.

The author is strongly in favor of this method of treatment and gave the results of its use in a number of cases to justify his position. The paper elicited so much discussion *pro* and *con* the use of antistreptococcic serum in puerperal and non-puerperal sepsis, that, upon motion of Dr. W. K. Pryor, of New York, a committee consisting of Drs. Fry, Williams, Reynolds and Pryor was appointed by the President to investigate this method of treatment and report at the next meeting of the Society.

Before the final adjournment, Dr. Paul F. Mundé, the retiring president, introduced his successor, Dr. Joseph Taber Johnson, of Washington, and announced that the next annual meeting of the Society will be held in Philadelphia, during the fourth week in May, 1899.

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Recent Literature.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In Twenty Volumes. Vol. XIV, "Infectious Diseases." New York: William Wood & Co. 1898.

This volume of the "Twentieth Century Practice" contains about 600 pp., and is a continuation of the general subject commenced in Volume XIII — "Infectious Diseases."

The diseases treated of in this volume are: scarlet fever, measles, German measles, chicken-pox, glandular fever, whooping-cough, cholera infantum, cholera nostras, Asiatic cholera, dengue, beri-beri, miliary fever, Malta fever.

Of the contributors, five are of the United States — Drs. Dillon Brown, Forchheimer, Jacobi, Norton and O'Dwyer; two are of London — Sir Joseph Fayrer and Dr. Dawson Williams; one, Dr. Netter, of Paris; one, Dr. Rumpf, of Hamburg; one, Dr. Sodré, of Rio de Janeiro; one, Dr. Bruce, of South Africa. The international character of the encyclopedia is emphasized, and the general standard well sustained in the different articles.

Fat and Blood. An Essay on the Treatment of Certain Forms of Neurasthenia and Hysteria. By S. Weir Mitchell, M.D., LL.D. Seventh edition, 800 pp. 177. Philadelphia: J. B. Lippincott Company. 1898.

This work is so well known, since its publication over twenty years ago, as the first complete presentation of the "rest cure," that little need be said of this new edition except that the chapter on Massage has been wholly re-written in order to note some of the latest studies of its effects, and that various minor changes have been made in other chapters.

Annual Report of the Medical Examiner-in-Chief of the Royal Arcanum. For the year ending December 31, 1897. By Sanford Hanscom, M.D. East Somerville. 1898.

As a general rule very little information can be gathered from the proceedings of the various assessment insurance organizations, fraternal or otherwise, which have sprung up and flourished throughout the land in the past quarter of a century. It is, therefore, with much satisfaction that we turn to this report of Dr. Hanscom as one of more than ordinary interest.

It appears that the death-rate of the Royal Arcanum, per thousand members, in an average membership of about 190,000 distributed in 41 states and provinces, was 9.43, or a little less than that of the previous year.

The order was unusually fortunate during the year in losing only 61 members, who died within one year after admission, out of a total mortality of 1,808, or 3.3 per cent. Of these, 12 died of pneumonia, 10 of accident, 7 of kidney disease, 5 of typhoid fever and 4 of consumption.

Special prominence has been given in this report to the subjects of suicide and consumption, two topics which engage the attention of every life-insurance organization, since a very considerable portion of the loss of every company results from these two causes. The subject of suicide is treated very fully and statistics presented relative to locality, duration of membership, domestic and social condition, occupation and age at death.

The mortality from consumption in this organization appears to have been only 13.1 per cent. of its total mortality in a period of twenty-one years, which is considerably less than the average of insurance organizations.

The death-rate at each age-period of life is also much less than that of the State of Massachusetts for similar ages, a result which is due to the careful weeding-out process, which is a consequence of good medical supervision.

THE BOSTON

Medical and Surgical Journal.

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THE MEDICAL DEPARTMENT OF THE ARMY.

In the light of the criticism to which the medical department of the army is at present being subjected, on account of the suffering which many of our wounded and sick soldiers have endured about Santiago, and while returning on the transports, a brief review of the facts of the case is demanded. The responsibility for unnecessary suffering, sickness and death among our soldiers is so grave a one that no mere criticism will suffice to allay the just resentment of the country, and it is both unfair and unjust to place the responsibility where it does not belong.

To go back to the beginning, we must remember that in the face of the recognized fact that climatic and geographical conditions made it evident that a summer campaign in Cuba must result in a large mortality among our unacclimated troops from malaria and contagious disease, our army authorities have undertaken such a campaign, and pushed it to a brilliant and successful termination. The invasion of Cuba and assault upon Santiago were undertaken in spite of the prophecies of foreign military authorities that the landing of so large a body of troops and mobilization for effective work were impossible at the time they were undertaken. If the army authorities found it necessary to land their forces in Cuba and march them over the almost impassable roads to Santiago in such haste that it was impossible to supply even adequate rations to the soldiers in the trenches, can the blame be laid upon the medical department?

If, as is known to be the fact, General Shafter's army at Tampa was completely equipped with medical supplies, can the medical department be blamed because the commanding general left behind at Tampa his reserve medical supplies and ambulance corps?

The hospital ship *Relief*, loaded with medical supplies, arrived four days after the fight at El Caney, her late arrival being due to no fault of the medical department, but to the unavoidable delays attendant upon securing and equipping such a ship.

With regard to the actual work performed in the field by the army surgeons, we have abundant testimony, including that of Dr. Senn, chief of the operating staff, to the fact that the surgeons showed most absolute devotion to duty and enormous capacity for work, and that they were provided in the field hospitals with the necessary dressings, instruments, stimulants, anesthetics and other facilities for their work.

The sufferings of the wounded from lack of clothing, tents, beds and blankets began after the surgeons were through with them, and it would seem to the unprejudiced mind that if the blame is to rest anywhere it should be upon the quartermaster and commissary departments.

The fact that the transports *Seneca*, *Alamo* and *Concho* were not provided with food, water or medical supplies, and were overcrowded, cannot be ascribed with any fairness to the medical department, which, as we believe, has been performing its work with the utmost energy and efficiency, considering the conditions with which it has been confronted. A few convalescents only were sent home on the *Seneca* to avoid overtaxing the *Relief* by the expected attack on Santiago.

It is easy for the members of the Red Cross Society, whose excellent aims have been perhaps, in some instances, defeated by the fact that the medical department, whose own ambulances and supplies had been left behind at Tampa, was unable to furnish its doctors and nurses transportation to the front, to criticise the medical department. A good deal of criticism may have perhaps resulted from the position taken by General Sternberg with regard to sending women nurses into the field with the army, where, as he has rightly said, they could not but be an incumbrance, for reasons which easily suggest themselves to the practical mind.

At the general hospitals he is undoubtedly glad of their services, and he has himself complimented the efficiency of about 100 who are on duty in the hospitals near Santiago.

Dr. Sternberg has as much right to call attention to the fact that many of the so-called nurses sent to the front by the Red Cross Association had had no special training for such duties, as the Red Cross Society has to find fault that he prefers to administer the duties of his office in his own way rather than in theirs.

When we consider the enormous disadvantages and difficulties under which the medical department of an army is always obliged to perform its duties, in time of war, and when we consider the manner in which the quartermaster and commissary departments, and the transportation departments have been managed by appointees who owe their "military" position to political reasons rather than fitness or training, we have reason to be thankful that the medical department does not come under the same head. The contract surgeons, which it has been necessary to enlist in order to help in the emergency, have at least had suitable training for their work, but unfortunately not as much can be said for too many of the staff officers, upon whose knowledge and faithfulness the health and life of our soldiers depend.

Until the medical department is made completely independent of other departments in matters of transportation, commissariat and equipment it will continue to be unjustly blamed for the results of conditions beyond its control.

The report of Captain Munson to the Surgeon-General, dated July 29th, gives an adequate idea of the great difficulties to be overcome in a campaign carried on with energy under conditions of extraordinary difficulty.

This report, without actually making suggestions, indicates the great obstacles to the efficient working of the surgical department, owing to its subordination to other departments and the necessity of a more independent organization. The lessons learned at Santiago will undoubtedly contribute valuable information for the more efficient working of the medical department of the army in the future. It must not be forgotten, however, and it is well to emphasize this point in view of the crude criticisms which are visiting this department in common with many others, not even sparing the heroes of this war, that this campaign will go down into history as a brilliant example of the extraordinary capacity of the American army and navy to conduct a successful campaign under circumstances which at the outset were deemed by military experts, not only of this but of most first-class powers, to be prohibitory.

In a military expedition of this magnitude conducted in a fever-stricken country in the midst of summer, to contend with one of the most virulent forms of epidemic fevers, to transport the sick and wounded back to this country with the surprisingly small mortality which thus far has occurred, is a feat of which the medical staff of any army in the world ought to be proud.

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THE SAILING OF THE "BAY STATE."

The hospital ship *Bay State*, fitted out by the generosity of the people of Massachusetts, through the work of the Massachusetts Volunteer Aid Association, sailed for the seat of war in the West Indies on August 6th.

For a full description of this remarkably well equipped and appointed ship we are able to refer our readers to the article on Hospital Ships with which this issue of the Journal begins.

The Volunteer Aid Association is to be congratulated upon the fact that it has succeeded in fitting out at a comparatively moderate cost per fixed berth a hospital ship which possesses in certain details of her equipment new features which are a marked improvement upon any other hospital ships which have so far been sent out on their mission of relief.

Many members of the medical profession of Massachusetts organized into committees under the guidance of the surgeon-superintendent, Dr. Burrell, have contributed earnest thought and work to the various parts of the equipment, and it is but fair to say that a great deal of her present perfection is due to the counsel and interest of Dr. Siegfried, who has from the first given the benefit of his advice and experience to those in charge of her equipment.

The arrangement of the berths, so that the frames with mattress and bed can be lifted off and carried ashore without disturbing the patient, is a feature new to this ship. Every other practicable appliance which the knowledge and ingenuity of men trained in the care of the sick could suggest has been added to her equipment.

The ventilation, bathing facilities and sanitary arrangements are of the best types yet devised, and the ventilating system is aided by numerous electric fans provided by the generosity of certain members of the Aid Association.

The ship is abundantly provided with supplies and operating facilities, and carries an able and enthusiastic staff of surgeons and nurses. There is every reason to predict that the earnest and effective work of the Association and the charity of those who have contributed to the fund will be rewarded by excellent achievements on her part in the care of the wounded and sick soldiers with whose transportation she will be charged.

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THE SO-CALLED IMMUNES.

If sundry reports are to be trusted, it would appear that the immunity from yellow fever which some of our regiments are said to possess by no means corresponds with the facts. It is altogether probable that the eagerness to enlist and be sent quickly into active service has led in many instances to a claim of immunity which actually does not exist. Evidently the determination of immunity is a matter for expert decision, and it is not likely that in the hurry and rush of recruiting much expert opinion was attainable or eagerly sought. The patriotism behind the deception, if such it prove to be, will no doubt do much to mitigate public feeling, but those who are responsible in the matter should certainly be held to a strict account.

With the much stricter quarantine precautions, which under the new régime will be taken at Santiago, there is much room to hope that yellow fever may be kept well in hand during the remainder of the summer and fall, so that, whether "immune" or not, the danger from that source may not be so great as anticipated.

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MEDICAL NOTES.

Nurses in the Field. — Surgeon-General Sternberg does not approve of female nurses with troops in the field. He is reported to have sent the forthcoming dispatch to the surgeon of one of the army camps stationed at Jacksonville:

"In reply to your letter of July 22, I have to inform you that I do not approve of having female nurses with troops in the field or in camps of instruction. But in general hospitals or in permanent camps, where facilities exist for taking care of them, they may render valuable assistance, and I approve of the employment of properly trained female nurses under such circumstances."

A Hydropathic Institute will shortly be added to the University of Berlin. It will be similar to those already established at the Universities of Vienna, Heidelberg and Würzburg.

Sickness at Santiago. — It is said that the epidemic of sickness which has visited the troops about Santiago reached its height a few days ago and is now gradually dying away. The number of new cases is distinctly diminishing each day, and the deaths are relatively few.

New Laboratories for the Johns Hopkins Medical School. — It is expected that the new laboratory building of the Johns Hopkins University Medical School, adjacent to the hospital, will be ready for occupation in the autumn. It will accommodate the laboratories of physiology, of physiological chemistry and of pharmacology.

Casualties of the War. — As has been stated, there have been shorter wars, but it is doubtful if there has been one in which the loss of life has been less considering the length of hostilities. Statistics show that 266 Americans have been killed in battle, with 1,400 wounded, while the Spaniards have lost 2,000 killed and 2,630 wounded.

A Complimentary Dinner to Two Denver Physicians. — The physicians of Colorado tendered a complimentary dinner to Drs. J. W. Graham and W. A. Jayne, respectively Chairman and Secretary of the local Committee of Arrangements of the late meeting of the American Medical Association, at the University Club, Denver, on the evening of Tuesday, July 26, 1898.

An Exhibit of the History of Medicine. — In connection with the Congress of German Men of Science and Physicians to be held at Düsseldorf from September 19 to 24th there will be several exhibits, one of scientific apparatus, one of scientific photography and one illustrating the history of medicine and science. According to the *British Medical Journal* the last exhibit will be particularly elaborate and will aim to give a graphic idea of the progress of medicine from the earliest times down to our own day.

The Conditions on the Transport "Concho." — The condition of the transport *Concho*, with sick and wounded soldiers from Santiago, which arrived in New York harbor on August 1st, seems to have been very similar to that of the *Seneca*, a fortnight before. Dr. A. Monae Lesser, chief surgeon of the Red Cross Society, who had himself been ill in Cuba, was the medical officer in charge, and he describes the state of affairs on board as disgraceful. "The trip north," he states, "was a frightful one. There were bunks for 58 on the *Concho*, but more than 190 men were put on board. There was no fresh water and no ice. These men needed good, delicate food, and the only food on board was such as to turn the stomachs even of strong men." The only water on the ship had been for weeks in the casks, and there was a very inadequate supply of bedding and medical stores. During the voyage there were six deaths, and it seems reasonable to suppose that had proper provisions been made for the invalids some of these lives, at least, might have been saved.

The "Relief" Sails for Porto Rico. — On August 3d, the U. S. Hospital Ship *Relief* sailed with a full supply of medical stores for General Miles's army in Porto Rico. Surgeon-Major Torney is in charge, and in addition to the regular staff of the vessel she carried Dr. Karl Rudberg, who rendered valuable assistance to the Americans wounded at Santiago, and Surgeon-General Terry, of the National Guard of the State of New York, who is going to look after the condition of the New York troops.

The Camp at Montauk Point. — Montauk Point, at the eastern extremity of Long Island, which has been selected as the site of the camp for the recuperation of the exhausted soldiers from Cuba and Florida, is an ideal location for a summer camp, and the most energetic preparations are being made for the reception of the troops. Combined with the advantage of the most invigorating air, it is easy of access and presents the most ample facilities for salt water bathing and other healthful recreations. Col. Wm. H. Forwood, the chief surgeon of the Soldiers' Home in Washington, who is to be in charge of the medical department of the great camp, is already on the ground supervising the construction of a hospital.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 10, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 13, scarlet fever 16, measles 22, typhoid fever 8.

NEW YORK.

New York Gives a Convalescent Home to the War Department. — President Clausen, of the Park Department, a few days ago offered, on behalf of the city, to the War Department at Washington the West End Hotel building at Fort Washington, as a health-resort for convalescent soldiers. The offer has now been accepted, and a number of wealthy gentlemen have agreed to fully equip it for the purpose. It is a large brick building, surrounded with spacious piazzas, and admirably adapted for the purpose. It is situated on the banks of the Hudson at the lower end of Fort Washington Park, a beautiful and picturesque tract of forty-one acres acquired by the city last year, which includes the historic Fort Washington Point of Revolutionary memory.

Death of Dr. A. Irving Sternberg. — Dr. A. Irving Sternberg, a cousin of Surgeon-General George M. Sternberg, of the army, died at his residence at Gouverneur, New York, on August 1st. He was fifty-seven years of age, and a native of Seward, N. Y. He had practised successively at Glens Falls, Syracuse and Carthage, and four years ago removed to Gouverneur, where he fitted up a finely appointed laboratory and devoted himself largely to analytical work. A despatch to the *New York Herald* states that Dr. Sternberg's death was due to chlorine and sulphuretted-hydrogen poisoning received while making an analysis of the contents of a horse's stomach.

Death of Dr. Charles S. Ward. — Dr. Charles S. Ward, for many years well known as a prominent gynecologist and general practitioner in New York, died at his home in Bridgeport, Ct., on July 31st, of cerebral hemorrhage. He was born in 1843 and was graduated from Yale College in 1863 and from the College of Physicians and Surgeons, New York, in 1866. He was for a considerable time clinical assistant to Prof. T. Gaillard Thomas at the College of Physicians and Surgeons.

Death of George C. Hubbard. — Dr. George C. Hubbard, Sanitary Superintendent of the Borough of Richmond Health Department, died suddenly at his home in Tottenville, Staten Island, on August 3d, at the age of sixty-seven. He was born in Ohio. He was graduated from the Medical Department of the University of the city of New York in 1859, and then began practice with his father, the late Dr. Eben Hubbard, on Staten Island. In 1862 he was appointed assistant surgeon of the 165th Regiment, New York Volunteers, and in 1864 was made full surgeon. He served in the army until the close of the war.

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Miscellany.

THE SUMMER MORTALITY IN NEW YORK.

Since the week ending July 9th, when the mortality suddenly ran up to a figure representing an annual death-rate of 26.68, notwithstanding the continuance of very hot weather, characterized for the most part by unusual humidity of the atmosphere, there has been a considerable reduction in the number of deaths in the city. In the weeks ending July 16th, 23d and 30th, the death-rate was respectively 21.53, 22.55 and 22.29. For the season of the year it shows a very fair state of the public health, and one which will compare very favorably with that in past summers.

In comparison with the death-rate of the principal cities of Great Britain, however, the showing is not a particularly gratifying one. Thus, the death-rate for the week ending July 16th in the thirty-three greater towns of England and Wales, as reported in the Journal, was only 14.7, that of London with its enormous population being actually lower than the average, 14.1. There is this to be said, though, that in England, where the tropical heat which we have here in summer is unknown, the summer months are in fact the most healthy of the year, while in this country July and August are among the most unhealthy.

In comparing the death-rate in the different boroughs of New York during the three weeks named one is forcibly struck with the fact that Manhattan Borough, with its crowded tenement-house population, presents the most favorable showing of all the five boroughs, its death-rate being decidedly below the average. Thus the average for the three weeks in the entire city is 22.14, while the average for Manhattan is 20.87. Next in smallness of the mortality comes Brooklyn, where the conditions are more nearly similar to those existing in Manhattan than any of the other boroughs, while in the more sparsely populated districts of Queens and Richmond (Staten Island) the mortality is much greater. In the week ending July 30th, the death-rate in Manhattan was 20.85 and in Brooklyn 21.88, while in Richmond it was 32.15 and in Queens 32.19. The mortality in the last-named borough was even greater than in the Borough of the Bronx (whose death-rate was 31.97), which the reports of the Health Department always mark with a foot-note stating that the many large institutions located there raise the death-rate. The weeks ending July 16th and 23d show an exceptionally large number of deaths from tetanus, there having been four in each of these weeks.

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ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

The success of an annual meeting of the British Medical Association may be judged by several standards: by the character of the addresses delivered to the general meetings, by the spirit with which the discussions are maintained in the sections, and by the number of members registered as in attendance on the meeting. In no one of these respects need the Edinburgh meeting fear comparison with its predecessors. The address of Sir Grainger Stewart, on "The Reciprocal Duties of our Profession to the Community and of the Community to the Profession," was a masterly exposition from one of the leaders of medicine in this country, characterized by broad views, keen insight, and a just appreciation of the place which medicine ought to take in our complicated social system. The Address in Medicine, by Professor Fraser, was appropriately directed to the discussion of one of the most pressing questions which are occupying the minds alike of the pathologist and the clinical physician, namely, "The Toxic Origin of Disease." Professor Annandale in his Address in Surgery showed that he knew well how to commingle a serious view of the obligations of the profession to the public with that appeal to the sentiment of *esprit de corps* and the affection for an *alma mater* which is so tenderly regarded by all her children. The discussions in the sections, so far as they have gone at the time of writing, have been remarkable in many respects, not least, perhaps, for the distinction of those who have introduced the main subjects of debate. We give elsewhere a short sketch of the more important of these, and it will be seen that they cover a large proportion of the more important questions which are at present forcing themselves upon the attention of the profession. Lastly, in the matter of numbers, which in itself has an important bearing upon the success of the discussions in the sections, the meeting in Edinburgh may also be said to mark an epoch. So soon as it was announced that the British Medical Association was to hold its annual meeting in Edinburgh it was anticipated that the numbers attending would be large, but the number of members who have actually availed themselves of the invitation is in excess of the most sanguine anticipations. On the first day on which the reception-room was open it was crowded, and the total number registered was very large. At the time of writing, the returns are not complete, but already the total exceeds 1,834. This large influx of members, in many cases accompanied by members of their families, has put a severe strain upon the organization, but is has well responded to the call, and the work of registration has proceeded without a hitch. — *British Medical Journal.*

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SUICIDE IN CHILDREN.

Among many interesting statistics which Ireland has collected in his recent book on "The Mental Affections of Children" are certain facts regarding suicide. He writes (page 286), "As might be expected, self-destruction is less frequent in childhood than at any other age. The commonest period is from forty to fifty years. Females are less prone to self-destruction than males, but this is less marked in childhood than at a later age. In France the proportion of female to male suicides under sixteen years of age in the whole population is less by one half; but taking 1,000 male and 1,000 female suicides under sixteen, the proportion is greater with females by one-third. . . . It is now increasing in frequency. From 1865 to 1874 in England, Wynn Westcott tells us there were 81 suicides from ten to fourteen years of age, 45 male and 36 female. The ratio, however, shows female precocity. Child suicide is increasing in England and in almost all the continental states. But what undoubtedly causes many cases now is over-pressure in education, while the education itself produces precocious development of the reflective faculties, of vanity and of the desires. During the last few years there have been several English cases of children killing themselves because unable to perform school tasks."

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AN EXAMPLE OF COOLNESS.

The following, if true, is an excellent example of the absolute coolness of our naval officers in time of extreme danger. The details we had not before heard. Speaking of the part played by the *Boston* in the Manila sea-fight, one of the gunners of that vessel says: "The shot that had disturbed us below nearly ended Captain Wildes's life. He was on the bridge with sun-helmet, palm-leaf fan and cigar when the shot hit the foremast three feet over his head, passed from starboard to port, cutting a shroud in the fore-rigging and burst ten feet from the side, the recoil sending the base-plug back on deck. The captain watched the shell's progress intently, then resumed his smoking. Of all the officers on the bridge he was the only one who did not dodge. He simply said, 'We were lucky, gentlemen.'"

METEOROLOGICAL RECORD

For the week ending July 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...24	30.17	70	76	63	88	90	89	S.	S.E.	12	5	R.	F.	
M..25	30.09	70	75	64	88	86	87	S.	S.	4	10	O.	O.	
T...26	29.99	74	81	66	88	95	92	W.	S.E.	10	5	O.	R.	.29
W..27	29.96	70	74	65	96	100	98	N.	E.	2	5	O.	G.	.01
T...28	29.92	68	69	66	99	98	98	E.	E.	4	3	R.	O.	.33
F...29	29.86	78	89	67	87	86	86	W.	S.W.	6	12	O.	C.	
S...30	29.88	83	92	74	85	83	84	W.	S.W.	6	3	C.	O.	.1†
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, July 30, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Whooping-cough.	Diphtheria and croup.
New York	3,438,899	1469	747	34.02	10.99	25.62	2.24	1.26
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	—	—	—	—	—	—	—
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	206	101	27.44	5.39	20 09	—	3.33
Boston	517,732	208	93	19.20	12.96	13.92	.96	1.44
Cincinnati	405,000	94	—	14.84	12.72	11.66	1.06	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	103	52	33.33	9.80	31.36	.98	.98
Washington	277,000	120	47	22.95	14.45	13.60	—	3.40
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	61	27	27.88	13.12	24.60	—	—
Worcester	105,050	45	23	28 86	11.11	26.64	2.22	—
Fall River	95,919	—	—	—	—	—	—	—
Nashville	87,754	32	10	18.78	15.65	15.65	—	—
Lowell	87,193	55	28	36.36	9.10	30.94	1.82	—
Cambridge	86,812	33	21	60.60	12.12	57.57	—	3.03
Lynn	65,220	33	20	27.27	—	18.18	3.03	—
Charleston	65,165	—	—	—	—	—	—	—
New Bedford	62,416	20	13	45.00	5.00	45.00	—	—
Somerville	57,977	—	—	—	—	—	—	—
Lawrence	55,510	40	31	62.50	5.00	60.00	—	—
Springfield	54,790	16	6	37.50	18.75	31.25	6.25	—
Holyoke	42,364	24	15	41.58	20.79	37.35	—	—
Salem	36,062	—	—	—	—	—	—	—
Brockton	35,853	—	—	—	—	—	—	—
Malden	32,891	12	5	25.00	41.65	8.33	8.33	—
Chelsea	32,716	22	—	8.30	4.15	8.30	—	—
Haverhill	31,406	7	3	14.21	14.21	14 21	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	16	8	6.25	6.25	6.25	—	—
Taunton	27,812	13	5	15.38	15.38	15.38	—	—
Quincy	22,562	8	3	25.00	37.50	25.00	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	4	1	25 00	—	25.00	—	—
Everett	21,575	4	1	—		—	—	—
North Adams	19,135	4	1	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Chicopee	17,368	7	1	—	42.63	—	—	—
Brookline	16,164	2	0	—	50.00	—	—	—
Medford	15,832	13	12	61.52	7.69	61.52	—	—

Deaths reported 1,672: under five years of age 1,274; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 766, consumption 286, acute lung diseases 134, diarrheal diseases 618, whooping-cough 41, diphtheria and croup 34, typhoid fever 26, scarlet fever 17, cerebro-spinal meningitis 15, measles 11, erysipelas 4.

From typhoid fever New York 8, Baltimore and Washington 5 each, Cincinnati 2, Boston, Providence, Nashville, Lawrence, Holyoke and Malden 1 each. From scarlet fever New York 15, Boston and Lowell 2 each. From cerebro-spinal meningitis New York 7, Boston and Lynn 2 each, Baltimore, Washington, Providence and Lowell 1 each. From measles New York 8, Baltimore, Boston and Washington 1 each. From erysipelas New York 2, Baltimore and Boston 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending July 23d, the death-rate was 15.6. Deaths reported 3,356; acute diseases of the respiratory organs (London) 148, diarrhea 220, whooping-cough 93, measles 70, diphtheria 53, fever 26, scarlet fever 25.

The death-rates ranged from 4.6 in Croydon to 23.9 in Salford; Birmingham 17.2, Bradford 14.5, Gateshead 19.6, Hull 10.,9 Leeds 17.5, Liverpool 21.1, Manchester 17.6, Newcastle-on-Tyne 16.8, Nottingham 11.3, Portsmouth 16.2, Sheffield 16.1, Sunderland 17.0, West Ham 12.4.

BOOKS AND PAMPHLETS RECEIVED.

Pulte Medical College, Cincinnati. Twenty-seventh Annual Announcement, 1898–99.

Proceedings of the Tenth Annual Session of the Association of American Anatomists.

The Sanitary Salvage of Our Soldiers in Cuba. By Maj. Chas. H. Hughes. Reprint. 1898.

Gross Medical College, Denver, Col. Circular of Information and Register of Students. Session 1898–99.

New York University. The University and Bellevue Hospital Medical College. Announcements for 1898–99.

Three Cases of Brain Abscess Following Otitis Media. By Arthur H. Coe, M.D., Spokane, Wash. Reprint. 1898.

Report for the Year 1897–98, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Medical Service and Medical Fees; The Business Side of the Practice of Medicine. Progress in Neurology. By Prof. C. H. Hughes, M D., St. Louis. Reprints. 1898.

Der Neueste Angriff Gegen die Heilserumtherapie der Diphtherie. Erläutert von Adolf Baginsky. Sonderabdruck aus der Berliner klin. Wochenschr., 1898, No. 27.

Handbook of Materia Medica for Trained Nurses. By John E. Groff, Ph.G., Apothecary in the Rhode Island Hospital, Providence. Philadelphia: P. Blakiston, Son & Co. 1898.

Thirty-Seventh Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati for the Fiscal Year ending December 31, 1897, John Fehrenbatch, Superintendent. Cincinnati. 1898.

Aberrant Tendinous Cords of the Heart. (From Dissections in the Pathological Laboratory of the Rush Medical College.) By Henry F. Lewis, A.B. (Harv.), M D., Chicago. Reprint. 1898.

The Johns Hopkins Medical School. Established by the Johns Hopkins University in connection with the Johns Hopkins Hospital, Baltimore, Maryland. Sixth Annual Announcement 1898–99.

International Clinics. Vol. II, Eighth Series. 1898. Edited by Judson Daland, M.D., J. Mitchell Bruce, M.D., F.R.C.P., David W. Finlay, M.D., F.R.C.P. Philadelphia: J. P. Lippincott Company. 1898.

Colles's Fracture; with Some New Suggestions in the Treatment. Report of Three Interesting Cases. Report of a Few Cases of Laparotomy. By Carlos C. Booth, M.D., Youngstown, O. Reprints. 1895–1897.

Lectures on Tumors. By John B. Hamilton, M.D., LL.D., Professor of Surgery, Rush Medical College and Chicago Polyclinic; Surgeon to Presbyterian Hospital, etc. Third Edition. Philadelphia: P. Blakiston, Son & Co. 1898.

Report on the Sanitary Condition of the County Borough of Birkenhead, for the year 1897. By R. Sydney Marsden, Medical Officer of Health, Medical Officer to the School Board, and President of the Medical Society, Birkenhead. 1898.

Remarks at the Presentation of the Candidates for the Degree of Doctor of Medicine at the Commencement of the Johns Hopkins University, June 14, 1898. By William H. Welch, M.D., Dean of the Medical Faculty. Reprint. 1898.

Cataract Operations; Mule's Operation Illustrated by Skiagraphs; Capsulotomy; Operation for Pterygium. Clinical Lecture delivered at the Medico-Chirurgical College. By L. Webster Fox, A.M., M.D., Professor of Ophthalmology in the Medico-Chirurgical College, Philadelphia, Pennsylvania. Reprint.

A Treatise on Aphasia and Other Speech Defects. By H. Charlton Bastian, M.A., M.D., Lond., F.R.S., Fellow of the Royal College of Physicians of London; Honorary Fellow of the Royal College of Physicians of Ireland; Emeritus Professor of the Principles and Practice of Medicine and of Clinical Medicine in University College, London; Consulting Physician to University College Hospital, etc. With illustrations. New York: D. Appleton & Co. 1898.

Original Articles.

ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.[1]

BY JOHN H. McCOLLOM, M.D., BOSTON.

The use of antitoxin in the treatment of diphtheria has passed the experimental stage and its advantages in the treatment of this disease are now generally recognized. There are, however, some members of the profession who from insufficient experience or from a series of unfortunate cases are inclined to throw discredit upon the remedial power of the healing serum. There are others who claim that the administration of antitoxin has a deleterious effect on the heart, and that it is an important factor in causing renal disease. The object of this paper is to show that the death-rate from diphtheria has been materially reduced since the introduction of antitoxin, and also to prove that this agent has no injurious action on the heart, and that it cannot be considered as being the cause of the renal complications occurring in the course of diphtheria.

Diphtheria has until the past two years been a very important factor in increasing the death-rate of Boston. The percentage of mortality from diphtheria in this city from 1880 to 1894 was 30.75, while that from 1895 to 1897 was 12.61. The ratio of mortality from diphtheria per 10,000 of the living has been quite large, but during the past three years it has gradually diminished. An examination of mortuary statistics for ten years from 1888 to 1897 shows that in 1888 the ratio was 13.88 per 10,000; that in 1889 it was 15.65; that in 1890 it was 10.30; that in 1891 it was 6.23; that the rate in 1892 was 10.29; that for 1893 it was 11.45; that in 1894 it was 18.03; that in 1895 it was 11.73. It was during this year that antitoxin began to be generally used, and we see a marked reduction in the mortality rate as compared with that of the previous year. The rate in 1896 was 9.80, and that for 1897 was 7.7. If we compare the rate for 1894, which was 18.03, with the rate for 1897, which was only 7.7, it will be seen that there has been a diminution of more than one-half. If we go back to the semi-decade from 1861 to 1865 the ratio is found to be 11.10, while in the semi-decades from 1866 to 1870 and from 1871 to 1875 the ratios are 6.54 and 7.20. This low death-rate can be explained by the fact that diphtheria was not then so carefully studied as it is at the present time, and that the diagnosis was not based upon a bacteriological examination, and therefore many cases which were diphtheria were not recognized as such. For instance, in Boston in 1872 with a population of 265,764 there were only 94 deaths from this disease. It is not reasonable to suppose from what is known of the prevalence of diphtheria at the present time, that during 1872 there could have been only 94 deaths from so fatal a disease as diphtheria. It has been claimed by the opponents of antitoxin that the mortality statistics of this disease are fallacious because by a bacteriological examination many mild cases are recognized as diphtheria which formerly would have been classified as tonsillitis and other inflammatory processes in the throat. While this may be true to a certain extent, yet this so-called source of error cannot be considered an important factor in invalidating the accuracy of the statement that the ratio of mortality from diphtheria has materially diminished since the introduction of antitoxin.

In Berlin, for the four years from 1890 to 1893, the percentage of mortality from diphtheria was 35.34; that for the four years from 1894 to 1897, inclusive, when antitoxin was used, the death-rate was 18.08. As these statistics embrace a period of eight years, and comprise in the first four years 16,088 cases of diphtheria, and in the second four years 19,394 cases, the argument that not a sufficient number of cases has been observed can have no weight; neither can the argument that the type of the disease has become milder have any significance, for the time is long enough for the type to change from mild to severe, and from severe to mild.

In an analysis of the ratio of mortality in 266 German cities of about 15,000 inhabitants, it was found that the ratio of mortality, per 100,000, of the living before antitoxin was used, varied from 130 to 84 from 1886 to 1893, while the ratio from 1894 to 1897 varied from 101 to 35. It is a significant fact that during 1894, when although antitoxin was used to a certain extent it was not in general use, the ratio was 101; that when antitoxin was used more extensively, in 1895, the rate was 53; that in 1896 it was 43; that in 1897, when antitoxin was very generally used, the rate fell to 35. This diminution is so marked, and has been so gradual, that it cannot be explained by any change in the type of the disease. In Paris a similar condition has been observed; for instance, from 1890 to 1893, the deaths from diphtheria varied from 1,639 in 1890 to 1,262 in 1893. In 1894, when antitoxin commenced to be used, the number of deaths fell to 993. In 1895 there is the astonishing diminution to 411. In 1896 the deaths were 445, and in 1897 there were only 274. In Boston the diminution was nearly as great. The most important argument, however, in favor of antitoxin is the diminution in the percentage of mortality in hospital cases. It has also been claimed that these statistics were unreliable because based on mild attacks of the disease; but this statement cannot be considered correct because mild cases of disease are not sent to hospitals, as a rule.

The hospital death-rate from diphtheria before the introduction of antitoxin, not only in this country but also in Europe, was about 46 per cent. In the South Department of the Boston City Hospital since it was opened, September 1, 1895, to the first of May, 1898, there have been 4,196 cases of diphtheria treated, with a percentage of mortality of 13.7. Lest it might be said that diphtheria might have assumed a milder type during these two years and eight months, it may be of interest to note that in the first five months the percentage was 13; that in the year ending February 1, 1897, it was 15.3; in the year ending February 1, 1898, it was 13.5; and in the three months ending May 1, 1898, 11.1. The diminution in the mortality rate in the last three months can be explained by the fact that cases are now sent to the hospital earlier than formerly, and therefore they receive the full benefit of the treatment. Experience has demonstrated the importance of giving antitoxin at the earliest possible time in the course of the disease. If the moribund cases or the cases that died within twenty-four hours of admission are eliminated the death-rate of cases amenable to treatment would be about nine per cent. It must be borne in mind that these were cases of diphtheria both from a bacteriological and from a clinical point of view.

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[1] Read before the Massachusetts Medical Society June 7, 1898, and recommended for publication by the Society.

In the hospitals of Berlin the death-rate from 1885 to 1894 varied from 41 per cent. in 1885 to 28 per cent. in 1894. In 1895, when antitoxin was generally used, the percentage of mortality was 16. In 1896 it was 13, and in 1897 it was 13. In no single instance has there failed to be a diminution in the death-rate from diphtheria in hospitals where antitoxin has been used. In some instances the percentage has diminished two-thirds. In cases in private practice the diminution in the mortality rate has been equally marked. Some observers have given as low a death-rate as 8 per cent. Of course it will be said, by the opponents of antitoxin, that many of these cases were mild, and that they would not have been recognized as diphtheria if it had not been for a bacteriological examination. As the statistics on which this death-rate was based were compiled by men of large experience in the treatment of this disease, we must accept their statements as conclusive proof of the antidotal power of the anti-diphtheritic serum.

In the laryngeal cases antitoxin has been as effective as in the pharyngeal cases, a large percentage of the patients having been relieved without the necessity of an operation. In the *Report* of the American Pediatric Society on the Antitoxin Treatment of Laryngeal Diphtheria in Private Practice, comprising 1,704 cases, the statement is made that the death-rate was 21.12 per cent. Of these cases, 1,036 did not require operation, and the percentage of mortality was 17.18. In the operative cases the results have been equally gratifying. In 5,546 intubation cases, collected by McNorton and Maddren in 1892, the mortality was 69.5 per cent. In 370 intubations reported by O'Dwyer, from his personal experience, the percentage of mortality was 72.44, before antitoxin was used. In 59 intubation cases, reported by O'Dwyer, after the advent of antitoxin, the mortality was 23.7 per cent. At the Boston City Hospital, for the year ending January 31, 1895, the percentage of mortality in intubation cases was 83. Very few of these cases had antitoxin. In the South Department from September 1, 1895, to May 1, 1898, the percentage of mortality in 457 cases has been 55 per cent. For the three months ending with the 1st of May, 1898, there have been 28 intubations with 8 deaths, with a percentage of mortality of about 28. It is a very significant fact that the condition of these patients admitted in the last three months showed that they had only been ill a short time, which only emphasizes the great importance of the early administration of antitoxin and prompt operative interference. It must be borne in mind that hospital cases, as a rule, are not admitted until their condition is such that the golden opportunity for administering antitoxin has passed, and this explains the fact that the death-rate in hospital cases is a little higher than that occurring in private practice. For the relief of laryngeal stenosis — for laryngeal stenosis in the majority of instances is caused by diphtheritic membrane — intubation is the operation to be preferred. A careful analysis of a large number of cases of tracheotomy as compared with an equal number of intubations proves conclusively that the death-rate in the former operation is much larger than in the latter.

In the operative cases at the South Department broncho-pneumonia was responsible for 55 per cent. of the deaths. As broncho-pneumonia cannot be considered a part of the diphtheritic process, but is essentially a complication, the occurrence of this lesion cannot be used as an argument against intubation or against the use of antitoxin. There is no doubt of the importance of the early administration of antitoxin, not only in the laryngeal cases but also in the other forms of diphtheria.

Although intubation is the operation of election in children, tracheotomy in adults is to be preferred. The following tracheotomy case is worthy of mention, as an illustration of the beneficial effects of antitoxin: The patient was a man twenty-five years of age. He had been ill three days. There was extreme prostration, great glandular enlargement and excessive edema of the neck. The tonsils were very much enlarged, meeting in the median line. There were large patches of membrane on each tonsil, on the uvula and on the hard palate. There was intense hyperemia of the mouth. Patches of necrotic membrane could be seen; the patient was cyanotic. A strong septic odor was noticed. Heart-sounds were feeble. Temperature 99°. In short, the patient was almost moribund; in fact, when he was put in bed he stopped breathing. The trachea was immediately opened and artificial respiration was commenced. At the end of a few minutes he gasped, began to breathe naturally and became conscious. On the fifth day the membrane commenced to be detached. He had five large doses of antitoxin at intervals of twenty hours, and was very freely stimulated. On the fifth day the tube was removed. On an examination of the throat the uvula, which had been covered by the swelling of the tonsils, could be seen. At no time did the temperature rise above 104°. The patient had a moderately severe attack of pneumonia. Esophageal feeding was given owing to the inability of this patient to swallow, partly on account of paralysis, and partly on account of the swelling of the fauces. At intervals the feeding caused vomiting, and nutriment enemata were tried. He made a slow recovery owing to post-diphtheritic paralysis, which was general. There is no doubt that this patient owes his life to tracheotomy and also to antitoxin; the one would have been powerless without the other. Careful feeding and heroic stimulation were also very important factors in contributing to his recovery.

Diphtheria of the eye has been justly considered one of the severest affections of this organ, and the treatment was formerly eminently unsatisfactory. At the South Department there have been fifteen cases of undoubted diphtheria of the eye, in which in nearly every instance the sight would have been lost if it had not been for the heroic administration of antitoxin. Of these fifteen cases, in only one instance was there destruction of this organ, and in this case, if the eye had been in a normal condition at the commencement of the attack, there is no doubt that it would have been saved. When a diphtheritic membrane appears in the eye the effect of antitoxin on the membrane can be more carefully studied than when it appears in the pharynx. In some of these eye cases 2,000 units were given as the initial dose, and this was repeated in six or eight hours, if there was not a marked improvement. In some instances it was necessary to give three or four doses. Without going into the minute history of each case it is sufficient to say that these were cases of genuine diphtheria, both from a bacteriological and from a clinical point of view. In addition to antitoxin an ointment of red iodide of mercury, and in some instances the yellow iodide in the proportion of one grain to the ounce of vaseline, was used. The pupils were dilated by atropine, and in some instances cocaine was used. In all these cases the source of infection could be directly traced to a nasal discharge loaded with the bacilli of diphtheria.

It has been stated by the opponents of antitoxin that the serum does not have any effect in restricting the formation of the membrane. In reply to this it must be said that a person who makes such a statement cannot have carefully observed his cases, for any one with experience in this remedy must have noticed the peculiar effect that the healing serum has on the membrane. If a sufficiently large dose is given, at the end of six or eight hours in favorable cases the membrane commences to roll up at the edges and is undermined. The mucous membrane of the throat near the site of the diphtheritic membrane assumes a more normal appearance. The pain and soreness diminish. If there has been glandular enlargement this also commences to diminish. If, however, this favorable change does not take place at the end of from six to eight hours, a second dose must be given, to be followed by a third, a fourth, or even a fifth, until the characteristic effect of the serum is produced. Except in the case of very young infants, the initial dose should always be 2,000 units, and even in severe cases 4,000 units may be given. The amount of fluid and not the inherent principle of antitoxin is the only possible source of danger in giving very large doses of this agent, and therefore the more concentrated the preparation the better. There is much greater danger of giving too small than too large a dose of antitoxin. The difficulty of knowing just what amount of antitoxin should be administered is due to the fact that we do not know how much of the toxin of the disease is to be antagonized. In the case of guinea-pigs that are used for testing the serum a certain definite amount of toxin is injected and this is antagonized by a certain amount of the healing serum. In the case of human beings ill of diphtheria, however, it is impossible to know the degree of toxicosis and therefore it is far better to err by giving large doses than to make the mistake of giving too small doses. There is not the slightest evidence, in a careful, clinical study of 4,196 cases of diphtheria, that antitoxin caused any serious trouble. It is true that urticaria and arthralgia have occurred in a comparatively small proportion of these cases, but these symptoms are not of sufficient gravity to deter any physician who has the well-being of his patients at heart from the administration of antitoxin. The whole matter may be summed up in these few words: Diphtheria, antitoxin, possible urticaria and arthralgia, recovery. Diphtheria, no antitoxin, probable death. Which do you prefer? A short account of the two following cases may be of interest as showing the importance of giving large doses of antitoxin in severe cases of diphtheria. It may be remarked in passing, that the hospital records contain a great number of similar cases, but to give a detailed account of each severe case cured by antitoxin would weary your patience and increase the size of this paper beyond all reason.

Case I. A girl, seven and one-half years of age. She had been ill four days. Her condition at entrance was as follows: Marked prostration, strong septic odor and great glandular enlargement. Profuse nasal discharge. Tonsils very much enlarged and covered with thick diphtheritic membrane. Uvula and hard palate covered with membrane. Temperature 100°. Pulse 120. General condition indicating profound poisoning by the toxin of diphtheria. At 5 P. M. she had 2,000 units of antitoxin. This dose was repeated in four hours. Two doses of 2,000 units each were given the next day. On the third day she had one dose of 2,000 units. On the fourth day she had two doses of 2,000 units each. After the third dose the membrane commenced to roll up at the edges, but as the improvement in the condition of the membrane was not as rapid as could be desired the remaining four doses were given. On the fifth day after entrance the throat was practically clear. In addition to antitoxin the patient was very freely stimulated, both with alcoholic and cardiac stimulants. Nourishment was an important factor in the treatment. There is no doubt that antitoxin saved the life of this patient, neither is there any doubt that if the remedy had been administered the first day of her illness the membrane would not have extended, and she would not have been so critically ill. This patient had 14,000 units of antitoxin, or in bulk 140 c. c. She made an uninterrupted recovery and was discharged well.

Case II. A girl, seven years of age, had been ill three days. On entrance she had a profuse epistaxis; there was a very strong septic odor; marked glandular enlargement and a very extensive deposit of membrane covering the tonsils, uvula, and nearly two-thirds of the roof of the mouth. She was in a state of collapse and apparently had but a few hours to live. This is the severest case of diphtheria that I have ever seen recover. On the day of entrance she had two doses of antitoxin of 2,000 units each. On the second day she had three doses of 2,000 units each. On the third, fourth, fifth, sixth and seventh days after entrance she had 2,000 units each day. In all, this patient took 20,000 units of antitoxin, or in bulk 200 c. c. There was not the slightest irritation about the point of inoculation, neither were there any untoward symptoms attributable to antitoxin. The patient made a good recovery. It is not possible to vividly portray the critical condition of this patient when admitted to the hospital. Any sane man who treated diphtheria before the days of antitoxin, if he had seen this case, could have no doubt that the patient owes her life to the administration of this agent. These two cases are of particular interest because they were cases of uncomplicated diphtheria, and therefore derived full benefit from the serum. In cases of mixed infection, although antitoxin has its antidotal effect on the diphtheritic process, it has no effect on a streptococcus poisoning, or in attacks of broncho-pneumonia. The majority of cases of diphtheria treated by antitoxin, that die, succumb, not from diphtheria but either from a streptococcus infection or from broncho-pneumonia. In the 4,196 cases of diphtheria that have been under my personal observation, in only three cases has the membrane extended after the administration of antitoxin, and then only to a limited degree. If the cases that died from broncho-pneumonia and degeneration of the pneumogastric nerve are eliminated, the percentage of deaths from uncomplicated diphtheria treated by antitoxin would be surprisingly low, so low that it would hardly be credited.

A word might be said regarding the temperature in diphtheria. A high temperature in diphtheria indicates some complication. In an analysis of 800 cases of diphtheria, studied with this special point in view, it was observed that of 121 fatal cases, 16 had a temperature of above 103°; that the remaining 105 had a temperature ranging from normal to 103°. The high temperature in each instance was proved, either by the clinical symptoms or by the autopsy, to have been due to some complication. Of the 679 non-fatal cases, which form a part of the 800, only 55 had a temperature of 103° and above.

The importance of the early administration of antitoxin in large doses is not sufficiently appreciated. In order to get the full benefit of this agent, it must be given at the earliest possible moment. A delay of twenty-four hours frequently imperils the life of the patient, or at least prolongs the attack. Laboratory experiments have demonstrated conclusively that if the mucous membrane of animals was painted with pure cultures of diphtheria bacilli, and antitoxin was administered at the same time, no membrane was formed. If, on the other hand, twenty-four hours elasped after the animals were inoculated before antitoxin was given, membrane was formed; if there was an interval of forty-eight hours the animals generally died. It may be said that these are laboratory experiments and therefore the conditions are not the same as in clinical diphtheria. In reply it can be said that since the South Department was opened there have been sixty cases of diphtheria among the attachés of the hospital, and there has not been a single death. In each case antitoxin was administered upon the appearance of the very first symptoms of the disease. To antitoxin, and to antitoxin alone, must be given the credit of this gratifying result. There was a very different experience in the City Hospital proper, in the diphtheria wards, before the days of antitoxin.

It has been stated that antitoxin has an injurious effect on the heart; that cases of sudden death are more common after its administration. A careful study of diphtheria before antoxin was used shows conclusively that heart complications were exceedingly frequent, more so than at the present time. Mollard and Regaud proved by their experiments on dogs and rabbits injected with fatal doses of diphtheria toxin that the process in the heart is similar both in symptoms and in pathological appearances to that found in human diphtheria. Different observers as far back as 1878 found marked changes in the nervous structure of the heart and in the muscle itself, due to the absorption of the diphtheritic toxin. This proves that heart complications were recognized long before antitoxin was used. It is a significant fact that the majority of the patients who died from heart complications at the South Department had been ill three or four days before antitoxin was administered, and therefore the bacilli of diphtheria had sufficient time to generate toxin enough to cause degeneration of the nervous structure of the heart. This would seem to be a sufficient answer to the statement that antitoxin causes heart complications. There is not the slightest scintilla of evidence, either from the clinical study of the cases or from the result of autopsies, that antitoxin has any injurious effect upon either the heart muscle or its nervous structures.

It has been claimed that antitoxin causes albuminuria. This symptom, however, occurring in the course of diphtheria, was recognized long before antitoxin was used. An analysis of the urine in 173 cases, treated at the South Department, was made before and after the administration of antitoxin. Of these 173 cases it was found that in 99 instances albumin was absent both before and after this agent was used, which was without doubt due to the fact that the healing serum was given before the diphtheritic membrane had increased sufficiently to generate toxin enough to cause albuminuria. In 33 cases the albumin was about the same; in 25 it was diminished; in 16 it was slightly increased, but not to a sufficient extent to cause any special anxiety. The conclusion, therefore, that albuminuria, when it occurs in the course of diphtheria, is caused by the toxin of the disease and not by the healing serum, is justifiable. In investigating the results of any special course of treatment in a given disease, it is well to know something of the natural history of the disease, and the importance of this the opponents of antitoxin have not fully appreciated.

Cutaneous manifestations and arthralgia are unfortunate complications that follow the use of antitoxin, but these are never of sufficient gravity to constitute an argument against the use of antitoxin. That abscesses sometimes occur after the injection of antitoxin is a direct reflection on the man who gives the injection. If the parts are thoroughly sterilized; if the syringe is boiled a sufficiently long time; if the operator's hands are sterile; if the serum has not commenced to decompose. abscesses will not form. After a bottle of serum is opened, if the contents are not all used at one injection, the remainder should be thrown away; for if the serum is exposed to the air, even for a limited time, it is very likely to decompose, and therefore the liability to the formation of abscesses is very much increased. At the South Department, in the last few months, there have been 500 doses of antitoxin given without a single abscess, which proves that the sterilization has been effective.

Various situations have been selected for the site of the injection, but experience has taught me that the upper part of the thorax, near the posterior axillary line, is the best place. If, unfortunately, through some fault in technique an abscess does form, the pus does not burrow to such an extent as it would in the thigh or in the back. It is essential that the syringe should be made of glass with asbestos packing, so that it can be thoroughly sterilized by boiling.

From an examination of mortuary statistics, both in this country and in Europe; from a clinical study of 4,200 cases of diphtheria, it seems to me that the following conclusions are absolutely correct:

First, that the death-rate of diphtheria has been reduced to a remarkable degree by the use of antitoxin.

Second, that in order to derive full benefit from this agent it is important that it should be given in large doses early in the course of the disease.

Third, that antitoxin should be frequently repeated, until the characteristic effect is produced on the diphtheritic membrane.

Fourth, that antitoxin does not cause albuminuria, and that it has no effect in producing heart complications in this disease.

Fifth, that the physician who does not use antitoxin in the treatment of diphtheria fails to do his whole duty to his patient.

An Institute of Hygiene has been opened in Buenos Ayres. The Director of the Institute is Dr. Ferruccio Mercanti.

THE TOXIN OF DIPHTHERIA AND ITS ANTITOXIN.[1]

BY THEOBALD SMITH, M.D., BOSTON.

Ever since Roux and Yersin demonstrated the fact that diphtheria bacilli act in the main through a soluble poison or toxin which they produce during multiplication, this toxin, as well as those of other pathogenic bacteria, has been the object of considerable attention on the part of experimental medicine. The discovery of the antitoxic properties of the blood of immunized animals by Behring and Kitasato in 1890 was a signal for the renewed study of the toxin for which a true antidote has now been found.

In accordance with their facilities and command of methods, experimenters have been exploiting the nature and action of toxins in different directions, some applying the methods of physiology and physiological chemistry, others those of pathological anatomy, still others those of experimental biology. Though we must acknowledge that we are only within the threshold of this work, it is difficult not to see what progress has been made. Ten years ago a vague knowledge of the existence of bacterial poisons was all that we possessed. Of the existence of antitoxins there was not a hint. Since then a new horizon has come into view fully as great in its sweep as that which presented itself to the great discoverers in the domain of micro-organisms. For while the latter revealed to us the swarm of enemies that beset us, the former unfolds before us the forces that the animal body holds in readiness for them.

An exhaustive review of the various additions to our stock of information upon the toxin of diphtheria would far exceed the time limit of this paper. I shall, therefore, restrict my remarks to a brief *résumé* of those facts and theories which appeal to the physician who is confronted by questions not in the laboratory but at the bedside.

The immediate objects of most of the investigations made in recent years may, for convenience, be grouped under three heads:

(1) A clearer insight into the nature of toxins and of their action upon the various tissues of the body and cells composing them, in order that diphtheria as well as other toxic diseases may be better understood.

(2) More information concerning the essential nature and specific action of antitoxin; and

(3) The improvement of the antitoxins and the cheapening of their production.

Before entering upon a discussion of these subjects it may be well to briefly review the established facts and some unestablished theories concerning the action of the diphtheria bacillus itself. While attention has been most exclusively focused upon the toxin, it should be borne in mind that the bacillus is, after all, the exclusive manufacturer of this product, and that the character of the bacillus and its adaptation to the conditions found on mucous membrane determines from the beginning the gravity of the infection.

In the presence of suitable food substances, among which, in artificial cultures, the albumoses or so-called peptones seem to stand at the head, the diphtheria bacillus during its multiplication produces a poison or toxin which diffuses promptly from the cell body in which it presumably arises into the surrounding fluid. After removal of the bacilli from the culture fluid, this is capable of producing experimentally the various lesions, including paralysis, ascribed to the diphtheria bacillus when it attacks the human subject. The bacillus, conveyed from one person to another, seems to vegetate almost exclusively upon exposed surfaces, primarily mucous membranes, secondarily wounded areas of the integument.

The hyperemia and exudation which follow the earliest absorption of toxin supply the bacillus with a suitable nidus in which to continue its multiplication and produce more toxin. In this way the diseased area spreads, the poison is manufactured and absorbed more abundantly and constitutional symptoms indicated by fever and prostration appear. The microscope informs us that during the earliest local manifestations the usual scant, miscellaneous bacterial flora of the mucosa is quite suddenly replaced by a rich vegetation of the easily distinguishable diphtheria bacillus. Frequently no other bacteria are found in the culture-tube. This vegetation continues for a few days, then gradually gives way to another flora of cocci and bacilli, and finally the normal condition is re-established. The disease process is probably checked in all cases by the appearance of antitoxin in the blood produced by certain tissues or cell groups under the stimulus of the diphtheria toxin. Nowadays the antitoxin in the serum of the immunized horse is introduced to hasten and increase the resistance of the body.

Diphtheria bacilli vary slightly in their capacity to produce toxin in culture-fluids. A comparative study of over forty cultures of diphtheria bacilli from different towns of this State,[2] carried on under uniform conditions, showed that some bacilli produced from two to three times as much toxin in a given time as others. This quantitative production seems to remain indefinitely the same for each bacillus, so that the inference that there is some difference in the bacilli studied cannot well be rejected. Just what bearing this difference would have upon the human subject we cannot easily determine, owing to the many variable conditions and the now prevalent antitoxin treatment.

Given the power to produce toxin, the important question arises as to the nature of the impulses which start the multiplication of diphtheria bacilli on mucous surfaces. The commonly accepted view is that the bacilli need only to reach the throat of a suceptible individual to multiply. But insuceptibility does not necessarily prevent multiplication, for this may go on for several months after the recovery of patients. If diphtheria bacilli could multiply on mucous membranes as soon as they reach them there would be many more healthy persons than are now found harboring diphtheria bacilli. I am inclined to believe that slight injury to the membrane, such as erosions, traumatism, hyperemia followed by slight exudation due to exposure, and possibly certain undetermined chronic affections, favor and perhaps determine multiplication after infection in primarily susceptible individuals. It is highly probable that the special food needed by the diphtheria bacillus to produce toxins comes from the blood and becomes available through lesions of the mucous membrane. The injury may be of the slightest character and still afford a foothold for the bacilli, after which their multiplication with toxin production will lead to the spreading of the disease process.

This theory would help to account for the great increase of diphtheria in the colder season of the year, which increase is in part accounted for by the great overcrowding of living rooms in winter and the better opportunities for infection thereby offered. It would also account for the occasional discovery of bacilli in the throat a few days before the outbreak of the disease and harmonize with the experimentally demonstrated fact that toxins are harmless upon normal mucous membranes.[8]

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[1] Read by invitation before the Massachusetts Medical Society, June 7, 1898, and recommended for publication by the Society.

[2] Theobald Smith and E. L. Walker: Report of the State Board of Health of Massachusetts, 1897, p. 649.

While infection will always play the dominant rôle in communicable diseases, the determining influence of accessory causes must not be lost sight of. These, I think, will form the great themes of study in the near future.

The persistence of diphtheria bacilli in the throat after the local and general disturbances have disappeared has been at first regarded as of little significance because the belief had been disseminated that such bacilli had lost the power to produce toxin. This, unfortunately, is not true. In the article quoted above, special attention was paid to this important subject. Even after a prolonged sojourn in the throat the toxin production of the bacilli was up to the average. Their harmlessness to the recovered patient may be referred to the presence of antitoxin in the blood, possibly also to the fact that the substances upon which the bacilli live in the normal throat may not yield that abundance of toxin furnished by the pathological exudates. Whatever the explanation may be, the potential danger of such cases as foci of the disease must be accepted in the light of recent researches.

Another subject of great importance, clinically, is the not infrequent occurrence of so-called septic forms of diphtheria, generally referred to the presence of adventitious pathogenic forms, such as streptococci and possibly of other little known bacteria. The source of the pathogenic forms is most consistently referred to some pre-existing lesion in the mouth or throat, such as catarrh, carious teeth, and lesions of the mucous membrane. Evidently the combinations of bacteria with diphtheria bacilli may be many, and the conditions favoring them very variable. No satisfactory light has been shed upon these mixed infections. We know from almost daily experience that certain groups of bacteria growing in nutritive fluids with diphtheria bacilli favor the production of toxin materially, while other groups decidedly interfere with it. The toxin produced under such conditions is stilll diphtheria toxin, for it is neutralized by antitoxin in the usual way. The frequently unsatisfactory course of such cases may be due to the actual invasion of the body by the accessory bacteria, or to the continued expansion of the disease process locally under their influence whereby the diphtheria bacillus is favored in spite of antitoxic influences. Diphtheria antitoxin acts specifically upon diphtheria toxin and on this only. Hence the interposition of other pathogenic bacteria is likely to disturb the expected therapeutic action of the serum. The importance of early treatment becomes manifest when we consider that the septic bacteria may be at first favored by the diphtheria bacillus, and then when once established return the favor by supporting it.

It is also possible that non-specific inflammation of the throat due to pyogenic bacteria may precede the infection with diphtheria bacilli. The history of exposure and the clinical course of the disease in the early stage, combined with bacteriological examination of the throat, should bring to light such cases if they actually occur.

The extensive bacteriological studies of mixed infections made by Roux and Yersin, Martin, Barbier, Bernheim and others, have not been able to establish certain somewhat fanciful hypotheses of the action of streptococci upon diphtheria bacilli.[4] It would seem that the same processes are at work as in ordinary wound infections. The diphtheria bacillus starts the lesion; the streptococci actually present take advantage of the wound to penetrate into the body. The greater the lesion and the more abundant the injured tissue and the exudation, the more favorable the conditions for the secondary invaders. The more virulent these are, as v. Dungern[5] states, the more severe the disease that follows their entry and multiplication. This element of virulence among the secondary invaders is probably the most potent; next would come the extent of the throat lesion upon which they are grafted. In this connection it may be interesting to note that Bonhoff[6] was able to produce in guinea-pigs a glomerulo-nephritis when cultures of diphtheria bacilli were injected, which had been prepared either by inoculating streptococcus cultures with diphtheria bacilli, and thus producing mixed cultures, or else by inoculating sterile filtrates of streptococcus cultures with diphtheria bacilli.

Experiment is unable to exploit many problems relating to bacteria pathogenic to man, and we must content ourselves in many respects with hypotheses adapted as closely as possible to truths already established. This difficulty obtains when we endeavor to seek information concerning the relative virulence of bacteria as distinguished from their toxicity. By virulence I mean the power of bacilli to implant themselves upon living tissues, and resist bactericidal forces. It is evident that a virulent bacillus need not necessarily be a potent toxin producer. Virulent bacilli would include such as are readily infectious and which are likely to produce epidemics. Such epidemics need not be associated with a high mortality. The important factor is the spreading tendency of the disease. While we are able to compare the toxin production of different bacilli, the relative virulence is not determinable because there is no species of animals which contract diphtheria spontaneously and upon which experiments might be made.

Leaving now the bacillus itself, we will turn to the toxin. This is demonstrable in culture fluids from which all bacilli have been removed by its pathogenic properties. Its action upon guinea-pigs is characteristic and the same qualitatively whatever culture may have produced the toxin. The course of the experimental disease is determined by the quantity of toxin administered. Thus the dose which is fatal to a guinea-pig in two and one-half days, when doubled is, as a rule, fatal in one and one-half days. With the larger number of bacilli we have studied, about 0.08 cubic centimetres of the filtered culture fluid suffices to prove fatal to a guinea-pig of 300 grams in three or four days. A few bacilli have been found which produce a toxin quantitatively ten times as strong as the average. The lesions vary in intensity according to the dose of toxin injected. When death ensues very rapidly within twenty-four hours very slight hemorrhagic changes are found at the place of injection. When the disease lasts thirty-six hours, there is more or less edema associated with hemorrhage at the place of injection, the lungs are edematous, and are compressed by a clear colorless effusion in the pleural sacs. The adrenal bodies are deeply reddened. When the disease lasts more than two days, the pulmonary edema and pleural effusion are absent, and the local edema is replaced by induration of the tissues, sloughing and ulceration. The whole process seems to be started by an injury to the vascular walls whereby edema, thrombosis and hemorrhage, and the inevitable necrosis, follow one another in proper sequence. The pulmonary edema is also apparently the result of an injury of the vascular walls by the toxin. The lesions are thus akin to those which appear on the mucous membrane in the human subject.

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[8] After the completion of this manuscript the work of Morax and Elmassian (Annal. de l'Institut Pasteur, 1898, p. 210), on the action of the diphtheria toxin on mucous membranes, came into my hands. These authors experimented upon the conjunctiva of rabbits. By instilling with the utmost caution a few drops of very strong toxin every three minutes for a period of eight to ten hours, characteristic diphtheritic changes of the conjunctival mucosa were produced. Less prolonged contact failed to cause any reaction. The nasal mucosa remained unaffected. This experiment simply shows that all tissues must give way eventually. If we assume that the mucosa in absorbing the toxin has the power of transforming it, this power will be broken down in time. Again, the instilling of a ready-made toxin of great strength does not mean that the diphtheria bacillus is in a position to manufacture it on the intact mucosa.

[4] In artificial mixed cultures the streptococci are probably unfavorable, the staphylococci favorable, to the production of diphtheria toxin. This I infer from their general biological characters, as I have not made any direct experiments with them. Clinically, the streptococci, however, are regarded as the most dangerous secondary invaders.

[5] Beiträge zur allg. Pathol, xxi, p. 104.

[6] Hygien. Rundschau.

Table giving Summary of Cases of Paralysis observed in Guinea-pigs following the Subcutaneous Injection of Diphtheria Toxin.

Number of Guinea-pig.	Weight in Grams.	Injection of		Effect (Local).	Date of Injection.	Date when Paralysis first noticed.	Final Result.
		Toxin.	Serum.				
519	340	Mixed Toxin, No. 44.	Horse IX.	Induration.	Feb. 10, 1897.	Mar. 11, 1897.	Recovered by March 24.
566	317	Toluol Toxin.	" X.	Very slight edema.	Mar. 26, 1897.	Apr. 24, 1897.	Dies from paralysis of respiration Apr. 25–26.
597	339	" "	" "	" " "	Apr. 20, 1897.	May 15, 1897.	Would probably die; chloroformed May 18.
604	300	" "	" III.	Very slight induration and loss in weight.	Mar. 26, 1897.	Apr. 24, 1897.	Recovered May 7.
851	251	Toxin No. 5.	" "	Induration and bald area.	Dec. 21, 1897.	Jan. 14, 1898.	Recovered January 28.
870	294	" " "	" XV.	Edema followed by small slough.	Jan. 15, 1898.	Jan. 31, 1898.	Unable to move February 5; chloroformed.
878	258	" " "	" IX.	Induration, slight slough.	Feb. 17, 1898.	Mar. 14, 1898.	Recovered March 23.
884	254	" " "	" XV.	Thin slough.	Feb. 17, 1898.	Mar. 13, 1898.	Dies March 17.
850	257	" Lb.	No serum.	Slough and ulcer.	Dec. 27, 1897.	Jan. 18, 1898.	Chloroformed.
899	277	" 3 Pf.	" "	Large slough.	Mar. 2, 1898.	Mar. 17, 1898.	Chloroformed March 21.
905	252	" No. 5.	" "	Superficial slough.	Mar. 2, 1898.	Mar. 18, 1898.	Chloroformed; extensive paralysis.
901	277	" " 6.	" "	Slough.	Mar. 8, 1898.	Mar. 28, 1898.	Chloroformed; extensive paralysis.

Further than this the guinea-pig may show lesions of the nervous system manifested by disturbances of locomotion of greater or lesser severity and extent, involving the limbs and the muscles of respiration. The following table epitomizes the cases of nervous lesions among guinea-pigs observed during the past sixteen months in the laboratory among a total of 188, under observation from four weeks to several months after inoculation. These guinea-pigs received either toxin alone or else serum and toxin. The former group received a trifle less than the minimum fatal dose, the latter ten times that dose plus the antitoxin.

Of the forty-two guinea-pigs which survived the simple injection of toxin, there were represented all gradations of local changes from the merest edema to necrosis and ulceration of the seat of injection. The table shows that four of these, or about ten per cent., became paralyzed. Of the 146 which survived the injection of the mixture of toxin and antitoxin the local lesion was in most cases absent. Of these eight, or about five and one-half per cent., became paralyzed. In all cases of paralysis there was a local lesion, either very slight or more severe, indicating that the serum added to the toxin was not quite sufficient to neutralize the latter completely. The table furthermore shows that of these twelve cases, paralysis appeared in five cases in the third week, five cases in the fourth week, and three cases in the fifth week. In almost every instance the guinea-pig had been regarded as well and placed in a large box with other recovered animals. The paralytic lesions came on quite suddenly, usually overnight. The animal was found moving with greater difficulty. The front limbs seemed to be attacked most frequently. The anterior half of the body rested upon the floor and the body was propelled by the hind feet. In one case prolonged friction with the floor of the box had produced bald spots over the sternum. When the hind limbs were affected, the body became unbalanced, the animal swayed from side to side, in severe cases rolled over and gained its equilibrium with difficulty, or else remained lying down. In a few animals respiration was affected. This became slower, sometimes labored, rarely almost convulsive. Such animals were generally incapacitated, lay on their sides and died soon or were chloroformed. In the milder forms recovery is complete in about two weeks from the date of the earliest paretic symptoms. The more severe cases die, probably of paralysis of the respiratory muscles. A consultation of the dates given in the table shows that cases of paralysis were not observed from May to December. Whether the warm season or the kind of toxin employed is to blame another year may help to explain. I am inclined to consider both elements involved. Cold weather certainly makes guinea-pigs less resistant to the toxin and the frequent occurrence of paralysis with toxin marked No. 5 points to this as in part to blame.

I have introduced these facts because they serve to illustrate once again the capacity of the toxin of diphtheria freed from the bacilli to produce lesions of the nervous system akin to those which appear in man.

While the toxin of diphtheria is thus recognizable only by what it does when injected into susceptible animals, we are not, therefore, at a loss to recognize its presence, though the process of recognition involves a great amount of labor in all investigations with it. The desire to know more definitely what the nature and composition of this substance is, is a very legitimate one, not only for theoretical but also for practical reasons. A definite chemical compound taking the place of the intangible pathogenic agent in our cultures would reduce the complex machinery needed in preparing antitoxin very greatly. Hence all toxins are now objects of research. Those of vegetable origin, such as ricin and abrin, those of animal origin, including the important snake poisons and the blood serum of various animals, and those of bacterial origin, such as the toxins of diphtheria, tetanus and certain meat poisons, are receiving due attention; but the tendency to class these various poisons together and to apply to all of them the slight and often vague information obtained from the study of any one of them, has left the whole subject in a temporarily confused state. It is not improbable that they belong to quite different groups, and that each one must be carefully studied by itself. We need only to compare the different conditions under which the toxins of diphtheria and tetanus are produced — the one most advantageously with the most liberal supply of oxygen, the other only when the activities of oxygen are held in check — to realize that these products may be wholly unlike.

The toxin of diphtheria has been regarded as a ferment or enzyme by Roux and Yersin, Sidney, Martin and others. Later it was considered a toxalbumin by Brieger and Fränkel. More recently, however, Brieger recedes from that position, and regards the poison as of non-proteid nature. By an elaborate method he has concentrated and perhaps purified the poison, without, however, obtaining enough for analyses. He informs us that it is injured by acids and oxidizing agents, but left intact by alkalies and reducing agents. He found that after removing all the toxin from the bodies of the bacilli these still contained a poison, probably derived from the cell substance, which produced local necrosis and death in guinea-pigs. Antitoxin had no power to neutralize this poison. Fortunately this does not figure with any importance in human pathology, as the bacilli rarely penetrate into the body in any considerable numbers.

We know that the toxin of diphtheria is a more or less unstable body. Heated in solution for several hours at 60° C., it loses almost wholly its property of producing disease. It likewise becomes weakened by exposure to air and light. When dried it remains unchanged for a longer time. It is readily brought into this condition by adding ammonium sulphate to the filtered culture fluid. The peptones or albumoses are precipitated out and with them the toxin, which mixture is then dried *in vacuo*. Various other neutral salts, alcohol and zinc chloride cause its precipitation mixed with other substances. It is also mechanically brought down when an insoluble phosphate is formed in the fluid containing it.

In the culture-tube the formation of toxin is subjected to many vicissitudes. In the production of antitoxin serum of high potency, the most important condition to be fulfilled is the production of a very concentrated toxin; for the antitoxin, within certain limits, grows in strength with the amount of toxin the horse under treatment can endure. Hence a study of the conditions under which the largest amount of toxin will appear in cultures has become the first to be entered upon. A discussion of the results of such a study upon which I myself have been engaged during the past three years would lead us too far into details which belong strictly to specialists, more particularly as they do not as yet throw much light upon the metabolism of the diphtheria bacillus or the immediate source and mode of formation of the toxin.

The toxin of diphtheria unfolds its power when introduced under the skin, directly into the blood or into the trachea. It is inert in the digestive tract. Once in the body it seems to disappear quite rapidly from the blood. According to Bomstein only one-eighth of the injected amount was found in the blood of rabbits after one hour. After five hours one-twentieth was detected. Nor was it traceable in the organs, in the contents of the intestines, or in the urine. The inference was drawn that it was destroyed by a chemical action of the tissues. Dzierzgowski believes that it is oxidized into antitoxin in the body of highly immunized animals, a belief not generally shared at present.

(*To be continued.*)

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THE ANTITOXIN TREATMENT OF TETANUS.[1]

BY FRED B. LUND, M.D., BOSTON.

The rarity of tetanus, although it is perhaps a reason why comparatively little attention is given to its study, should not detract from our interest in a disease so sudden and severe in its manifestations, so frequently fatal, and presenting in regard to its treatment so many features which tax the skill and resources of the surgeon to the utmost. With sudden and treacherous onset, following a slight and frequently disregarded wound, it attacks its victims like lightning out of a clear sky. Its progress is frequently so rapid that when the surgeon first sees his patient he is compelled to recognize the probable hopelessness of his efforts. The surgeon who has, if only once in his life, been called upon to treat a case of tetanus, will from that moment feel an interest in the disease, which will not be diminished by its rarity, and he will be fortunate if his interest is not attended by dread.

The fact that tetanus is far more frequent in tropical climates, and that it results oftener from wounds received in war than those in civil life, gives added interest to its study to us as Americans in view of the fact that we are even now engaged in the conquest of Cuba under the heat of the tropical sun.

Almost the only result of all the investigation which has been devoted to tetanus has been an increase in our knowledge of prophylaxis, and this fact doubtless accounts for the rarity of the disease in civilized communities at present. This prophylaxis has not resulted, however, from efforts directed especially to the prevention of tetanus but has resulted from the antiseptic method, primarily directed against the bacteria of suppuration, and incidentally resulting in the expulsion or prevention of growth of the tetanus bacilli in wounds.

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[1] Read before the Massachusetts Medical Society, June 7, 1898.

As to the treatment of the fully developed disease, however, until late years all our study and effort have failed to do more than mitigate the symptoms, while they have not diminished the mortality. In the hands of the most experienced clinicians and of tyros and quacks the great majority of the acute cases have continued to die, and a small majority of the slowly developing or chronic cases to get well — no effective specific treatment having been discovered.

During the past few years, however, since the discovery by Kitasato of the prophylactic and therapeutic value of the antitoxic serum of tetanus in animals, a new hope has been held out to us that the much needed specific remedy for this disease in man might be soon elaborated. The entire success of the antitoxic treatment of diphtheria and the enormous saving of human life which has resulted therefrom have fostered the hope that in tetanus the results might prove equally brilliant. Various antitetanic serums have now been employed in the treatment of tetanus over a term of seven years. Have the results shown that an effective agent against the disease has been provided or not? Is the antitetanic serum to be relied upon in the treatment of tetanus at all, and if employed is it to be used to the exclusion of, or in conjunction with, the older methods? To answer these questions as far as is possible in the present state of our knowledge is the chief aim of this paper.

To decide as to the value of the antitoxin treatment by the comparison of statistics is even more difficult in tetanus than in any other disease. The individual experiences of any one man, or even of any single institution, within the few years that the antitoxin has been available for use, are too small to render possible such a comparison on a large scale of statistics as proved of such great value in establishing the position of the diphtheria antitoxin. Then the variability in the strength of the preparations employed, the great difficulty of determining the strength of almost any preparation, and the difficulty of deciding upon the dose which should be administered in any given case — all contribute to render the statistics of little value. In regard to this last point, I think it can be demonstrated that in the vast majority of reported cases in which the serum has been employed it has been given in absurdly insufficient doses.

The problem of dosage in the antitoxin treatment of tetanus is complicated at the very start by certain very stubborn properties of the tetanus toxin. The first and perhaps the most important of these is the fact demonstrated by Dönitz in rabbits, and by Nocard in horses, that the amount of antitoxin necessary to neutralize the tetanus toxin in the body grows enormously with the amount of time which has elapsed between the introduction of the toxin and the antitoxic serum. If an hour has elapsed between the administration of a fatal dose of toxin and that of the antitoxic serum, twenty-four times as much serum will be necessary to prevent the death of the rabbit as would have been required if the toxin and antitoxin had been introduced at the same time.

Nocard found in horses that the intravenous injection of large doses of antitoxin is sufficient to prevent the death of horses poisoned by the toxin, if the remedy was not given till after the appearance of the prodromal symptoms of tetanus. An injection twenty-four hours before the appearance of the symptoms was not sufficient — in order to save the life of the animal it was necessary to make the injection at least forty-eight hours before the prodomal symptoms appeared.

A small dose of the antitoxin is sufficient to prevent tetanus in horses if given a very short time after the animal has received a dose of toxin which is invariably fatal to control animals. The later the injection the larger the dose required, and the more unfavorable the probable results.

The explanation given by Dönitz for the large increase in the dosage of antitoxin made necessary by the lapse of time after inoculation with the poison is that the moment the tetanus poison enters the blood it begins to enter into combination with the tissues; that as time elapses this combination becomes firmer, and accordingly, increasingly large doses of the antitoxin are necessary to free the antitoxin from the combination and neutralize it.

In whatever way we attempt to explain it, the fact that in horses by the time the symptoms have developed it is too late to hope to save the life of the animal by antitoxin is a stubborn one to an advocate of the curative power of the serum in fully developed tetanus. Fortunately, however, for our hopes in regard to the antitoxin treatment in man, we find that we are dealing with somewhat different conditions. The appearance of tetanic symptoms, which is the very first possible moment at which we can begin the treatment of the disease, is by no means the signal that a fatal dose of toxin has been absorbed. The inoculation in human tetanus takes place by the introduction of the spores into a wound, under conditions favorable to their growth. We have no way of mathematically estimating the amount of toxin which has been absorbed at the time the symptoms develop, but we have plenty of evidence to show that it is not always a fatal amount, and that in all probability it varies greatly. If in human tetanus the development of the symptoms signalized the absorption of a fatal dose of toxin, the mortality of the disease would be 100 per cent. instead of about 60.

A very brief study of the clinical histories of tetanus cases will indicate that in certain cases, probably those in which large numbers of the bacilli are introduced, and in which the local and constitutional conditions are favorable to their rapid development, the disease comes on soon after inoculation, develops rapidly, tremendous poisoning of the system takes place, the symptoms are severe and unremitting, and death generally ensues.

In another class of cases the symptoms come on late and progress slowly, owing to the small number and slow multiplication of the bacilli and gradual absorption of the toxin, and we know from statistical evidence that in this milder class of cases the death has been only about 40 per cent., as compared with 80 to 90 per cent. in the acute cases.

A long period of incubation, however, does not always mean a mild or chronic case of tetanus. It is reasonable to suppose that the bacilli introduced into a wound may remain latent, or that though they multiply rapidly, the conditions for absorption of the toxin may be unfavorable. At a later period, perhaps owing to disturbance of the wound or other cause, they may invade a larger or more absorbing area of tissue, vast amounts of the toxin may be discharged into the blood, and a rapidly fatal, acute tetanus may result. Such cases are properly classified as "acute," rather than "chronic" cases, whereas a classification based merely on the length of the incubation period would place them among the "chronic" or mild cases; the rapidity of the course of the disease and the severity of the symptoms should be considered in the classification of tetanus cases as well as the length of the incubation period.

The incubation period and rapidity of onset varying thus, in case of the usual method of infection by spores or bacilli introduced on foreign matter into wounds, we would expect a variation in the results of antitoxic treatment. This variation has been found by Dönitz and Knorr to hold true in the case of guinea-pigs. Dönitz found that of six guinea-pigs inoculated by splinters of wood bearing tetanus spores, four showed symptoms forty-five hours after inoculation and two, fifty-three hours. All were given five cubic centimetres of antitoxin (ten-per-cent. solution) and three of the four died.

In order to estimate the possible value of the antitoxic serum, we must briefly summarize the statistics of the treatment up to the present time, and analyze them, as far as possible, according to the efficiency of the preparation, the dosage, and the period of the disease at which the treatment was begun. In order to arrive at any approximation to the truth, a severe method of criticism must be adopted, such as that of Kanthack, which was adopted by Lambert in his excellent article on the subject, published in the *New York Medical Journal*, June 5, 1897.

His estimate of the mortality of tetanus previous to the antitoxin treatment was about 60 per cent. for all cases — 80 per cent. for the acute, and 40 per cent. for the chronic. He had collected up to May, 1897, 114 cases treated by antitoxic serum, with a mortality of 40.35 per cent. Six cases being thrown out for lack of sufficient data, we have left 47 acute cases with 35 deaths, a mortality of 74.46 per cent.; of the chronic type, 61 cases with 10 deaths, a mortality of 16.39 per cent.

Excluding cases which died of intercurrent diseases within twenty-four hours after treatment was begun, and also all mild cases which did not receive treatment till the 10th or 15th day of the disease, we have left 31 acute cases with 19 deaths, or 61.2 per cent. mortality; and in the chronic cases, 40 cases with 38 recoveries and two deaths, a mortality of five per cent. This will leave a total mortality of 29.57 per cent. in 71 cases.

From the literature of the subject during the year which has elapsed since Lambert's article appeared, I have been able to collect and analyze 43 cases, and to add to these five cases personally communicated by Lambert, treated with the New York State Board of Health antitoxin, and five cases treated with the Massachusetts State Board of Health antitoxin — two at the Boston City Hospital (previously reported by the writer), two recently reported by Dr. Homans (*Boston Medical and Surgical Journal*, June 2, 1898), and one acute case treated with antitoxin at the Boston City Hospital, by Dr. Abner Post — making 53 cases in all.

Of these, 33 recovered and 20 died, a total mortality of 37.5 per cent.

They may be divided according to the criteria given above into 29 chronic, of which four died, a mortality of 13.9 per cent.; and 24 acute, of which 16 died, a mortality of 66⅔ per cent. Now excluding cases which for the reasons given above cannot be fairly reckoned, we find we must omit of the chronic cases one which died and seven which recovered, leaving 21 cases with three deaths, or 19 per cent. Of the acute cases, we must exclude one case which recovered and five cases which died, leaving 18 cases with 11 deaths, or 61.1 per cent, This gives of selected cases 39 with 14 deaths, or 35.8 per cent., as compared with Lambert's 29.57 per cent.

Adding my selected cases (39) to Lambert's (71), we get a total of 110 cases, with 38 deaths, or a mortality of 34.5 per cent., an improvement on the average estimated mortality of 60 per cent. without antitoxin treatment.

Adding my unselected cases (53) to Lambert's (114), we have a total of 167 cases with 54 deaths, or about 39.5 per cent. mortality.

Against the value of these statistics may be alleged the fact that possibly more successful than unsuccessful cases have been reported; and that it may be questioned whether it is right to throw out acute cases dying within twenty-four hours of the beginning of treatment. These rapidly progressing cases are included in the pre-antitoxin statistics, which we use for comparison. Unless the antitoxin can in these acute cases neutralize enough of the toxin within twenty-four hours to save the patient, it is of no value in their treatment. It is questionable to exclude cases which certainly seem of importance in deciding the question of the value of the treatment. If these cases had been included, five fatal acute cases would have been added to my list, and have sensibly increased the acute mortality.

According to these computations, although the statistics collected by the writer have been somewhat worse than Lambert's, we find that the cases treated with antitoxin have shown a mortality about 20 to 25 per cent. less than the computed average mortality of 60 per cent. in cases not treated by serum.

In view, however, of the difficulty of estimating the previous mortality, and the probable unsoundness of our estimate, we must call to our aid other criteria for judging the results of the treatment. The next question which we should ask for this purpose is: Has any definite amelioration of the symptoms followed the administration of the antitoxic serum?

We are compelled to answer that in the majority of reported cases no evidence of relief of symptoms, following immediately or early upon the injections, was noted; and, in fact, we find in only seven of the 53 cases a distinct mention of relief of symptoms following the injections. In a few cases increase of symptoms is stated to have followed the injections.

In the cases which recovered under the treatment, although naturally a rapid or gradual improvement took place, it could not in most of the reports be connected directly with the injections.

Dangerous results which could be ascribed to the serum I have not seen reported. Many of the cases have grown worse, and certain have died soon after the serum injections, but in a disease which progresses so rapidly as tetanus, and is so capricious in the matter of relapses and recrudescences, it is impossible fairly to attribute these instances to the serum and not to the disease.

A review of the results of serum treatment up to date, then, shows by statistics, for the fallibility of which many reasons may be alleged, a probable moderate diminution in the mortality rate, while marked relief of symptoms cannot be shown to have been a result of its use. On the other hand, it cannot be proven to have done any harm, and in fact the bulk of evidence goes to show that it is harmless.

Has it demonstrated itself worthy of further trial? We have seen that in the hands of many physicians, using many preparations, so far as we can judge from statistical evidence, the mortality has been slightly decreased under its use. Has the application of the treatment been so intelligent and efficient as to enable us to say that it has had a fair trial? Have the preparations employed been of sufficient strength, and have they been employed in sufficient doses to achieve adequate results? The answer must be an emphatic negative.

The preparations used have been of varying and unknown strength, and even in cases where reliable preparations have been used the dosage has been insufficient. Excellent authorities have miscalculated the strength of antitoxic serums. Lambert, as pointed out by Dr. Smith in his article on "Toxin and Antitoxin of Tetanus," has estimated the strength of the serum produced by the New York State Board of Health at 40 to 70 times its actual strength, and made corresponding deductions as to the dose. The dose proposed by Lambert has been shown to contain from 40 to 60 antitoxic units, instead of 8,000,000, as he estimated. Under such conditions it becomes especially difficult to determine what dose of a given preparation to employ, for it is evident that strength of the serum must be known in order to determine, as far as possible, how much will be needed to offer any hope of success.

The strength of tetanus antitoxic serum is estimated in "units," so called, of antitoxin. What is an antitoxic unit? It has been defined by Behring and Knorr as the amount of antitoxin which will neutralize 100,000 minimum fatal doses of toxin in a 250-gramme guinea-pig when injected at the same time with the toxin. A man weighing 100 pounds is about 180 times the size of a 250-gramme guinea-pig. Therefore, provided the minimum-fatal is the same per gramme of body weight, it will require 180 units to protect the man, if it is given at the same time as the toxin.

But in the treatment of tetanus in rabbits and horses we have already alluded to the enormous increase in the dose made necessary by the lapse of time since the injection. Behring has stated that not less than 500 units should be injected as the initial dose. Probably the initial dose should be even higher than this, and in the end it may prove a mechanical impossibility to inject enough serum to save an acute case.

With regard to the Massachusetts State Board of Health serum, at the time it was first put on the market last spring it contained one-half to one unit per cubic centimetre, according to Dr. Smith's estimate. Therefore, in order to adminster 500 units, we should have to give as the initial dose at least 500 cubic centimetres. It will not suffice to give this amount in divided doses in twenty-four hours. In order to afford any promise of neutralizing the toxin in the blood, this large dose must be thrown at once directly into a vein. Experimenters have shown again and again the necessity of throwing the antitoxin into a vein in order to get anything like a quick or definite result, and yet in only a very small number of cases has this method been adopted in practice. For effective treatment, an antitoxin somewhat stronger than that furnished by the State Board of Health would be desirable, as an initial dose of 500 cubic centimetres, or about a pint, is certainly inconveniently large and would necessitate a severe drain upon the supply. Dr. Smith last winter stated that with the continued treatment of the horses with toxin and eventual drying up of the serum, a stronger antitoxin would become available in this state, and I have no doubt that by this time it has become possible to supply a stronger serum.

Of the serum furnished by the New York State Board of Health, at the time Lambert's paper was written, about 25 cubic centimetres, or eight ounces, would be required as the initial dose, according to Behring's standard. Now in what doses have the various preparations been given? In single doses, generally of from 10 to 20 cubic centimetres; the largest single doses which have been given have been 100 cubic centimetres of the State Board of Health in the second case treated at the City Hospital, and 120 cubic centimetres in Dr. Homans's case. In both of these cases the initial dose was smaller, in one 40 cubic centimetres and in the other 60 cubic centimetres.

The list of cases treated by the Massachusetts State Board of Health serum now consists of four acute cases, all of which died, and one of moderate severity, which recovered.

Dr. Lambert writes me that in the last year he has had four acute cases die under treatment with the New York State Board of Health antitoxin, and one moderately severe case get well, which is exactly the same record as in Massachusetts.

Has any antitoxin been produced of sufficient strength to promise practical results in the cure of manifest tetanus?

Behring's dried preparation, containing 100 units in one gramme of powder, which may be dissolved and injected, is the strongest yet put upon the market. It is supplied in five-gramme powders, which contain, therefore, 500 units.

Behring's liquid serum, which he supplied before the dried preparation was put upon the market, contained 25 units in five cubic centimetres, so that of this preparation 100 cubic centimetres would contain 500 units. Have the results with Behring's stronger serum, which we must concede has been provided in most effective form for suitable dosage, shown an improvement over those of other antitoxins? (*München. med. Woch.*, 1897, xliv, 880.)

Engelmann, in August, 1897, had collected five cases treated with Behring's dried serum, three of moderate severity and one severe case had recovered, and one very severe case had died. To these may be added an acute fatal case reported by Suter, and a mild case which recovered, by the same author. With regard to Behring's liquid serum, five units to the cubic centimetre, Englemann had collected thirteen cases, of which seven had recovered and six died.

The strength of Tizzoni's serum which was one of the first to be dispensed, and the most extensively employed in Europe, I have been unable to ascertain.

Engelmann had collected 36 cases treated by this serum with only eight deaths. Only five cases had shown no result from the injections. Englemann had employed it in doses of from 12 to 30 c. c., and had had personally three successful cases of medium intensity.

In estimating the value of antitoxin in tetanus, another question remains to be answered, namely, whether the fact that sedatives have been employed in conjunction with antitoxin would affect the value of statistics.

In studying reports of cases, we note comparatively few in which the tetanus antitoxin has been used alone. It has usually been combined with a free use of the old symptomatic treatment of sedatives,—chloral, bromide, morphine, and where necessary, chloroform inhalations. This fact in no wise affects the validity of our estimate of the antitoxin treatment, for these remedies are purely symptomatic, and do not attempt, as does the antitoxin, to directly attack the disease. They have no prejudicial effect upon the antitoxin treatment, and in view of the fact that the latter rarely controls the spasms, we should not be justified in compelling our patients to do without their assistance, even in cases where it is employed.

The promotion of free diuresis by every possible method should also be practised in the treatment of tetanus, since it has been demonstrated that the kidneys are the principal channel for the elimination of the toxins.

IMMUNIZATION BY SERUM.

If any one fact with regard to the tetanus antitoxin has been demonstrated with absolute unanimity by investigators, it is that immunization is possible with comparatively small doses. Nocard, who has demonstrated the futility of the antitoxin treatment in veterinary practice, has had entirely favorable results with preventive inoculations.

It would not be by any means an unwise precaution to employ a prophylactic injection of 10 to 20 cubic centimetres of tetanus antitoxin in cases presenting lacerated and dirty wounds, which have perhaps first come under observation several days after their infliction, or in which, though seen early, thorough primary disinfection is at first impracticable. This will hold true in particular in tropical climates, where tetanus is known to be more frequent, and in the case of wounds received in war, which are especially liable to present favorable conditions for tetanus infection, and in which facilities for thorough primary disinfection are frequently not at hand. An adequate supply of antitetanic serum might well be included in the medical stores to be furnished to the United States army in Cuba.

PROPHYLACTIC TREATMENT OF THE INFECTIVE FOCUS.

The means ordinarily employed by surgeons in the treatment of dirty, lacerated and punctured wounds are directed primarily to the destruction or washing out of the ordinary pathogenic bacteria, and to the removal of dead or vitally injured tissue, and to securing thorough drainage. The rarity of the occurrence of tetanus in this vicinity is sufficient evidence that these measures are under the ordinary conditions efficient for the prophylaxis of this disease. Under certain conditions, however, we should not lose sight of the fact that the ordinary surgical antiseptics are not the most effective in their action upon tetanus bacilli. Solutions of bichloride of mercury, 1–1000, require three hours' contact to destroy tetanus spores, and a five-per-cent. solution of carbolic acid requires fifteen hours' contact. The addition of one-half per cent. of hydrochloric acid to the 1–1000 bichloride solution kills the spores in 30 minutes.

A 1–1000 solution of silver nitrate destroys the spores in five minutes. Bichloride of mercury is entirely inactive against the tetanus toxin. The iodine preparations, iodine trichloride, Gram's and Lugol's solutions, are the most effective agents we have, acting both upon the bacilli and the toxin, and should be freely used in wounds suspected of infection with tetanus, since besides being antiseptic they destroy the toxin already found.

CONCLUSIONS.

(1) Although the statistics of the antitoxin treatment of tetanus up to the present time apparently show a diminution in the mortality under this treatment, they may be legitimately criticised as on the whole insufficient in total number, in definiteness of reports, and as probably not including all fatal cases treated.

(2) The more carefully we study them the less evidence do we find that the antitoxin treatment, and not the mild course of the disease, was responsible for the favorable course in the cases which have recovered. There is no satisfactory evidence that harm has resulted from the injections.

(3) There is a distinct probability that in the great majority of the total number of cases treated the dose of antitoxin, especially the all-important initial dose, has been too small to have any possible effect upon the disease.

(4) The treatment in view of the present untractability of the disease demands further trial.

(5) There are certain means by which we can hope to make it more effective, and these include earnest efforts on the part of those engaged in the production of serum to secure a stronger product, and on the part of those who employ it in treatment to give a sufficiently large initial dose, and to give it at the earliest possible moment. The serum should be injected directly into the blood stream.

(6) The strength of the antitoxic preparations furnished by the Massachusetts and the New York Boards of Health, when first supplied, was so slight as to render it necessary to employ 500 cubic centimetres as the initial dose.

(7) A valuable field for the use of antitoxin lies in its employment for immunizing purposes.

(8) The treatment of tetanus, according to our present knowledge, should consist of:

a. Thorough disinfection of the primary focus by mechanical means, including, if necessary and practicable, amputation.

b. The thorough local employment of such chemical antiseptics as have been shown to destroy both the bacilli and the toxin.

c. Symptomatic treatment by sedatives, etc.

d. Thorough diuresis.

e. Intravenous injection of an amount of antitoxic serum which shall contain at least 500 antitoxic units at the earliest possible moment.

BIBLIOGRAPHY.

Suter. Corrbl. für Schweizer Aertzte, Basel, 1897, xxvii, 521–526. Three cases.
Beamish. British Medical Journal, London, 1897, ii, 907.
Friedmann. Journal of American Medical Association, Chicago, 1897, xxix, 727.
Harcourt. Occidental Medical Times, Sacramento, 1897, xi, 530–534.
Kortmann. Deutscher med. Woch., 1897, xxiii. Therap. Beil., 70.
Steiner. Werner klin. Woch., 1897, x, 803–808.
Tizzoni. Gazz. d. Osp., Milano, 1897, xviii, 1215-1223.
Blake. Lancet, London, 1897, ii, 1114.
Lambert. New York Medical Journal, June 5, 1897.
Rose. Der Starrkrampf beim Menschen, Stuttgart, 1897.
Smith. Boston Medical and Surgical Journal, March 31, 1898.
Lund. Ibid.
Homans. Ibid., June 2, 1898.
Owens. Journal of American Medical Association, 1897, xxix, 1004–1007.
Rudis Jacinsky. New York Medical Journal, 1897, lxvi, 66.
Bonet. Comp. Rend. de Soc. de Biol., Paris, 1897, 108, iv, 974–976. Also, Gazz. Hebd. de Méd., Paris, 1897, n.s. ii, 1119.
Burke. Pediatrics, 1897, iv, 545.
McWatt. British Medical Journal, London, 1897, ii, 1572.
Mason. Public Health Report, U. S. Marine-Hospital Surgeon, Washington, 1897, xii, 119.
Smart. Lancet, London, 1897, ii, 1315.
Smith. Ibid, 1583.
Weischer. Münch. med. Woch., 1897, xliv, 1281–1286.
Brooks. Lancet, London, 1898, i, 98.
Croley. Medical Press and Circular, London, 1898, n.s. lxv, 25–28.
Evans. Lancet, London, 1897, ii, 1452.
Goodrich. Brooklyn Medical Journal, 1898, xii, 15–22.
Hatch. Indiana Medical Gazette, 1897, xxxii, 441–443.
Willett. British Medical Journal, London, 1898, i, 19.
Aldrich. International Medical Magazine, Philadelphia, 1898, vii, 8.
Arnold. Deutscher med. Woch., 1898, xxiv, 61.
Bocker. Deutscher med. Ztg., Berl., 1898, xix, 21, 31.
Chantemesse. Presse Méd., Paris, 1898, i, annexes 44–47.
Packard. Annals of Gynecology and Pediatrics, Boston, 1897–98, xi, 385–387.
Patteson. Dublin Journal of Medical Sciences, 1898, cv. 101–108.
Wasserman. Berl. klin. Woch., 1898, xxxv, 5.
Marie. Journ. de l'Inst. Pasteur, Paris, 1898, xii, 91–95.
Mœller. Münch. med. Woch., 1898, xlv, 262.
Porter. Annals of Surgery, Philadelphia, 1898, xxvii, 228–237.
Blumenthal. Zeitschr. f. klin. Med., Berl., 1897, xxxiii, 325–334.
Gordon. Lancet, London, 1897, i, 1339.
Thornton, J. F. Southwest Medical Record, Houston, 1897, ii, 82–84.
Chalmers. Lancet, London, 1897, i, 1539.
Teichmann. Deutscher med. Woch., 1897, xxiii. Therap. Beil., 37.
Wood. International Medical Magazine, Philadelphia, 1897–98, vi, 342.
Dönitz. Deutscher med. Woch., 1897, xxxiii, 428–430.
Patterson. University Medical Magazine, Philadelphia, 1896–97, ix, 715.
Asam. Münch. med. Woch., 1897, xliv, 886.
Engelmann. Münch. med. Woch., 1897, xliv, 880, 915, 938.
Goldsmith. British Medical Journal, London, 1897, ii, 469.
Nocard. Gaz. Méd. de Par., 1897, 108, 1404–1408.
Baker. Indian Medical Record, Calcutta, 1897, xii, 180.
Blaker. Lancet, London, 1897, i, 1024.
Brunner. Zeitschr. für klin. Med., Berl., 1897, xxxii, 207–214.
Höfling. Deutscher. med. Woch., 1897, xxiii. Therap. Beilag.
Klemm. Deutscher Zeitschr. für Chir., Leipzic, 1896–97, xliv, 455–461.
Wendling. Wiener klin. Woch., 1897, x, 266.

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SIR ASTLEY COOPER, BART.[1]

An Estimate of his Character and Career.

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(Concluded from No. 6, p. 130.)

To learn for himself and to tell others what he knew were the first and ever present objects of Astley Cooper. He was the first English surgeon to break away utterly from empiricism and quackery, and to lay down the sound ethical principles which we know. John Hunter had shown the way, but in his practice had fallen far short of the high standard which Cooper always maintained. Cooper was but eighteen years old when he began to teach anatomy. He was a young student; clever, assiduous, enthusiastic, and his fellows sought his advice in their dissections. His popularity constantly increased and before long he had unwittingly drawn most of the students from the teaching of the regular demonstrator. Dislike and jealousy naturally followed, and continued for some years. At length, fortunately, the regular demonstrator retired; he was a man very much Cooper's senior, and at the age of twenty-one the young surgeon was appointed demonstrator at St. Thomas's Hospital. His first act was revolutionary. The sciences of anatomy and surgery had always gone hand in hand up to this time, but Cooper had the wisdom to see that a broad and sound knowledge of the former must precede the study of the latter. In spite of great opposition he carried out his plan of separating the two courses. He had now been five years a student, and the next three years, preparatory to his starting in practice, he devoted to teaching. Long afterwards he wrote of himself:

"My industry, at this time, may be gathered from the following circumstances:

"I went to the hospital before breakfast to dissect for lecture. I demonstrated to the students before lecture. I injected their subjects. I lectured from two o'clock until half-past three. In the evening, three times per week, I lectured on surgery. I attended to the interesting cases in the hospital, making notes of them, and in this latter practice I always persevered."

Cooper's method of teaching showed from the outset his facility and adaptability; his readiness to continue what was approved by experience or to depart radically from old and dull routine. On assuming his lectureship his instant resolve was to inculcate the doctrines of Hunter — by which he meant the study of normal function and pathological change before going on to speak of diagnosis and treatment. At the outset he found himself in deep waters. The students of the day were not ready for that style of thing. The attendance, which was voluntary, immediately fell off; and he felt that his new plan was in some way at fault. At once he changed his method but not his purpose, and organized that form of combined didactic and clinical lecture which is still most popular in our schools. He has left us copious reports of his teaching, and to read these is still a novelty and a delight. His wide experience, his teeming note-books, his varied collections and his phenomenal memory combined to furnish a fascinating discourse; and his lectures, carefully planned and accurately carried out, supplied at once variety, anecdote, instruction and conviction. His statements are short, sound and lucid, his cases graphic and to the point.

As the years went by his material multiplied; at the age of thirty-two he was appointed surgeon to Guy's Hospital, and with added experience and power he came to be known far and wide as the greatest surgical teacher in Europe. His students came from England, Germany, Italy, Switzerland, France, Denmark, Sweden, Scotland, Ireland, America, until in his later life, when he went travelling about the world, he found an old friend in every village and counted his pupils by thousands. This was a great power, and needs no comment. Best known among those who came under his influence were Aston Key, Bransby Cooper, Benjamin Travers, John Morgan, John Collins Warren, John Hilton, Edward Cock, Alfred Poland and Frederick LeGros Clark.

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[1] Read before the Historical Club of Johns Hopkins Hospital, May 9, 1898.

The fine portrait, by Sir Thomas Lawrence, shows us Sir Astley Cooper in the prime of life; as such a man he is best known to us, and as such he was in the very height of his life-work. His practice at that time was enormous, and he saw more patients than would be possible for any one man in our elaborate days. After his morning dissections and breakfast he saw his gratuitous patients first, and then from nine o'clock until one came the stream of regular patients to his consulting-room. Here he did every variety of practice — from advising boarding-school girls about their diet to operations of considerable magnitude. Quick and sudden cutting was common with him. He would open a felon, excise a lipoma or amputate a finger with hardly so much as a *by your leave.*

Promptly at one o'clock, regardless of the fact that his house was still crowded with patients, he would jump into his carriage and drive rapidly to the hospital. There he always made the ward visit at once, accompanied by a throng of students. His manner towards hospital patients was always most kindly and considerate, and he used to say that he owed half his success in practice to his invariable rule of impartial courtesy towards rich and poor. At two o'clock promptly he began his daily clinical lecture, which, combined with operating, lasted from one to two hours. He then left the hospital to make his round of private calls, and arrived at home for dinner about seven o'clock. After dinner came a half-hour's nap, then the evening calls and home to bed between twelve and two.

He insisted strongly upon the value of a certain amount of general medical practice, as he felt that no surgeon who narrowed his attention to the immediate and obvious lesion under inspection could consider properly the broad bearings of surgical disease upon the individual. He always stated in his lectures that the mere operation was a small detail in surgical therapeutics; that general conditions of health required the most careful investigation — for which only a man in large general practice was competent, and that the care of the sick after operation demanded the widest experience.

Astley Cooper did not jump at once into practice. His beginnings were small enough and he met with the rebuffs and insolence with which all young professional men are familiar. Here is a schedule of his early receipts: first year *5l. 5s.*; second year, *26l.*; third year *64l.*; fourth year, *96l.*; fifth year *100l.*; sixth year, *200l.*; seventh year, *400l.*; eighth year, *610l.*; ninth year (the year he was appointed surgeon to Guy's Hospital) 1,100*l*. This was the year 1800 and he was thirty-two years old.

In those days, as is well known, surgeons did not make stated charges, but received the fees proffered them. In 1813 Cooper received the fee of £1,000 from a patient for the operation of lithotomy. This was the largest fee he ever received. The year 1815, when he was forty-seven years old, saw him at his busiest. After that year he moved to another quarter of London and used to take longer and more frequent holidays at Gadesbridge, his country place. In 1815 his bank book shows his professional income to have been twenty-one thousand pounds or more than one hundred thousand dollars — a far larger sum at the beginning of the century than it is now. Be it remembered, too, that this income represented the accumulation of a vast number of small fees, and that it was not derived from a limited number of high-priced operations, such as to-day constitute the practice of surgeons with large incomes.

Having reached the height of his professional career, appointments and honors were showered upon him from many quarters. He was made sergeant-surgeon to two kings, George IV and William IV; he was decorated by foreign monarchs, he was made honorary member of many famous scientific bodies and given the highest rewards of the profession at home by his contemporaries.

George IV made him a baronet, not, as Billings states, because he removed a wen from the royal head — a perversion of fact. He was made surgeon to the King and performed the trivial operation because he was the first surgeon in Europe; and because of his high professional standing he received the rank.

It is refreshing to read Cooper's estimate of himself and his career. He was a great journal writer. Here are the ingenuous remarks which he once made in his old age; they were written in Paris: "I then went to the *Soirée de l'Institut*, and this I feel to be one of the proudest days of my life; being in a foreign country, among strangers and received with so much honor. When I look back upon myself, as the son of a country clergyman, then made a lecturer on Anatomy and Surgery, F.R.S., Surgeon to Guy's Hospital, Surgeon to the King, Sergeant-Surgeon to the King, Fellow of most of the societies of Europe, Trustee of the College and an Examiner, a member of the Legion of Honor, etc., I have indeed reason to be thankful for the blessings I have enjoyed; and when I add to these my title and fortune I feel how much my success has exceeded my deserts."

"Young medical men," said Sir Astley Cooper, "find it so much easier a task to speculate than to observe; they are apt to be pleased with some sweeping theory, which saves them the trouble of observing the processes of nature." And so, as I have said, he was wont to investigate all things for himself. This habit produced in him one unfortunate effect. He seldom read. He acquired a vast amount of contemporary information from discussions with his colleagues, but he was not a reader. He wrote. He was continually talking, lecturing, writing: surgical essays, collected lectures, monographs, monumental works. From the time he joined the Physical Society as a young student, until his death, he was constantly writing and talking and rubbing against able men. When he did a new or clever operation he talked about it, and when he had concluded a series of investigations he wrote about them. He is famous for his work on aneurisms. In 1809 he tied successfully the carotid for aneurism, after having first assured himself of the safety of the operation by vivisection experiments on dogs. The case was reported in the *Transactions* of the Medical and Chirurgical Society. Six years later in 1816 he performed the operation for which he is most celebrated — ligature of the aorta for aneurism. This, too, was proceded by experiments on dogs, which proved its feasibility. The patient was a middle-aged laboring man in the Guy's Hospital wards. The aneurism was of enormous size, occupying the left common iliac and some portion of the abdominal aorta. The man was extremely feeble and exsanguinated from repeated slight hemorrhages. The operation was done at night, of course without anesthetics, intra-peritoneally. The man survived for forty hours.

I find eight recorded cases of this operation — all fatal — but all before the days of clean surgery. Sir Astley's original case shows the patient surviving longer than did any ot his successors. In 1804 he published his well-known "Treatise on Hernia"; in 1837 the "Treatise on Dislocations and on Fractures of the Joints"; and in 1840 that "On the Anatomy of the Breast." These three great works were for a long time classics, and represented a vast amount of dissection and investigation. They were published in handsome form, but were sold cheaply so as to be within easy reach of the professional public; and to their author the pecuniary return was less than nothing. During the thirty-six years between the first and last of these great works he published many monographs and volumes of collected lectures — of great value and interest to-day. Here is what the *Medico-Chirurgical Review* says of the second work, that on "Fractures." . . . "Such a mass of important practical material was never, we believe, before laid open to the public; and Sir Astley Cooper's work, when the author has moulded in the dust, will continue to exercise that influence on the surgical profession at large which he has so long exercised within the sphere of his personal acquaintance and practice."

He says of himself: "My objects in life have been three-fold: First, to learn; secondly, to practice; thirdly, to publish to the world." . . .

Like most greatly successful men, Astley Cooper grew somewhat self-assertive and arrogant as he advanced in life.

In 1825 he resigned his lectureship at St. Thomas's on account of some impairment of health. Before this resignation he supposed he understood that his associate, Mr. Key, was to succeed him. The committee saw fit, however, after accepting the resignation, to appoint a Mr. South. Sir Astley, who had a very hot temper, after attempting to withdraw his resignation, and not being permitted to do so, decided to establish an opposition school of medicine at Guy's Hospital, this largely through the good offices of a friendly treasurer, Mr. Harrison. The plan succeeded beyond all anticipation; new buildings were erected and appointments made according to his desire.

Out of this affair grew a quarrel which stopped short of a duel only. Dr. Cholmeley, a jealous person, and a physician to Guy's, made offensive remarks about Sir Astley, charging him with self-interested motives, and this in a public lecture-room. Sir Astley heard of it, and sent a demand for an apology or a hostile meeting. Eventually Dr. Cholmeley apologized, and a public retraction was made.

The School of Guy's Hospital, thus established by Cooper, continued to flourish as we know it to-day. It was ever a favorite interest of his, and on his death he left it a legacy of £4,000; the interest of which was to be paid out annually as a prize for an essay on some medical or surgical subject. This prize was open to all competitors, and the members of the hospital staff were appointed judges.

The ingenuous and childlike self-approval of many a genius is refreshing. Sir Astley Cooper was one of these pleasant persons. There is nothing offensive in his egotism. He was appointed lecturer on anatomy to Surgeons' Hall when twenty-five years old, and this is what he wrote of the transaction in his memoirs.

"I was appointed Professor of Anatomy to the Company of Surgeons, and gave lectures on executed persons, which were received with great *éclat*, and I became very popular as a lecturer. The theatre was constantly crowded and the applause excessive. My uncle was quite delighted and Mr. Cline complimentary, which he seldom was."

In another place, when writing of his lectures at Guy's Hospital, he says:

"My lectures were highly esteemed, but my operations were less thought of, . . . still I rose; for —— and ——, of Guy's, were indifferent surgeons, —— and ——, surgeons of St. Thomas's were still inferior; although excellent, Mr. Cline was very cautious never to attempt but those things which he was sure to accomplish. He was slow, cautious and successful. I was sometimes great, sometimes in difficulties from venturing too much."

Then he goes on frankly to criticise his colleagues. "Abernethy was a man of talent, with what the king would call 'a potato in his head.'"

"Sir —— —— was vain, ignorant and puzzle-headed, excessively envious of others, but he was so great a fool that he was not dangerous."

"Mr. Norris . . . was very ignorant of anatomy."

"Sir —— —— had genius but no judgment."

'Mr. —— was a tolerable anatomist but quite devoid of scientific views."

And of himself, he says: "Sir Astley Cooper was a good anatomist, but never was a good operator where delicacy was required.

"Quickness was his forte . . . his prognosis good. In judgment he was far inferior to Mr. Cline in all the affairs of life. His imagination was vivid and always ready to run away with him if he did not control it.

"His principle in practice was *never* to suffer any one who consulted him to quit him without giving him satisfaction on the nature and proper treatment of his case."

Quacks and impostors flourished in those days even as in ours. Human nature will always demand the marvellous, and a hundred years of effort have not succeeded in instructing the community, though laws have been passed and pseudo-science is widespread.

One of the most exasperating tricks of the charlatans is their frequent habit of trading on great names and truths. In our time Koch and Charcot and Lister have been so afflicted. Cooper, too, was a victim. Among other impositions was what was known as "the Ashley Cooper set." The substitution of the name Ashley from Astley saved them from the law. They advertised far and wide under the semblance of the great surgeon's name and are said to have done an extensive practice.

For all these things Cooper had a contemptuous tolerance, feeling that such evils would be righted by time.

Before his great work on hernia instructed the profession, the treatment of this condition was much neglected in England, and consequently fell into the hands of the "rupture doctors," — dangerous and unscrupulous fellows, engaged in a trade analogous to that of the so-called "bone-setters" of to-day. Cooper did more than any other one man to break up the practice of these persons.

In the profession at large Sir Astley was universally popular. His great reputation, his charming presence, his cordial manner and his unfailing courtesy won hosts of friends, especially among the general practitioners. There is a story of his happening to be present at the Norwich Hospital in 1809, when a local surgeon was operating for the cure of popliteal aneurism. In the presence of the distinguished visitor the operator became confused, and though he had made his cut over Hunter's canal, he failed to find the artery. While he was fumbling about in hopeless indecision, Cooper, looking over his shoulder, said, "You have it there"; and passing his finger into the lower part of the wound disclosed the vessel. The whole thing was done so tactfully that the incompetence of the surgeon was not made to appear, though the kindly act won the respect and admiration of all present.

It was not in his professional relations alone that he was esteemed. He was held in the highest regard by all who came within the circle of his influence, and from the king down he was almost universally popular. This, too, in spite of a fierce and hasty temper which seemed only to endear him the more to its victims. He had little time for social amusements — but when he would take his ease, the club known as the Athletæ, composed mostly of professional men, was his favorite resource.

He was ever active. He hated delays. When travelling he always posted, and feed the post boys beyond all precedent for fast time.

One of his peculiarities was a terror of the sea. Though a bold and venturesome person in all the other affairs of life, a sea voyage was always a source of horror to him. He became excessively seasick, and this only added to his fears; on one occasion when making a voyage of rather unusual length for him, the combined effects of mental and physical distress threw him into a pitiable agony of delirium, amazing to those who knew his usual fortitude.

He was a very emotional man. In 1827 his wife died, and the event prostrated him with grief. He felt that all the interests of life were over for him. He fell into an acute physical decline, sold his town house, threw up his practice and other professional employments, and retired to his country place to pass his last days. Within a year of the sad event he had returned to town, taken another house, resumed practice with increased vigor, and married again. He was then sixty years old. He lived on until 1841 and died in his seventy-fourth year.

As with many other great but self-centred men, Sir Astley Cooper's estimate of others not in his own path of life was apt to be curiously erroneous. Successful men are wont to regard others only as they affect themselves; and to prefer unobtrusive or flattering mediocrity to abusive and pugnacious genius.

George IV was an agreeable and kindly patron to his sergeant-surgeon, so this is Sir Astley's estimate of the king — an extraordinary estimate to us, after the lapse of seventy years.

"The abilities of George the Fourth were of the first order. He would have made the first physician or surgeon of his time; the first lawyer, the first speaker in the House of Commons or Lords, though perhaps not the best divine. As a king he was prosperous, for he had the good sense to be led by good ministers. . . .

"The king was indolent, and therefore disposed to yield to avoid trouble; nervous, and therefore anxious to throw every onus from his own shoulders. He was the most perfect gentleman in his manners and address — possessing the finest person, with the most dignified and gracious condecension, yet excessively proud. . . .

"George the Fourth had an extraordinary memory — he recollected all that he had read or seen — and had the faculty of quickly comprehending everything. . . . He could quote the beauties of almost all the works in English literature. He was an excellent classic. He was a good historian. He spoke German and French as well as his own language. He spoke remarkably well. . . . His judgment was good. . . . He was in danger in coming back to England after his visit to Ireland, and behaved with the greatest coolness.

"The king was sometimes coarse in his conversation and anecdotes, but nobody could be more refined when he chose. He was witty. He woke early and read from six until ten. He did not in general drink much. . . ."

Listen to Thackeray's words about the same man, written thirty years after the king's death.

"To make a portrait of him at first seemed a matter of small difficulty. There is his coat, his star, his wig, his countenance simpering under it . . . and yet after reading of him in scores of volumes, hunting him through old magazines and newspapers, having him here at a ball and there at a dinner, you find you have nothing — nothing but a great *simulacrum*."

So William Thackeray; and so Sir Astley Cooper. We admit that at such work the pen is mightier than the scalpel.

But in spite of all this we must not think of Sir Astley Cooper as being a courtier. In his age he grew to have a great respect for the constituted authorities. To him a king was a king; and a lord was a lord indeed. England was the most beautiful and pleasant country under the heavens; and there were to be found the bravest and wisest men, the most lovely and virtuous women. He says so a dozen times, and we think none the less of him. The democracy of his ardent youth fell from him, as it has done from so many others; but his great work in life went on.

Always the honor and prosperity of his profession were most dear to him. Whenever he heard of a fine professional action he gloried in it, and he labored through life to elevate his calling in the eyes of men. His fellows recognized this in him, and this was the great reason for his constantly increasing popularity. To conquer shams, to foster science, to expose cant, to teach the truth, to seize the happy moment, to know real worth, to labor always for progress, — these were the great things in life to him.

And when at last, in old age, he died in harness, his ambition unquenched, and his courage firm and unfaltering to the last, the profession and the world felt that a monument in St. Paul's was but a humble tribute to the greatest surgeon of his time.

The Death of Professor Karl Freiherr von Rokitansky, of the Gratz Faculty, is recorded in the *Wiener klinische Rundschau* as having taken place on the 20th of June. The deceased was in his fifty-ninth year.

Clinical Department.

TWO CASES OF SPASMODIC TORTICOLLIS: ONE CURED, THE OTHER MUCH RELIEVED BY MECHANICAL TREATMENT.[1]

BY HERBERT J. HALL, M.D., MARBLEHEAD, MASS.

Case I. Miss R., age thirty-eight, dressmaker.

Family and previous histories negative except that when the patient was about twenty years old she is said to have had a number of "falling fits." For a year previous to the attack of torticollis she worked very steadily at the sewing-machine. In July, 1896, she first noticed slight stiffness and an occasional twitch in the muscles of the neck. The spasm soon became marked and grew worse so fast that in two weeks she was obliged to give up all work. She was treated for a while by a physician who tried sedatives without effect.

December 2, 1896. On this date, a little over five months from the time of the onset, the patient was first seen by the writer. She had been in bed several days, unable to sit in a chair or to walk about without extreme annoyance from the spasm. In recumbency there were no unnatural movements of the head, but immediately on sitting up would begin a series of rhythmic contractions of the sterno-mastoid on the right and all the posterior rotators and retractors on the left.

The head was turned with much force to the left, and was markedly retracted. The deviation from the normal would sometimes terminate with the face looking directly upward, and the chin twisted as far round as the left shoulder. It was observed during the examination that a firm grasp of the hand on the nape of the neck would greatly diminish the force of the spasm.

December 7th. The spasm was at once decreased, and is now nearly controlled by the application of a spring clamp to the back and sides of the neck. The clamp is very simple in construction and does practically what the thumb and fingers do in grasping the neck from behind. It is made of light spring steel, broader than, but otherwise similar to, the ordinary trouser-guards worn by bicyclists. There is a tail-piece running from the middle of the spring about six inches down the back. When the clothing is buttoned tightly over it, this tail-piece helps to keep the spring closely applied. A gentle pressure was thus exerted on the back and sides of the neck as far forward as the anterior borders of the sterno-mastoids. The results were best when the collar was worn at about the level of the angle of the jaw. The application of this simple apparatus instantly stopped most of the twitching, although the symptoms would at once recur upon removal of the pressure.

January 1, 1897. The apparatus has been worn constantly, but it can now be discarded for several hours a day without recurrence of the spasm. There is still some rigidity and a slight tendency to clonic spasm in the affected muscles.

February 3d. On account of his interest in these cases, the patient was sent to Dr. George L. Walton, for observation and prognosis. Dr. Walton referred the case to Dr. F. I. Proctor, who later reported astigmatism and obliquity of the axis of vision in both eyes. Glasses prescribed.

January 20, 1898. Neither clamp nor glasses have been worn for several months. Patient does a little sewing and attends to ordinary household duties without inconvenience. She has taken several long walks. There is a slight left torticollis of a fixed and painless nature due to a permanent contraction of the affected muscles. She turns her head freely in any direction. There is no retraction.

SUMMARY OF CASE I.

A severe spasmodic torticollis of five months' standing was at once relieved and has remained under control for two years by the simple expedient of spring pressure on the cervical muscles. For several weeks the spasm recurred on removal of the apparatus, but later no appliance was necessary. The affection was brought under control in spite of the existence of marked ocular defect. No drugs, no exercises, no massage or electricity, no complicated fixation apparatus were used in bringing about the desired result.

Case II. Miss F., age thirty-two, shoe-shop hand. Referred by Dr. Herbert W. Newhall, of Lynn. Family history, negative. Previous history, always reasonably well until present attack. Duration of symptoms five weeks. Gradual onset without pain. The patient has worked for five or six years in a shoe-shop, doing always the same work, which requires the constant use of a light hammer, pounding on the leather.

February 29, 1898. Physical examination showed a young woman of medium height and rather slight build. Nothing abnormal was observed except the severe spasm which kept in constant action the right sterno-mastoid and the left posterior cervical rotators. The motions of the head in this case were very similar to those observed in the preceding case, but they could not be so easily controlled by the hand. A reasonably good prognosis was given, however, and measurements were taken for a spring collar.

March 6th. The clamp has been worn one week and there is plainly an improvement, although the spasm is still severe.

Treatment continued and supplemented by a series of Delsarte movements designed to limber up all joints, and to bring about a relaxation of all the muscles of the body and especially of the muscles of the neck. Strangely enough the exercise which seemed to relax the neck most is one in which the hands are shaken violently and loosely on the relaxed wrists.

March 30th. The head can now be held straight for a brief space of time and the existing spasm is less severe. A Thomas's collar stuffed with oakum has been substituted for the clamp which, though padded and covered with chamois-skin, has caused chafing.

April 12th. There has been very decided improvement remarked by every one who sees the patient. The twitching, although it does not carry the head so far or so forcibly, is still annoying and various forms of head support have been tried without relief. The patient herself decides to go back to the collar as being of the greatest service. The patient's day has been plotted out carefully into periods of rest and exercise. New exercises have been introduced which tend to develop the entire body. She can now voluntarily relax the tense sterno-mastoid. The eyes have been examined by Dr. Cobb, of Lynn, who finds in this case also astigmatism and oblique visual axis.

May 1st. The spasmodic motions have almost wholly ceased. Neither glasses nor collar are worn constantly. She cannot turn her head beyond the middle line to the right, but it can be held very nearly front without difficulty. A slight tonic contraction of the right sterno-mastoid turns the head persistently a little to the left; there is no retraction. Much walking or over-exercise of any kind causes pain in the left shoulder. The patient has not from the first been allowed to use her eyes for reading or sewing. To-day she admits that she has read a short story, but without relapse.

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[1] Read in part at the March meeting of the Essex South Division of the Massachusetts Medical Society, and presented by title at the May Meeting of the American Orthopedic Association in Boston.

May 30th. Slight improvement from last note. The patient is very cheerful, and expects to be able to turn her head freely in any direction before long.

SUMMARY OF CASE II.

A severe case of spasmodic torticollis of five weeks' duration, somewhat relieved at once and in three months practically cured by the spring clamp supplemented by a careful system of gymnastics designed to relax as well as to develop all muscles, and especially those of the neck. Very little attention was given to the development of the muscles directly opposed to those involved in the spasm. The exercises were designed to improve the general poise and to secure good muscular control throughout the body.

GENERAL CONSIDERATIONS.

The experience of the men in this vicinity in dealing with this disease has been rather unsatisfactory. Some cases have been passed along from general practitioner to orthopedist, to neurologist, to masseur, to ophthalmologist and finally to the general surgeon, all this perhaps without improvement.

When all other means fail the general surgeon stands ready to do neurectomy on the spinal accessory and the posterior cervical branches. Even then, with all the posterior rotators and the sterno-mastoid divided, the twitching may not cease. This most persistent and annoying spasm is not accompanied by any structural changes either in the nerve trunks, or in the nerve centres.[2] It seems therefore to some extent psychic or mental.[3]

Referring presumably to complete fixation, Richardson and Walton state that "Mechanical support to the head has proved not only inefficacious but unendurable, the restraint only adding to the discomfort and tendency to increase spasm."[4] They also refer to a case temporarily benefited by massage. Drugs, electricity and nerve stretching have proved of no value.

It is certain that some cases must come to operation; nothing else will put a stop to this misguided activity, which though usually painless is so fatiguing and annoying that the patient gladly welcomes the most severe surgical measures.

The operation as practised by Dr. M. H. Richardson is very complete. The results in the cases which Dr. Richardson and Dr. Walton have seen, are certainly excellent, although a second, or even a third operation has sometimes proved necessary, as the spasm is transferred to new sets of muscles. It is this rapid transferrence, for instance, from the sterno-mastoid to the posterior rotators of the opposite side which is the worst objection to operation.

On the other hand, mechanical support is capable of a wider field than mere fixation as by the plaster helmet or a rigid head support of any kind. Dr. A. T. Cabot has one case of cure by the plaster helmet, but for the most part such treatment is absolutely unbearable. The pain becomes severe and when the restraint is removed the spasm returns, so much increased as often to cause muscular strain of serious proportions. Supports of wire from the shoulders of such construction as to resist the spasm by means of stiff springs against the side of the head, do some good but do not seem to have brought about permanent improvement. Why the simple spring clamp which the writer has used should succeed so well in these cases cannot be given a clear explanation. A study of the contractions of spasmodic torticollis in their resistance to various restraining forces has convinced the writer that very mild pressure applied properly at the back and sides of the neck by the hand or a simple clasp of metal will give better control of the motion of the head than will any method which disregards the neck and seeks to hold the head itself. This is easily verified by trying it on the voluntary motions of a normal neck. Besides this, the skull on account of its rounded surface is difficult to hold. Control by pressure on the neck allows a fair amount of freedom to the head, a factor which is apparently necessary to success. Probably there are cases which will not yield at all to such measures as these, but the results which this paper records are certainly encouraging and should lead to an extended trial of the methods suggested.

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[2] Gowers: Diseases of the Nervous System, vol. ii, page 669.

[3] P. Redad: Le Torticolis et son Traitement, page 119.

[4] Richardson and Walton: The Operative Treatment of Spasmodic Torticollis with Cases. American Journal of the Medical Sciences, January, 1895.

Reports of Societies.

MAINE MEDICAL ASSOCIATION.

FORTY-SIXTH ANNUAL MEETING, AT PORTLAND, JUNE 1-3, 1898.

The meeting opened at 10 o'clock A. M., Thursday, June 1st, Dr. W. K. Oakes, of Auburn, the President, in the chair.

The meeting was noted throughout for the small amount of outside business, and the promptness with which the papers announced were presented and discussed. After the usual preliminary business and the reading of the report of the treasurer,

Dr. G. H. Cummings, of Portland, read a paper on

UTERINE DISPLACEMENTS.

It favored operative measures rather than the usual unsatisfactory treatment by continued replacement and pessaries. In prolapsus, ventral fixation was objected to as offering probable interference with future labors, and amputation of the wedge-like cervix or Alexander's operation were urged as preferable.

Dr. John F. Thompson, of Portland, pointed out the fact that restoration of the fascia support from below helped many of these displacements more than operations upon the ligaments above. So far as a pessary supplied this support it did good. He favored any operation for retro-displacements which would furnish a posterior ligament to hold the uterus up and the cervix back. Dr. Cummings said he would not favor radical operations until other measures had been carefully tried.

Dr. J. F. Hein, of Waterville, exhibited a rhinolith weighing 275 grains removed from the right nasal cavity.

Dr. W. L. Cousins reported a successful case of anastomosis of the gall-bladder with the large intestine by means of the Murphy button.

Dr. B. B. Foster, of Portland, reported the removal of a needle and fragment of thread from the prostatic urethra. The patient claimed to have swallowed it.

The Committee of Visitors to the Portland School for Medical Instruction reported commending its work as a preparatory school and urged that, in all schools conferring degrees where recitation methods are not in use, there should be required work in some such school in addition to the usual certificate of a preceptor.

AFTERNOON SESSION.

Dr. J. A. Fitzhugh, of Amesbury, was introduced as a delegate from the Massachusetts Medical Society, and Dr. Henry P. Watson, of Manchester, from the New Hampshire Society.

The President's Address followed. Its most important reference was to the alleged abuse of medical charity in hospitals and dispensaries, and the unfair competition said to be exercised by institutions against the profession.

The remedy suggested was some agreement among the superintendents of the different institutions upon a scale of reasonable extra fees for operative work or special advice upon the basis of those charged for similar work in private practice.

It recommended a change in the method of conducting the usual annual entertainment, which is provided at the expense of local physicians, and urged the desirability of the removal of the Medical School of Maine to Portland. As usual the address was referred to a special committee for report.

ACCIDENT AS A CAUSE OF APPENDICITIS

was the title of a paper by Dr. Wm. B. Small, of Lewiston. The greater prevalence of the affection in young adult males, subject to more vigorous muscular exertion, by which the contents of the cecum may be forced into the appendix to act as an exciting cause, and the greater liability of such individuals to accident from occupations were given as reasons for the title of the essay. Cases were reported in detail showing appendicitis to have occurred as a result of direct and indirect external violence, sudden strains and repeated strong contractions of the abdominal muscles.

Localized infectious diseases as a sequence of slight injuries are more common than usually appreciated.

The conclusions of the paper were:

(1) That general prevalence of catarrhal conditions of the bowels, perhaps as an accompaniment or result of the grippe, is responsible for a large part of the general increase in prevalence of appendicitis.

(2) That accidental injuries, strains and work demanding strong contraction of the abdominal muscles, may be held accountable for the greater prevalence of the disease in males.

(3) That such injuries and strains act by forcing material loaded with the bacteria which produce appendicitis from the cecum into the appendix, and that these germs here find favorable soil for their multiplication and development.

(4) That the disease is of growing medico-legal importance, because of its traumatic character, and may give rise to proper suits for damages or valid claims against accident insurance companies.

CÆSAREAN SECTION ON ACCOUNT OF DERMOID CYST

was the title of a paper by Dr. J. A. Donovan, of Lewiston. A tumor was discovered during pregnancy, but the patient refused operation. When labor ensued, delivery was only effected by the abdominal section. The mother died three days later, the child survived. He asked if it would have been better to have removed the tumor, and then allowed the uterus to have delivered itself in the usual way.

Dr. S. C. Gordon, of Portland, said that the mortality of Cæsarean section was much reduced by improved methods of operating. A short incision and a compression band of sterile gauze instead of a rubber band have greatly aided in this direction.

Dr. S. P. Warren, of Portland, had tabulated statistics of five cases of Cæsarean section in Maine, all fatal except one, and that one occurred before the days of antiseptic surgery.

Dr. S. E. Webber, of Calais, reported another case at Robbinston, the mother a dwarf, in which both mother and child survived.

A cordial invitation was received from the physicians of Bangor and vicinity to hold the meeting of 1899 in that city, which was afterwards unanimously accepted.

Dr. George W. Way, of Portland, reported a case of cerebro-spinal meningitis followed by a most remarkable range of temperature, rising from 100° F. to 105.2° on the sixth day, dropping in forty-eight hours to 95° and rising to normal again in two days.

EVENING SESSION.

Dr. James A. Spalding, of Portland, under the title of

NOTES IN A FIRST SERIES OF 10,000 EYE PATIENTS,

detailed an interesting series of observations in twenty-five years of ophthalmic work.

Dr. S. P. Warren, of Portland, referred to the great advantage of vertical writing in public schools in avoiding visual disturbances among the pupils.

A report was received from the committee appointed last year to consider the question of the abuse of medical charities. Beyond recommending that the system of fees for hospital services be made more nearly proportionate to the circumstances of patients, and that the profession stop sending to hospitals patients who can pay a private physician, no solution was offered for the problem.

No action was taken by the Association beyond accepting the report.

THE RELATION OF MEDICAL EXPERTS TO THE COURTS AND TO EACH OTHER

was a paper by Dr. W. P. Giddings, of Gardiner, which called out an animated discussion. The essayist thought much of the discredit resting upon this kind of evidence was due to incapacity on the part of witnesses, and a disinclination to give positive answers even when such were possible. He advocated the enactment of a law to oblige the plaintiffs in malpractice suits to file a bond sufficient to cover the costs of court in case they were defeated.

DR. C. D. SMITH, of Portland, said much of the trouble arose from the fact that men are willing to appear as experts upon matters of which they have only ordinary or general information. He saw nothing discreditable or unprofessional in a physician acting as adviser to counsel in the preparation or conduct of a case, provided he did not appear upon the stand as an expert witness. He favored legislation which would give the court power to summon experts at request of either counsel as is now provided in case of litigation over land titles and boundaries.

DR. S. H. WEEKS, of Portland, thought it most important that all the experts be given opportunity to learn all the facts in a given case and to consult before appearing in court, and introduced a resolution to the effect that such was the sentiment of this Association, which was adopted. Judge L. A. Emery, of the Maine Supreme Court, who was invited to speak, said little was to be expected from legislation; efforts at reform must begin and go on in the medical profession. The proposition of the essayist with reference to the filing of bonds in malpractice suits was condemned as class legislation, to which the physician was no more entitled than any other litigant. He approved the plan for selection of experts by the court.

DR. S. C. GORDON, of Portland, said no physician had any right to go into court as an expert unless he honestly believed in the position he assumed. He said the plan of conferences had been customary in Cumberland County for years.

DR. J. F. THOMPSON, of Portland, urged the substitution of the medical examiner system in place of the coroner.

Resolutions were adopted providing for the appointment of a legislative committee to secure the passage of laws providing for the calling of experts by the courts and the inauguration of the medical examiner system.

SECOND DAY. — MORNING SESSION.

The Association met at 9.30 o'clock.

The report of the necrologist showed the deaths during the year of nine members, two of them ex-Presidents of the Association.

DR. HENRY B. PALMER, of Farmington, read a paper on

TUBERCULAR BONE DISEASE.

Tubercular bone disease was stated to rarely follow lung infection, but the converse is often true. Tuberculous products about joints are often encapsulated, and cure supposed to have been attained, but the old disease often lights up after slight injury.

Aspiration and iodoform injection were recommended for tubercular accumulations in joints prior to radical operation. He believed cure to be possible under certain favoring conditions of rest, natural vitality and improved nutrition.

DR. B. T. SANBORN, Superintendent of the Maine Insane Hospital, read a paper emphasizing the necessity of additional hospital accommodations for the insane, and the Association adopted a resolution urging the legislature to complete the partially-built hospital at Bangor.

DR. HANNIBAL HAMLIN, of Orono, read a paper on

MYXEDEMA AS A FORM OF ANEMIA.

AFTERNOON SESSION.

The Association met at 2.20 o'clock, and proceeded to the election of officers and committees for the ensuing year. The list is as follows:

President, Dr. C. O. Hunt, Portland; First Vice-President, Dr. W. B. Small, Lewiston; Second Vice-President, Dr. S. J. Bassford, Biddeford; Treasurer, Dr. Augustus S. Thayer, Portland; Recording Secretary, Dr. Chas. D. Smith, Portland; Corresponding Secretary, Dr. Hannibal Hamlin, Orono.

Board of Censors: Drs. Alfred King, Portland; E. A. Porter, Pittsfield; J. K. Phillips, Bangor; G. M. Woodcock, Bangor; J. E. Tuell, Augusta.

Committee on Publication: Recording Secretary (*ex officio*) Drs. C. D. Smith, Portland; W. B. Moulton, Portland; E. J. McDonough, Portland; J. F. Hill, Waterville; C. E. Williams, Auburn.

Business Committee: Drs. D. A. Robinson and W. L. Hunt, Bangor.

DR. GEO. P. MORGAN, of Dover, N. H., read a paper on

TALIPES EQUINO-VARUS,

recommending cuneiform osteotomy as the most promising operative procedure. The probable etiology was regarded as retarded or non-rotation, for the congenital form and infantile paralysis for the acquired variety.

DR. H. H. BROCK advocated manipulation and fixation for mild form, but for the more extreme cases forcible restoration under ether, maintaining position by plaster-of Paris splints, repeating the manipulation at intervals of three or four weeks. For cases with too great deformity for this method of treatment, he advocated excision to secure restoration without forcible manipulation, with fixed dressing till good bony union is secured.

The Committee on Recommendation of the President's Address, reported, recommending some form of annual entertainment at the expense of the Association and endorsing the different suggestions of the address. The Association indicated its approval of all except the first, and appointed a committee to devise some plan by which the expense could be borne by those participating.

DR. WELLINGTON JOHNSON, of Augusta, read an interesting paper detailing the difficulties of the management of an epidemic of diphtheria in the isolated French settlement of Madawaska, where restrictive measures were hampered by the ignorant and nomadic character of the inhabitants and the distance from the settlements. Formaldehyde, disinfection and the free use of antitoxin in curative and immunizing doses checked a serious epidemic in a little over a fortnight.

DR. S. H. WEEKS, of Portland, made a statement relative to the efforts which had been made by the Faculty of the Medical School of Maine to secure its removal to Portland, for the advantage of increased clinical facilities. Provisional consent had been given by the boards of the college in face of considerable opposition, but a lot had been secured, and a part of the money raised. He asked for the substantial influence and support of the Association for the school in which the Association has always had an active interest.

Resolutions were adopted urging upon the college authorities the imperative necessity of such removal, and providing for the appointment of a committee of co-operation of two from each county, to act with a committee from the faculty of the school.

At 4 o'clock the Association and invited guests with visiting delegates were entertained by the physicians of Portland at Riverton Park. A banquet was served, and an hour given up to informal social enjoyment.

The evening session was devoted mainly to the Annual Oration, by Roswell Park, M.D., of Buffalo, upon the subject of

IATRO-THEURGIC SYMBOLISM.

The oration was an exposition of the relation between emblems of special significance to both the Christian church and the medical profession. Those selected were the tree and grove, the fish, the dove and the serpent. An historical analysis of their derivation showed their evolution from the symbols used in ancient phallic worship, doubtless arising from the desire of primitive people to express their veneration for the mystery of nature's creative power, and also their ideas of the perpetuation of life, in its constant generation and regeneration.

Dr. Alfred King, of Portland, read a paper on

THE LOCAL TREATMENT OF SINUSES OF THE EXTREMITIES.

These were regarded as infected granulating wounds, and his principles of treatment were the removal of foreign bodies, sterilization of the tract, efficient drainage, careful apposition of the sides of the wound, rest, protection and the improvement of local nutrition.

Gauze drains were condemned in favor of a method described as "pressure drainage," all the indications of treatment except removal of foreign bodies and sterilization being efficiently secured by it. The material used is sterilized oakum, applied in layers three or four inches thick and bandaged tightly by roller bandages. The elasticity of the oakum prevents injurious pressure, it brings about drainage without regard to gravity, it brings the walls of the soft parts into apposition, it prevents the action of muscles and joints, it removes and prevents capillary and venous congestion without preventing arterial flow. The author's practice was to allow the first dressing to remain two days, then remove, cleanse the outlet, and apply fresh oakum. As the discharge decreases, the compress may be kept on longer and longer.

The method is not applicable to those cases of hip-joint disease where the acetabulum is diseased and perforation has taken place into the pelvis, nor to sinuses whose source is within or above the pelvis.

Dr. H. F. Twitchell, of Portland, advocated curetting, irrigations of normal salt solution and iodoform injections followed by the application of pressure as described.

Dr. E. H. Hill, of Lewiston, said to stop discharge and heal the wound is not all, we must make every effort to save the strength, usefulness and symmetry of the limb. He thought Senn's method of the implantation of decalcified bone gave the best results in securing the healing of cavities with unyielding walls, always a most difficult and tedious process.

The closing session was on Friday morning.

The censors made final report, recommending that the next meeting be held in Bangor on the first Wednesday, Thursday and Friday in June, 1899.

The following appointments were made:

Visitors to Insane Hospital: Drs. Addison S. Thayer, Portland; W. P. Giddings, Gardiner; W. B. Small, Lewiston.

To Portland School for Medical Instruction: Drs. C. H. Cumston, Brunswick; J. L. Bennett, Bridgton.

Medical School of Maine (two years): Dr. J. L. Horr, Westbrook.

Delegates to American Medical Association: Drs. S. H. Weeks, Portland; F. C. Thayer, Waterville; C. W. Bray, Portland.

New Hampshire: Drs. W. T. Goodale; W. G. Maybury, Saco.

Vermont: Drs. A. Millett, Searsmont; E. A. Porter, Pittsfield.

Massachusetts, 1899: Drs. E. M. Fuller, Bath; W. K. Oakes, Auburn.

Rhode Island: Drs. C. W. Foster, Woodfords; W. L. Cousins, Portland.

Connecticut: Drs. H. H. Brock; Geo. H. Cummings, Portland.

New York: Drs. J. S. M. Willis, Elliot; S. C. Gordon, Portland.

New Brunswick: Drs. D. A. Robinson, Bangor; J. A. Donovan, Lewiston.

Maritime Medical Association: Drs. B. B. Foster, Portland, and D. B. Myrshall, Woodfords.

The selection of orator was left to the chairman of the next board of censors, with power.

The meeting was one of the usual interest although the attendance was below that of the average year.

Twenty-four new members were added.

The plan of meeting at Bangor next year is not understood as a precedent for future action, but reasons were apparent why it was for the interest of the Association and its eastern members to make the change.

The Association finally adjourned at 10 o'clock.

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AMERICAN ORTHOPEDIC ASSOCIATION,

Twelfth Annual Meeting, Boston, Mass., May 17–19, 1898.

FIRST DAY.

Dr. Robert W. Lovett, of Boston, delivered the

PRESIDENT'S ADDRESS.[1]

He said that twenty-five years ago the first chair of orthopedic surgery was founded at the Bellevue Hospital Medical College, and was filled by Dr. L. A. Sayre. At the present time, the existence of such a chair was announced in the catalogues of at least forty-one of our medical schools, and instruction was given in eleven of our larger cities. The transactions of the American Orthopedic Association now constitute the modern American orthopedic literature. It was natural that at first the attention of the Association should have been directed to the treatment of the commoner deformities, and the specialty still felt the influence given it by such leaders as Sayre and Taylor, but the scarcity of study on experimental pathology was to be deplored. Thus, no important addition has been made to our knowledge of the pathology of hip disease since the appearance of Gibney's book fourteen years ago. Next to nothing was known of the pathology and histology of acetabular disease, and the indications for excision in hip disease are hazy, chiefly because of the inaccuracy of our pathological knowledge. The results are good in the treatment of club-foot because of the clearness of our knowledge of the symptomatology and pathology of this condition. There is great need for further and more exact knowledge of inflamed, irritated and neurasthenic joints, especially joints affected by rheumatoid arthritis and syphilis. Very little is known also of the early etiological factors of flat-foot, or of the real cause of the bony changes in rickets. The speaker made a plea for the thorough utilization of the operative material of the older surgeons, by giving an opportunity for the younger men to use it in accordance with the demands of modern scientific research. A more exact working basis, he said, founded on a more accurate pathological and etiological knowledge, would dignify and broaden orthopedic surgery.

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[1] See Journal, May 19, 1898.

TRAUMATISM OF THE SPINE SIMULATING POTT'S DISEASE.

Dr. T. Halsted Myers, of New York, read a paper with this title. The paper dealt with those cases, chiefly occurring in adults, in which traumatism is followed by the symptoms or deformity commonly found in Pott's disease, yet which the subsequent history showed were not really that disease. The cervical and lumbar vertebræ are naturally the most vulnerable parts of the spine, the dorsal vertebræ being better protected and reinforced. Several cases were cited in illustration, of which the following is a good example: J. V., twenty years of age, over six feet tall, and weighing over two hundred pounds, slipped and fell backward, and as he did so felt something "give way," and experienced sensations of "pins and needles" in the feet for a short time. He was soon able to go to work again. Another injury to the same place, however, laid him up for a short time. When first seen by the speaker in September, 1889, there was a kyphosis at the ninth and tenth dorsal vertebræ, some tenderness, and slight lordosis at the twelfth dorsal and first lumbar vertebræ. He could walk only a few steps. Four months later he was put to bed with a plaster-of-Paris jacket. After three and a half years he could walk half a mile, and one and a half years after that he could walk three miles. Dr. Myers said he did not believe this man had Pott's disease, because of the good family and personal history and splendid physique. Another case was that of Mr. C., eighteen years old, who developed an abscess in the lumbar regions, which opened and discharged spiculæ of bone. Two months later, a small kyphos was noted, and a spinal assistant was applied at St. Luke's Hospital. After three years, a large sequestrum of bone was discharged, and the abscess closed. He wore a brace for six years, although he was believed to be cured two years before its removal. This man had been refused by various large life insurance companies because of a rule against taking cases of tubercular joint disease. Dr. Myers said that where the vertebræ are fractured, with little or no injury to the cord, there is local weakness, and some tenderness may be present, but not very much. On assuming the erect position, the weight of the body gradually increases the kyphosis or lordosis. The picture is then one of ordinary osteitis, and may be easily mistaken for Pott's disease, as there are then present the characteristic deformity, reflex spasm, continual pain and disability. Life insurance companies should not refuse such risks on hard-and-fast rules, but should consider each case separately on its own merits. The object of the paper was especially to call attention to the fact that there are certain cases of traumatism of the spine whose subsequent history is so short and eventful, and the result of treatment so good, that it seems hard to believe that tuberculosis is the cause of the trouble.

Dr. A. B. Judson, of New York, said that he had seen a number of similar cases to those described in the paper. He did not feel disposed to agree with the reader of the paper, that all cases of bone injury which recover in a reasonable time are non-tubercular, any more than he was willing to say that all cases of inflammation of the lung that recover in a reasonable time are non-tubercular. It was quite common to find at autopsy evidences of an old tubercular process which had healed spontaneously, often without having given rise to symptoms indicative of the true nature of the disease. It did not seem to him at all incompatible with our present knowledge of tuberculosis to suppose that tubercular osteitis, if properly treated, might recover in a reasonably short time instead of pursuing a course extending over four or five years.

HALLUX VALGUS EXTREMUS.

Dr. A. J. Steele, of St. Louis, exhibited photographs of an extreme degree of hallux valgus. The toe was adducted to a right angle with the first metatarsal bone, and overrode the other toe. Bunions, with hypertrophy of the underlying bone, gave a marked prominence to the ball of the toe. The phalangeal base was displaced so as to articulate with the outer side of the metatarsal bone. Locomotion was labored and, at times, painful. Some months previously an inflammation, probably a cellulitis, had spread over the foot up to the ankle, and had left the foot more or less stiff. The extensor tendon of the great toe was rigid. The metatarso-phalangeal joint was exposed by a longitudinal incision over the inner and upper aspect, and the base of the proximal phalanx was divided with forceps and removed. After the division of the extensor tendon, the toe was readily brought into line, and a plaster-of-Paris dressing was then applied. The speaker said that the usual advice was to remove the head of the metatarsal bone; but this had not been done in the present instance because it had seemed to him that the sustaining and propulsive power of the foot would be impaired, as this was one of the points of the "tripod" upon which the foot rested. It was well to shave off the cartilage in order to secure more prompt and close union. The deformity was supposed to have been produced by the wearing of very short boots.

Dr. F. S. Coolidge, of Chicago, said that he had to do with a few of these cases. Once, after excision of the head of the metatarsal bone, and in two cases in which part of the head of the metatarsal bone had been left, instead of recovery taking place within three or four weeks, there was pain lasting for four or five months. There was positively no infection in these cases. It seemed to him that by leaving the head of the bone there might result an inflammation of the joint surface. In all of his cases the proximal end of the phalanx had been left.

Dr. J. E. Goldthwait, of Boston, said that in cases which he had seen fit to operate he had removed the head of the metatarsal bone, and had never observed any unpleasant after-effects from this method of treatment. None of the cases had been kept off their feet over four weeks, and they usually began to walk around in two weeks.

Dr. Ansel G. Cook, of Hartford, said that he had operated upon three cases similar to the ones described in the paper. In all of them the head of the metatarsal bone had been extensively diseased, so that it would have been folly to leave it behind. Strangely enough, however, the phalanx was normal.

Dr. W. R. Townsend, of New York, said that in operating upon these cases it was particularly important to see that the scar is placed in such a position as not to be compressed by the boot. Theoretically, scars should not be tender, but practically they are so in many instances, and moreover faulty boots would often cause discomfort after operation, even though the scar had been placed in a protected position.

Dr. R. H. Sayre, of New York, said that he had been accustomed to operate either by an incision between the toes or by an external incision. He had removed some of the bone, even in cases where it had not been excessively diseased, on the supposition that there was an overgrowth of the head of the metatarsal bone, but since he had had an opportunity of studying some skiagraphs of these cases he had learned that the prominence of the bone was not the result of hypertrophy, but of a dislocation of the phalanx, with a marked separation of the first and second metatarsal bones, and stretching of the transverse ligament, so that the phalanx lies almost at a right angle to the metatarsal bone. It seemed to him that the division of the metatarso-phalangeal ligament would answer the same purpose as the removal of the head of the bone.

Dr. Goldthwait said that he had done a number of conservative operations along the lines suggested by the last speaker, and while the results had been fairly good as regards the position of the toe, the period of convalescence had been very much longer, and the ultimate result, as regards motion of the joint, very much less satisfactory. The shortest period of convalescence, in the cases so treated, had been six weeks. A more perfect ultimate result could be obtained by the excision treatment.

THE BOOT AS AN ORTHOPEDIC APPLIANCE.

Dr. H. P. H. Galloway, of Toronto, present by invitation, exhibited a number of different styles of shoes which he had found useful in orthopedic practice. He recommended, in constructing a flat-foot shoe, not only to build up the sole thicker on one side, but also to make the sole project. The shoe should have a straighter inner border, greater width of sole and a flatter sole than other shoes, and it was well to raise the sole inside of the shoe by means of a leather counter resembling Whitman's flat-foot plate. A club-foot shoe which he exhibited, and which is the invention of Dr. B. E. McKenzie, of Toronto, had been found very useful in preventing relapse after full correction of the deformity by operation. The last for this shoe is of such a shape that the front part is bent outward at a point corresponding to the medio-tarsal joint. The heel-counter is very firm, and an additional stiff bracing of leather, at a point corresponding to the first metatarso-phalangeal articulation, furnishes the necessary counter-pressure. A properly made cork-sole shoe, he said, should possess the following features, namely: (1) the inside line should be nearly straight; (2) it should hold the foot in an abducted position; (3) there should be plenty of width across the metatarso-phalangeal articulation; (4) the sole of the boot should be as wide as the sole of the foot; (5) the sole should be flat — not convex from side to side; the heel should be both broad and long. The fact should not be lost sight of that it is useless to wear properly constructed shoes unless the stockings are also properly made; they should at least have a separate compartment for the great toe.

OBSERVATIONS ON MORTON'S PAINFUL AFFECTION OF THE FOURTH METATARSO-PHALANGEAL ARTICULATION, AND SIMILAR AFFECTIONS OF THE METATARSAL REGION THAT MAY BE INCLUDED WITH IT UNDER THE TERM ANTERIOR METATARSALGIA.

Dr. Royal Whitman, of New York, in a paper with this title, reviewed the literature of this subject, and of the allied disorders of the anterior part of the foot. He said that in practically all of the earlier cases the pain had been referred to the fourth metatarso-phalangeal articulation, and in three of his own cases there had been a marked depression of the longitudinal arch. The pain was cramp-like, and in some way was favored by wearing a shoe. The pain was usually described as of a burning character, often intense like a toothache. Not infrequently the cramp is preceded by a feeling of something slipping or moving in the foot. At all times the affected articulation is sensitive on deep impression. Dr. Whitman rejected Morton's theory as inadequate, and expressed the opinion that weakness of a part, or of all of the anterior arch, was a predisposing cause. If the shoe compresses the foot, as a glove does the hand, the anterior arch is elevated, but if the shoe does not support the arch in this manner, or if the sole of the shoe beneath the arch is curved downward, one or more of the bones may be compressed, and result in the production of this cramp. This explains why sometimes a tight shoe is more comfortable to such persons than a wide one. The shoe is not only the exciting cause of the immediate symptoms, but is also an important predisposing cause, owing to its action in weakening the foot. The degree of rigidity of the anterior arch is easily determined by the degree of palmar flexion of the toes. Women suffer from this affection more than men, probably because of their higher heels and narrower shoes. From these considerations it was evident that the reason most of the measures recommended had been successful was that they all served to fix the arch of the foot. These patients should wear an ordinary Waukenphast shoe having a low heel and wide and thick sole, with plenty of room for the toes, and every effort should be made to give proper supports to the anterior arch. In the acute stage, the anterior arch may be fixed by the application of a plaster-of-Paris bandage. In conclusion, the speaker said that Morton's painful affection of the foot and anterior metatarsalgia, although not identical, are closely allied, and are the result of an abnormal relation due to occasional or habitual depression of the transverse arch. It might occasionally exist without obvious deformity, probably as a result of lateral pressure from overriding of the fifth metatarsal bone, which is, in turn, brought about by abnormal laxity of the ligaments.

(To be continued.)

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HAS THE TREATMENT OF DIABETES MELLITUS IMPROVED?

The recent review of diabetes mellitus at the Massachusetts General Hospital, from 1824 to 1898, a brief abstract of which is given on page 178 of this Journal, would at first glance appear to answer this question in the negative, for the statistics show no decrease in mortality during this entire period. But such a conclusion can hardly be drawn, since any marked changes which have been made in the treatment of this affection have been of very recent date. Even the latest works in English, not excepting that by Williamson, do them scant justice.

It is, perhaps, as much the change in our point of view of regarding the disease as the variations in treatment which are capable of producing better results. The statement occurs so frequently in textbooks that diabetes is incurable, that the practitioner loses all his enthusiasm the moment a patient with this disease presents himself. In despair he attempts a palliative treatment, writes out lists of articles headed "allowed," or "to be avoided," and perhaps adds a recipe for some new diabetic flour, while in giving the prognosis the patient's courage is perceptibly lowered.

In contrast to this gloomy picture is the hopeful view which is best set forth in Naunyn's treatise.[1] The keynote of this is contained in the following quotation: "That cases apparently severe at the outset, when subjected to a vigorous treatment, take a proportionately favorable course, while others running a severe course are, as a rule, those subjected late or not at all to careful treatment." Coming from so eminent an authority, this statement is of the greatest value, since it counteracts the tone of the usual textbook. Naunyn, in carrying out this idea, says further, "I consider it an unfortunate curtailment of the physician's task in the treatment of diabetes where it is said, 'the essential task of the physician is to support the invalid in an endurable condition of life for a long time.' In my opinion a broader, more definite purpose should be put into the treatment; namely, this, the strengthening of the deranged bodily function, or at least the checking of further disintegration of the same." This change of view is our first step toward an improved treatment for diabetes.

That drugs are of little value in this disease is now generally admitted. Notwithstanding this, there are few of us who have not heard from eminent sources that considerable success has been obtained from this or that remedy. Patients like the idea of taking medicine and come to the doctor for the sake of the prescription, just as they often go to church for the music. The advice as to the diet and hygiene, either of the body or soul, forms too commonly an entirely secondary consideration. But this question of drugs, at least for a host of remedies, is definitely settled for us by the Massachusetts General Hospital report above alluded to. The pancreatic preparations proved unsatisfactory. No drug, save opium, commended itself, and that in no wise as a specific. It certainly is another step forward, this relegation of the pharmacopeia in diabetes to a very minor position.

Rollo recommended an animal diet as long ago as 1797, and it would seem as if little improvement in treatment had taken place, or could be hoped for in the future along this line. But the point made by Rollo was the prominence given to an animal diet over carbohydrates. Little was said of the great class of fats, and what was said was quite as much against as for their use; for example, at the Massachusetts General Hospital, as late as the period 1840–1855, occurs a record of the following diet: "Lean meat, with a small quantity of stale, dry or toasted bread, avoiding all fatty, farinaceous and saccharine articles." That fifty years ago there was a lack of appreciation of the importance of fats can be understood, but that this idea has been allowed to persist seems incredible. That it does persist can be seen by consulting the most recent books of medicine, or by looking over the proceedings of the meetings of the British Medical Association recently convened in Montreal.

The importance of fats is seen first from the fact that they are the form of food best assimilated by the diabetic patient. Nearly all the sugar and starch given leaves the body unused, and for every 100 grammes of albumin, there is the possibility of 45 grammes of sugar appearing in the urine, whereas from fat, little, if any, sugar is formed. But this is not all, and herein lies another great advantage in fats. Each gramme of fat is capable of furnishing nine calories on being oxidized by the natural processes of the body metabolism, whereas a gramme of proteid matter yields but four calories, even allowing that none of it is converted into sugar. These are facts, and on these facts a rational treatment of diabetes must rest.

In the light of all this, the books still continue to recommend or countenance skim milk and buttermilk either as a prominent constituent of the diet or as worthy of trial. The difference between the amount of sugar in ordinary milk and these by-products is unessential, but the difference in fat is so great that it amounts to more than one-half of the total quantity of nourishment therein contained. In every litre of good milk, the diabetic patient receives some 300 calories more nourishment (and that of the quality best suited to his needs) than he does in skim milk.

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[1] Der Diabetes Mellitus, Naunyn, Wien., 1898, p. 357.

Following the remarks on skim milk in the text-books comes the section on diabetic breads, — that pitfall over which few pass in safety. Over and over again these have been exposed here in Boston many years ago, and again this year. Need we wait until the millenium before it is recognized that a small known quantity of ordinary bread is better than an unlimited amount of bread nearly as rich, or even richer, in carbohydrates?

The commonly accepted mode of treatment of diabetics has been, and still is, of a negative character. This is a much more serious charge against it than to say that skim milk and diabetic breads are used. Article after article is cut off from the patient's diet, and even what is left him, he is only "allowed," until finally he comes to think he eats at all only by sufferance. The secret of the successful dietetic treatment of diabetes lies entirely in the opposite direction. The diet is positive. It is not a question of *how little sugar*, but rather *how much fat*. It is not so much the withholding of articles of food as it is the prescribing of those best adapted to the patient's condition. Von Noorden gives, to form a basis of the diet, what he calls his "Eisernen Bestand," which consists of 60 grammes butter, 2 eggs, 10 grammes olive oil, 30 grammes fat cheese, 1 litre milk and 30 grammes alcohol. This quantity of food can be taken daily, is sure of assimilation, and furnishes the patient some 1,600 calories, or nearly two-thirds of all that he needs. For the remaining amount, there can be considerable latitude admitting of variety.

That one may rightly prescribe and the other follow the directions given, both doctor and patient must know the amount of food taken, and have a working knowledge of its three constituents. This can only be obtained on the doctor's part by the study of first principles. This does not mean theoretical, but practical study. He must know how much butter can be taken at a meal, how much cream can be mixed with the coffee, how much oil can be used in salads, etc. Only by personally weighing and measuring the kind of food his patient is to eat can he rightly advise him. Then, if it is found that the sugar continues to be excreted, the cause can be located, and a more suitable form of carbohydrates given, or the total amount can be further restricted. Really an interested, intelligent cook is of more value to most diabetics than a trained nurse. A Denver doctor recently said of consumptives, that if they wished to get cured of phthisis, they must make a business of it. In diabetes this applies to doctor and patient alike. Between the two a partnership must be formed, and with a more cheerful way of regarding the disease at the outset, a better appreciation of the value of fats and a positive diet list, the results will show that there is even in diabetes an improvement in our treatment.

THE VACCINATION BILL IN ENGLAND.

After much discussion on both sides of the question, the decision has finally been reached in England that vaccination shall no longer be compulsory. As we know, from time to time, dissenters are sure to arise in any community, who bring forth many more or less specious arguments directed against an institution which has been generally accepted by the thinking portion of the people. For many years there have been certain malcontents who have vigorously maintained that vaccination, enforced by law, was a distinct infringement of personal liberty, and that its practice did not, as its advocates maintained, check the spread of the disease small-pox. These anti-vaccinationists have, however, usually been distinctly in the minority, and their influence has not been seriously felt. In England, perhaps more than in other countries, such attacks against recognized methods of studying or combating disease have gained a foothold to a somewhat remarkable degree. We know, for example, how threatening to the prosecution of research in certain lines the anti-vivisection movement has been. Now comes so determined a stand against compulsory vaccination that the bill has been defeated, and England, so far as legal enactment is concerned, is once more exposed to a possible danger of the gravest sort.

The *Lancet*, writing on the matter, says: "The object aimed at by the State in legislating on vaccination should be to secure the benefits of this safeguard to the greatest possible number of persons. This can be done with varying degrees of success by one of three courses: (1) universal compulsion under penalties; (2) compulsion limited in extent by mitigation and restriction in the number of penalties; or (3) optional vaccination."

Of these methods, the first has succeeded admirably in Germany, but in England its success has been growing continually less, and has finally reached a pass when it is no longer possible. The *Lancet* is inclined to blame the physicians themselves, on the ground that they have condoned laxity in the performance of vaccination, and have not striven to show its advantages and diminish its risks. The consequence of this has been that parents, with small-pox only as a distant possibility, have preferred to evade the law, rather than to expose their children to a supposed immediate danger.

It was hoped that the second alternative would be adopted by the government, but even this, with its concessions, was set aside to give place to the so-called "conscience clause," which permits parents, who have reasonable objection to vaccination, to allow their children to go unvaccinated. Evidently vaccination becomes optional through this subterfuge.

The *Lancet* comments editorially upon the situation as follows: "This, which has been variously characterized as a piece of political expediency or as yielding to the clamor of a clique, may nevertheless prove to be the most statesmanlike course, though no medical man can view with equanimity the possibility of an outbreak consequent upon a liberal use by the public of the right to conscientious objection. However, if the plan were to reduce the number of recalcitrants it would not attain the objects aimed at unless it were accompanied by provisions for a similar enforcement of revaccination of adolescents. Therefore, we shall not regret the withdrawal of this bill."

THE MEDICAL DEPARTMENT OF THE ARMY AGAIN.

The criticism of the medical department of the army in which certain medical as well as lay journals continue, as we regret to say, to indulge, calls for further comment.

How in the face of the reports, such as that of Captain Munson, which we quoted last week, a medical journal can continue to hold the surgeon-general responsible for matters of commissariat and transportation not coming under his control, we fail to see.

As an instance of the difficulties which the climate added to the evils of hurried preparations, comes the letter of Lieutenant-Colonel Pope, who was surgeon in charge at Santiago till July 23d, stating that at the time of the sailing of the *Seneca* and *Concho* he was ill with sunstroke, and therefore unequal to the duties and responsibilities which devolved upon him. As is well known the condition of the troops upon these transports has been the chief cause for criticism directed against the surgeon-general's department.

While we would yield to no one in resentment at any mismanagement which may have caused unnecessary suffering on the part of our soldiers, we cannot but think that in the light of the phenomenal success of the campaign of our army at Santiago, accomplished as it was in the face of extraordinary difficulties, and under conditions which rendered the utmost haste imperative, we would be better employed in congratulating our medical department on the small mortality made possible by its labors, than in swelling the wave of newspaper criticism of its surprisingly few mistakes.

MEDICAL NOTES.

Two American Physicians Honored. — The University of Edinburgh has conferred its honorary L. L. D. degree on several of those who attended the recent meeting of the British Medical Association, including Prof. H. P. Bowditch, of Harvard University, and Prof. Wm. Osler, of Johns Hopkins University.

Professor Virchow in London. — Professor Virchow is announced to deliver the introductory lecture to students at the opening of the Autumn Medical Session at the Charing Cross Hospital. The great pathologist has chosen for his subject the simple but comprehensive one of "Recent Advances in Science and their bearing on Medicine and Surgery," and he will speak in English.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 17, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 22, scarlet fever 11, measles 12, typhoid fever 10.

NEW YORK.

Dr. Feeny Succeeds Dr. Hubbard. — Dr. John I. Feeny, a brother of Dr. M. B. Feeny, Chief of the First Division of the Health Department, has been appointed Sanitary Superintendent of the Borough of Richmond (Staten Island) to succeed Dr. George C. Hubbard, deceased.

Death of a Nurse in the Army Hospital Service. — The death of Miss Dorothy Phinney, the first woman to lose her life in the hospital service during the war, is reported. Before she entered the service she was a nurse in the Kings County Hospital, Brooklyn, and her many admirable qualities make her loss deeply regretted. It is probable that a suitable memorial in her honor will be gotten up by her former associates.

An Island Offered to the Government. — James A. Jones, of Deep River, Long Island, has offered to the Government the free use for hospital purposes of Hick's Island, near Montauk Point. This island, which is owned by Mr. Jones, is about thirty acres in area, and on it are several buildings, with wharves, engines, boilers, pumps, etc. It is only two miles from the Long Island Railroad, and four miles west of Fort Pond Bay, where the military camp is located. It is situated at the entrance to Napheague Bay, which affords ample harbor facilities for vessels of moderately heavy draught.

Frankfort Sausages and Hydrophobia. — A case of highly scientific interest is reported from Coney Island, where a man is reputed to have contracted hydrophobia from eating *Frankfurter sausages.* If this curious story should prove to be correct it would seem to suggest to those visiting that idyllic resort the double warning, not only to refrain from eating the Frankfurters but to leave their pet dogs at home.

Death at the Age of One Hundred and Seventeen Years. — Mrs. Margaret Fallon, believed to have been the oldest person in America, died at King's Ferry, on Cayuga Lake, near Ithaca, on August 8th, at the age of one hundred and seventeen years. It has been found from the records that she was born in Lusfuth Parish, King's County, Ireland, in 1781. She came to this country about eighty years ago, and has been a widow for over fifty years. She is survived by four sons and five daughters, the oldest daughter being eighty and the oldest son seventy-five. During the Civil War two of her sons enlisted, one in the Union and one in the Confederate Army. The former died in Libby Prison, while the latter survived the war.

Miscellany.

DIABETES MELLITUS AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1824 TO 1898.

This is the subject of an important historical communication made by Drs. Fitz and Joslin, of Boston, at the recent meeting of the American Medical Association, and published in the *Journal* of the Society for July 23. In the general rush and hurry of medical work we are perhaps too apt to ignore the distant past in our efforts to do full justice to the present. The historical spirit is, in general, poorly developed among medical men. A painstaking piece of work, therefore, of the character of that before us deserves and demands special mention.

The main object of the investigation was to seek evidence in cases which had occurred at the Massachusetts Hospital, of the pancreatic origin of the disease. Other facts of interest were, however, adduced in the study of the disease, which have a decided historic interest. During the seventy-four years under consideration 172 cases were treated in the medical wards of the hospital. In comparing the number of entries by years it was found that within the past thirteen years as many cases of diabetes were admitted to the hospital as in the previous sixty-one years, and the per cent. in the past thirteen years in proportion to the total number of hospital entries has increased fourfold over that of the first fifteen years. The reason for this remarkable increase is given as a wholesome tendency on the part of diabetic patients to put themselves under careful medical supervision. No doubt this is true of other cases as well, and is a gratifying indication of the passing of a prejudice against hospitals, which even now we occasionally see in certain classes of the community. The statistics showed that the disease is predominantly one of the middle third of life, although certain cases were observed in elderly persons and also in the very young. Of the whole number studied, 74 per cent. were males. Not much of importance was learned as to the effect of hereditary predisposition or trauma in leading to the symptoms. Post-mortem examinations were made in 15 of the 47 fatal cases, with the failure to find characteristic lesions, as was, of course, to be expected. The pancreas was examined in certain cases, but its lesions, when found, threw no light on the nature of the underlying cause.

In the earliest records especial importance was attached to the measurements of the quantity of urine passed as compared with the quantity of liquids ingested, since formerly it was believed that patients excreted more urine than they drank liquid. The eradication of this idea has been exceedingly slow. Up to 1851, it is interesting to note that the presence of sugar in urine was determined by taste. In this connection the writers say:

> "The physician in charge sometimes called upon the house-physician to apply this test, although a positive statement to this effect is found only in 1844 and again in 1845. It is probable, however, that the patient was occasionally called upon to use this method, for in 1831 the statement appears, 'on tasting, as directed to do by the physician . . . it was found sweet.' This patient is credited also with the ability to make quantitative determinations in this way, for 'he observed, however, that if he relapsed at any time, even in a very slight degree, from a rigid animal diet, the urine was increased correspondingly in sweetness and quantity.' In another instance it is stated that the urine is 'less sweet after eggs.' In general the patient at the time of entrance was able to make such positive statements as made apparent the condition of the urine. One 'reports urine sometimes natural, at others sweet.' It had the 'sweetest taste,' or 'was sweetest to the taste.' The urine had a 'saccharine smell and taste,' or presented a 'sugary appearance on the shirt,' or the 'urine upon cloth leaves sticky and sparkling deposit.' The intelligence of the lower animals sometimes aided in the diagnosis, for of one patient's urine it is stated that 'flies gathered upon places moistened by it.' Such everyday methods of diagnosis are still in use, for it is but recently that an office patient stated of her diabetic mother that her 'clothes would rattle like starch, so sugary was the water, like brine on the floor.'"

These crude methods were supplemented very early by others, such as evaporation, and in 1841 Trommer's test was introduced. Moore's test, although known before, was apparently first used in the hospital in 1851. The breath of diabetic patients first attracted attention in 1835. The paper goes on to discuss various minor symptoms and offers many statistics of interest and value.

As may be supposed, the treatment has varied within wide limits. During the first fifteen years of the period under discussion it consisted in general of opium, either alone or with camphor and aloes. Cathartics and enemata were vigorously used. Quinine, dilute nitric acid, blisters and cupping were used during the early period. From 1840 to 1855, a time of high mortality, no fatty, farinaceous, and saccharine articles were allowed. For drink, cold water and weak tea. Opium was used, but less freely than heretofore; cathartics were continued and many other drugs, which could have done nothing toward alleviating the condition. During this period the use of yeast was tried by McGregor, who stated that it made the patients feel as if they were "on the eve of being blown up." From 1855 to 1870, special attention was paid to the selection of a suitable bread, and in general, somewhat more attention was given the diet. The following fifteen years saw a return to drugs which were given in great variety and profusion. Since 1885, Soya bean bread has been added to the dietary. Opium is still used rather freely. On the whole the treatment has become more rational, but with no marked change in the mortality. As the writers in conclusion remark:

> "The average mortality of saccharine diabetes has not changed materially, for it was the same in the past thirteen years as in the previous sixty-one years. The dietetic restrictions have undergone no essential alteration in this time. Opium is the only drug which has been persistently used in the treatment throughout this entire period."

METEOROLOGICAL RECORD

For the week ending August 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...31	29.98	74	79	68	78	83	80	N.	N.E.	3	12	F.	O.	
M...1	30.06	67	64	65	89	98	94	N.E.	E.	8	6	O.	O.	
T....2	30.00	77	87	67	86	72	89	W.	N.E.	3	4	O.	C.	
W...3	30.04	74	80	68	70	82	76	N E.	S.	12	12	C.	C.	
T....4	29.94	80	90	70	88	82	84	S.W.	S.	10	13	O.	C.	.31
F....5	29.92	72	78	67	98	64	81	N.	W.	12	8	R.	C.	.78
S....6	29.98	74	83	64	62	63	62	W.	S.W.	12	12	F.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 6, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1579	851	27.84	8.70	22.80	.90	.84
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	—	—	—	—	—	—	—
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	224	101	11.25	6.25	2 25	2.25	3.15
Boston	517,732	280	166	35.28	4.40	32.40	.72	.72
Cincinnati	405,000	101	—	9.90	17.82	7.92	.99	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	95	54	36.40	5.20	27.04	4.16	1.04
Washington	277,000	118	45	20.40	10 20	22.10	3.40	.85
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	77	41	41.28	15.48	34.54	3.87	—
Worcester	105,050	54	33	42.55	1.85	35.16	—	—
Fall River	95,919	—	—	—	—	—	—	—
Nashville	87,754	30	10	3.33	26.66	3.33	—	—
Lowell	87,193	56	41	45.76	7.04	44.00	—	1.76
Cambridge	86,812	44	29	45.40	9.08	29.05	—	2.27
Lynn	65,220	15	9	46.62	6.66	39.99	—	—
Charleston	65,165	33	13	39.39	6.06	18.18	21.21	—
New Bedford	62,416	41	27	61.00	4.88	53.68	2.44	2.44
Somerville	57,977	—	—	—	—	—	—	—
Lawrence	55,510	32	24	65.73	—	62.60	—	—
Springfield	54,790	25	12	44.00	4.00	36.00	—	—
Holyoke	42,364	28	15	35.71	14.28	32.13	—	—
Salem	36,062	9	2	22 22	11.11	22.22	—	—
Brockton	35,853	8	2	—	—	—	—	—
Malden	32,894	9	4	77.77	11.11	44.44	—	—
Chelsea	32,716	—	—	—	—	—	—	—
Haverhill	31,406	16	9	43.75	6.25	25 00	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	15	9	33.33	—	33.33	—	—
Taunton	27,812	9	3	22.22	—	22.22	—	—
Quincy	22,562	5	2	40.00	—	40.00	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	2	0	—	50.00	—	—	—
Everett	21,575	—	—	—	—	—	—	—
North Adams	19,135	5	2	—	—	—	—	—
Northampton	17,448	—	—	—	—	—	—	—
Chicopee	17,368	7	5	28.56	28.56	28.56	—	—
Brookline	16,164	1	0	—	—	—	—	—
Medford	15,832	6	6	66.66	—	65.66	—	—

Deaths reported 2 950: under five years of age 1,525; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping cough, erysipelas and fevers) 895, consumption 256, acute lung diseases 135, diarrheal diseases 706, typhoid fever 43, diphtheria and croup 31, whooping-cough 31, cerebro-spinal meningitis 27, measles 16, scarlet fever 7, erysipelas 4.

From whooping-cough New York 22, Pittsburg 4, Providence and Haverhill 3 each, Cambridge 2, Boston, Baltimore, Cincinnati, Worcester and New Bedford 1 each. From cerebro-spinal meningitis New York 11, Baltimore 4, Washington and Worcester 3 each, Cambridge 2, Boston, Lynn, Springfield and Holyoke 1 each. From measles New York 11, Washington 2. Boston, Baltimore and Pittsburgh 1 each. From scarlet fever New York 6, Washington, 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending July 30th, the death-rate was 17.2. Deaths reported 3,709; acute diseases of the respiratory organs (London) 173, diarrhea 356, measles 62, whooping-cough 61, diphtheria 47, fever 29, scarlet fever 17.

The death-rates ranged from 9.4 in Cardiff to 23.7 in Salford; Birmingham 19.5, Bradford 13.6, Bristol 10.7, Gateshead 15.1, Hull 17.2, Leeds 16.6, Liverpool 23.0, London 16.8, Manchester 19.0, Newcastle on-Tyne 17.8, Nottingham 14.4, Portsmouth 21.8, Sheffield 21.9, Sunderland 19.6, West Ham 16.4.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING AUGUST 11, 1898.

Purviance, George, surgeon. To rejoin station at Baltimore, Md. August 2, 1898.

Godfrey, John, surgeon. To rejoin station at Detroit, Mich. August 2, 1898.

Carter, H. R., surgeon. To report at Bureau for special temporary duty. July 29, 1898. To proceed to Galveston, Texas, for special temporary duty. July 30, 1898. To proceed to New Orleans, La., preparatory to assignment to duty at Santiago, Cuba. August 3, 1898. To proceed to Santiago, Cuba, for special duty. August 6, 1898.

Wheeler, W. A., surgeon. Upon the return of Surgeon D. A. Carmichael to rejoin station at Cincinnati, Ohio. August 2, 1898.

Carmichael, D. A., surgeon. To rejoin station at Cleveland, Ohio. August 2, 1898. Upon being relieved from duty at Cleveland, Ohio, to proceed to Honolulu, Hawaii, for special duty. August 11, 1898.

Wasdin, Eugene, passed assistant surgeon. To proceed to Santiago, Cuba, for special duty. August 6, 1898.

White, J. H., passed assistant surgeon. Granted leave of absence for one month from August 1, 1898, on account of sickness. July 30, 1898.

Magruder, G. M., passed assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 8, 1898.

Kinyoun, J. J., passed assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 8, 1898.

Guiteras, G. M., passed assistant surgeon. To assume command of Boca Chica Detention Camp, Key West, Fla., in addition to other duties. August 6, 1898.

Brown, B. W., passed assistant surgeon. To proceed to Cape Fear Quarantine Station, Southport, N. C., and assume command of Service. August 2, 1898.

Thomas, A R., assistant surgeon. To proceed to Fort Monroe, Va., and report for duty on U. S. transport "Obdam." August 2, 1898.

Wickes, H. W., assistant surgeon. Granted leave of absence for fifteen days from August 4, 1898. July 30, 1898.

Tabb, S. R., assistant surgeon. To proceed to Louisville, Ky., and report for temporary duty and assignment to quarters. July 30, 1898. To rejoin station at Savannah, Ga. August 6, 1898. To proceed to Montauk Point, L. I., for special temporary duty. August 11, 1898.

Hastings, Hill, assistant surgeon. Relieved from duty as representative of the Service at the trans-Mississippi Exposition, Omaha, Neb., and directed to report at Washington, D. C., for instructions. August 2, 1898. To proceed to Montauk Point, N. Y., for special temporary duty. August 8, 1898.

Lavinder, C. H., assistant surgeon. To proceed to Newport News, Va., and report for duty on U. S. Transport "Manitoba," August 2, 1898.

Grubbs, S. B., assistant surgeon. To proceed to Brooklyn, N. Y., and report for duty on U. S. Transport "Chester." August 2, 1898.

Foster, M. H., assistant surgeon. To proceed to Egmont Key Detention Camp, Port Tampa, Fla., for special temporary duty. August 1, 1898.

Lumsden, L. L., assistant surgeon. To proceed to Reedy Island Quarantine, Port Penn, Del., for duty and assignment to quarters. August 4, 1898.

Anderson, J. F., assistant surgeon. To proceed to Egmont Key Detention Camp, Port Tampa, Fla., for special temporary duty. August 9, 1898.

White, Mark J., assistant surgeon. To report at Immigration Depot, New York, N. Y., for temporary duty. August 2, 1898. To proceed to Montauk Point, N. Y., for special temporary duty. August 11, 1898.

Fricks, L. D., assistant surgeon. To report at Detroit, Mich., for duty and assignment to quarters. August 3, 1898.

Heiser, V. G., assistant surgeon. To report at Boston, Mass., for duty and assignment to quarters. August 4, 1898.

PROMOTIONS.

Passed assistant surgeons to be surgeons, August 10, 1898: **Peckham, Cyrus T.**; **Glennan, Arthur H.**; **Wasdin, Eugene**; **Brooks, Stephen D.**; **White, Joseph H.**

APPOINTMENTS.

To be assistant surgeons,

White, Mark Johnston; **Fricks, Lunsford Dickson.**, July 29, 1898. **Heiser, Victor George**; **McAdam, William Ralph**; **Gwyn, Matthew Kemp**; **Hoddy, William Cott**, August 3, 1898.

SOCIETY NOTICE.

The American Microscopical Society.—The 21st annual meeting of the American Microscopical Society will be held in Syracuse, N. Y., August 30, 31, and September 1, 1898. The sessions will be held in the building of the Syracuse University Medical College.

All interested persons a e invited to be present, join the Society and read and discuss papers or demonstrate apparatus and methods. For particulars as to membership, etc., letters may be addressed to Prof. S. H. Gage, Ithaca, N. Y., or Dr. A. C. Mercer, Syracuse, N. Y.

John Van Duyn, A. Clifford Mercer, *Com.*

RECENT DEATH.

Harlow Gamwell, M.D., M.M.S.S., died in Westfield, August 11, 1898, aged sixty-three years.

Lecture.

TALKS ON THE HISTORY OF MEDICINE.[1]

No. I.— Prefatory: To the Renascence.

BY DAVID HUNT, M.D., BOSTON.

Without attempting to indicate, even, the mythical heroes of medicine, whose names Le Clerc and Sprengel have made so well known, we shall, in this first talk, endeavor simply to mark out a common ground upon which we can meet for a more detailed study of some features of the period of the Renascence. Naturally we recall the name of Hippocrates, the founder of our art; he was to medicine as Socrates to philosophy; in both, at nearly the same epoch, we find character playing a part as important as that performed by intellect. Their honesty and unselfishness made them nobly dissatisfied with conditions obtaining in their respective fields of endeavor. The questionings of Socrates were intended to prick the rhetorical bubbles of the sophists, a class, accepting their justification by Grote, which had no great purpose in their disputations, no object such as made the name of Socrates beloved of mankind.

Hippocrates in the same spirit rejected whatever of esoteric nature adhered to medicine; he is celebrated not as the priest of Æsculapius, not as the founder of a new philosophy, but as the founder of the art of medicine. This he accomplished by straightforward observant practice; of course he partook of the general heritage of ideas. Thales had left his ideas concerning the importance of water as the original substance for the creative spirit; Pythagoras had developed his mystical notions of numbers and metempsychosis; Empedocles had described the world animated by passions, moved by love and hate; Anaxagoras had conceived of a creation of which his like and unlike particles were units; and Democritus, excelling in genius, had evolved an atomic theory with stern necessity as a prime mover. Water, air, fire and earth were established for Hippocrates as the four elements, and an abstract first, original creative power, a portion of whose spirit served each individual as a motive power, was also a commonly received doctrine. To these conceptions as such Hippocrates added but little; he was scantily supplied with anatomical knowledge, his physiology was almost equally limited. He conceived of an innate warmth proportioned to the activity of the nutritive process, of a pneuma which circulated through all the vessels, in the free or retarded circulation of which he saw the principal characteristics of health and disease, of a sort of excitability and of sympathy between the different parts. He had but little knowledge of generation; to him the uterus was bicornate; the body was composed of the four elements. They were warm and cold, dry and moist and their properties corresponded with the four principal fluids, the blood, mucus, the yellow and black bile. Health was a normal mixture of these elements properly tempered in their properties and an unobstructed circulation of the pneuma. His fame then rests almost wholly upon his descriptions of disease; here there is no suspicion of barrenness; he was the masterful artist; he did not follow conventional lines. Where reasoning, with the elements at hand, was impossible, these qualities, the cream of all his character, restrained him from attempting to learn nature from philosophy and guided him to Nature herself, the immortal teacher of mankind.

The simple art of Hippocrates was soon corrupted; others did rush in where he had feared to tread; it was inevitable, as men were constituted, that some founder of sect or school, mistaking green fruit for ripe, should attempt, in proper person or by means of zealous disciples, a premature "science" of medicine. Two systems of thought have had such far-reaching effects upon the actions and reactions constituting the evolution of the science and art of medicine that it is needful to give them briefly separate notice.

Plato's conception of science was such that he thought our chief aim should be the searching for the immaterial ideas or types of things; these ideas were, to him, eternal, original conceptions of a creative power; they were known to our immaterial part before birth, before the connection of soul and body, hence the true end of investigation was rather the awakening and recalling these "ideas" and by so doing realizing the truth in coming to a knowledge of the divine conceptions. This would furnish a "reality" in contrast with the unreality and discordance which our perceptions of natural objects furnish us. To Plato our souls and the souls of worldly bodies were emanations from the world soul—a part of God; our bodies are warm as they are vital, and the earth has this same vital warmth; our bodies are composed of the four elements, so is the world, and as our body has a soul so the world has; further, since the head is round, like the world, it is the natural seat of the soul which rules the whole body, but a second, lower, mortal soul has its seat in the breast and abdomen. As to the body of man, its essential characteristic is a basis of marrow with which the elements, united in various degrees, compose the parts; thus bone is marrow and earth. Plato is the noblest type of idealism which the most glorious period of human thought has produced; it has been said that anything can be found in his various writings not excepting innumerable contradictions; for us it is sufficient to know that according to his main ideas the chief rôle of scientific investigation is the cultivation and purifying of our imaginative faculties.

Aristotle looked more to nature; he was not unmindful of the demand for generalizations; he knew that we are continually deceived by appearances, but with greater power of observation and less tendency to poetic introspection he endeavored to correct the false interpretations of the senses and continually sharpened the observing faculties by exercising them. With these tendencies he naturally employed inductive methods, long before Bacon made the world conscious of their importance. To Aristotle the reality, the truth, is that embodied in the individual object; this was composed of an undetermined element which was the material and of a determined element or form; the purest essence of being is intellect, pure, abstract thought; this intellect is active in the prime mover, which is susceptible of becoming all things in thinking; the passive intellect which is acted upon renders all things intelligible, but that which acts is superior to that which is acted upon and this inferiority is shown by its perishable nature; the active intellect is impersonal, separate from the individual but participated in by individuals. It is agreed that his were the highest conceptions of Greek philosophy, but this "metaphysical Newtonism," as Renan calls it, contained many elements of the thoughts of his predecessors and is not more noticeable for us than the mass of observations which he accumulated. The "Peri-Zöon" is wonderful reading to-day and in embryology it was nearly two thousand years before the world attained the level which he established.

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[1] A course of four lectures delivered by invitation before the Harvard Medical Alumni Association, February, 1898.

The time of Grecian glory was not to be long continued. The rise of Macedon, the conquests of Alexander, the division of the East among his generals at his death, the rise of Egypt under his successors led to the founding of the great library and school at Alexandria and its early annals are marked by the names of Erasistratus and Herophilus, physician and anatomist, worthy of ranking with Euclid, Archimedes and Hipparchus. But the expectations excited by such names were not to be realized; the empirics could furnish only too many grounds against an attempt to furnish scientific foundations for our art; the abuses which had been experienced in the formations of the various sects and schools upon so many out-worn dogmas appeared to be fatal to all rationalism. In addition, the success of the attempt to form a new religion by the introduction of the worship of Serapis and Isis were soon followed by the formation of a metaphysical system composed of fragments of all the dreams of the East, in the cultivation of which all sound methods of observation and reasoning decayed until they seemed only to enrich the soil for the growth of that mystical system destined to become the characteristic of the Alexandrian school.

As time passed, Rome exercised in the Punic Wars, subjugated Greece and entered upon the career of Eastern conquest, ending at Actium with Egypt a Roman province; as a consequence her intellectual life, mostly imitative, and her religious life, Machiavelian at the best, were degraded by every kind of Eastern superstition flowing in upon her through the channels established by her armies, even as in a more peaceful way they inundated Alexandria. Enough of medical knowledge had accumulated to make possible the era of the encyclopedists, Celsus, Pliny and Dioscorides. Aretæus is about the only great medical man between their era and the time of Galen, to whom he furnished much of anatomical observation; he was great enough to rise above the sects in their attempts to confine medical study to one-sided views of the elements as formulated by Hippocrates. Galen was more philosopher than practitioner, and this probably is the key to most of his unpopularity at Rome; he was naturally imbued in his native school of Pergamos with the doctrines of Aristotle; but in his work at Alexandria, where he made his famous anatomical studies, he was subjected to a certain extent to the Platonism in the ascendant there; he vaccilated between the systems but leaned eventually towards materialistic views; he could not accept the idea of a "soul." At one time he speaks of respiration as maintaining innate warmth, at another as refreshing and restoring the animal spirits located in the brain. He denied the opinion of Erasistratus that the arteries contained air and established the fact that they contained blood, but as is well known he described a permanent communication between the ventricles. He used well the accumulated knowledge of his time and he added considerably to it, but he was not much in advance of the spirit of his age. He was the last of the ancient anatomists, but he was fully as prominent for his dogmas; his comments upon the writings of Archigenes upon the pulse, his doctrines of the temperaments (the sanguine, cold and warm; the phlegmatic, moist and cold; the choleric, dry and warm; the melancholic, dry and cold) and his dogma of "contraries" which give origin to the "allopathy" of those who love to think and talk dogma, did as much or more than anything else to pad what might be called medical scholasticism. Perhaps the worst to be said of him is that he assisted in preserving the health of Commodus, and the best, that he maintains much the same relative position in medicine as that occupied by Marcus Aurelius in philosophy.

Alexandria at this time had forgotten its Grecian culture: Jewish, Persian, Egyptian and other superstitions, mingled with fragments of the doctrines of Pythagoras, Plato and Aristotle constituted a confusion from which arose such prophets as Apollonius of Tyana and such teachers as Philo, who a little before our era had begun the formation of the system prevalent in the school. All the efforts of the ancients had resulted in leaving the curiosity of man unsatisfied; human reason, human science had failed; faith then must be tried, and the knowledge of the universe must be sought as a gift from God; piety must conciliate the supreme power into giving that which man was incapable of earning; thus originated the Neoplatonic doctrines at Alexandria, for centuries the centre of medical culture. Later there were new developments of mysticism, the Cabala with its mystic meanings of words and letters; Oriental fastings and tortures calculated to stimulate the ecstacies in which nearer approaches to the divine wisdom were imagined; cures by the laying on of hands, by the use of holy ointments, by the sign of the cross and by holy relics, — all these characterized full-fledged Neoplatonism. Plotinus, its greatest exponent, would have nothing to do with medicine or with doctors; he was as much opposed to baths and to animal food, in short a confirmed ascetic. It is needless to dwell upon the scantiness of medical records in such an environment; one important contribution to future thought resulted. Influenced partly, at least, by Persian ideas, a sort of formless world was conceived out of which things in the process of becoming took a nature of good as a part of God or of evil, in so far as they were not of Him, or negative. The growth of this conception during the Middle Ages influenced the Christian philosophers, as for instance, Saint Augustine, to whom the origin of evil, the boundaries of the kingdoms of good and evil, the nature and rank of the inhabitants, etc., are leading questions.

In Rome, in the mean while, astrology, alchemy, the transmutation of metals and all varieties of arts had kept pace with the Alexandrian movement.

In the fourth century Oribasius forms a medical and historical landmark of considerable importance; he preserved many fragments of ancient medical literature. Galen, Dioscorides, Erasistratus furnished him, apparently, with as many ideas as his own extensive experience in the campaigns of Julian, reaching as they did from Gaul to Persia. He shared with the great emperor his love for classical antiquity and probably witnessed the final division of the Roman Empire. Nemesius, of Emesa, was of this time; his name has been made more familiar to us by his extreme development of certain Neoplatonic imaginings, resembling, in a shadowy way, the doctrine of evolution as worked out in our time by laborious research: it is a good sample of the stuff of which Dutens and some of his successors have written of the "origin of discoveries attributed to the moderns," and of "lost arts"; also of much of the material that enters into the various theosophies. As these imaginings have been favorite playthings for the mystics of all ages it is not absolutely correct, perhaps, to speak of them as valueless.

In the fifth century the school of the Nestorians at Edessa contributed a number of interesting facts to the medical annalist: here were educated Mesue, the elder, Serapion and many famous physicians, here perhaps his first hospital was founded. There was a noticeable freedom from religious restrictions while the Nestorians and Jews were unconsciously beginning the culture of the Arabians; ancient fragments of all kinds, pagan, Christian, Jewish and Egyptian, combined to form a soil for coming Mohammedanism.

Alexander Trallianus, of Lydia, is perhaps the most prominent medical figure discernible in the deep gloom of the sixth century; he was independent and original and is famous in our literature and to a certain extent outside it, from his elaboration of Galen's ideas to a conception of vital force. Aëtius, pupil of Oribasius, but a Christian of Oriental and mystic type, was his contemporary; his name may fix for us the epoch of the beginning of the development of Neoplatonism into pantheism; a movement against which Justinian, exponent of all that is hateful in orthodoxy, issued his decrees. Justinian suppressed the failing school at Athens, thus formally severing a tie, nearly worn out, which bound scholarship to the ancients for nearly a thousand years; by taking away the salaries of the professors at Alexandria he aided its downward movement. Meantime the seed sown by the holy Antony in Egypt in the fourth century was bearing fruit, and we read under the rule of this Eastern bigot of the resort of the studious to the monasteries; it is the gloomiest century of the Middle Ages and among all the convulsions of nature which terrorized, and plagues which for more than fifty years wasted mankind, as is fitting, we find the first description of small-pox.

In the West the Roman Empire was in ruins; the hordes of barbarians were mingling their superstitions with those of their victims; the history of the iconoclasts, the strange result of their rising, the loss of Italy, the revolt of the popes, their successful appeal to France, the founding of the Carlovingian dynasty, — of these the immortal Gibbon has made an English story for other dustmen than Mr. Boffin.

In the East, Mohammedan orthodoxy, early in the seventh century, finished the ruin of Alexandria which the Christian orthodoxy had begun: out of this epoch came the thought of Theophilus that brain and spinal cord were really formative influences in shaping the skull and the vertebra; probably the subject is not yet exhausted.

We can only indicate the Mohammedan conquest of the north of Africa, the south of Italy, Spain and Byzantium itself; the medical capital of the conquerors consisted of all that remained of Greek culture which was passed over to them in the pandects of Ahrun, translated into Arabic by an Alexandrian Jew. It is the age, for us, of Paul of Ægina, whose works, translated and supplied with comments by Francis Adams, furnish one of the most valuable of English sources as to the details of ancient medicine — though at the same time this very work is a demonstration of a reason why medical history is at so low an ebb in English schools. The most prominent claim of the translator for a consideration of the work is its importance as a direct aid in daily practice; of course, such a claim was soon proven to be almost baseless; the art of fifty years ago even, found but little to copy in its practice from the records of ancient medicine; all that experience had taught us to preserve was incorporated in the art; what it had taught us to drop consisted mostly of outworn humbugs. As well *copy* the ancient artists in their drawing and coloring; we *study* the ancient artists and find our reward in better conceptions of the complexities, of the tendencies of art in our own day, in new conceptions of the relation of art to the new principles which all the sciences are developing; we find art thus vitalized and ourselves consciously following its organic movements; we are lifted above a commonplace routine tending to make of art a lifeless formalism; we experience, besides the reward of better practice, that highest joy which the Greeks possessed in an ingenuous, childish way, the joy resulting from the healthy exercise of all the parts of the intellect, imaginative and rational. No felicity equals this: it is the essence of the passion of the observer of nature, it lasts as long as life lasts. This result is to be attained in like manner in the art of medicine and it is in influences of this nature that we see the value of the study of medical history. The idea of a direct improvement of daily practice from copying the ancients was a conception resulting from the formal classical culture peculiar to the English universities, and to our own as far as we have imitated them. It is this formalism which has invited the criticism of men like John Stuart Mill and Charles Lyell, and disgusted such men as John Hunter; it is their vital knowledge of nature which animates the scientific critics; if they seem to write one-sidedly, narrowly, it is to a great extent due to national awkwardness and reserve. What they feel is easily read between the lines; it is their own experience of the pleasure derived from the search for truth as it is in nature which animates them; it is the new comforter promised to man, the "spirit of truth." No branch of original research has a monoply of it, the investigators in philology, psychology, embryology share alike in this joy of the greatest poets. When methods inspired by this spirit are practised, harmony will exist between the advocates of so-called "classical" and "scientific" methods of teaching. It will be observed that all the rays of enlightenment are radiated from one common centre; medical history simply makes us conscious of our relations to it.

To those who recall the sketch of Dr. Adams, by Dr. John Brown, it may seem harsh to speak of his historical views as so mistaken; it is pathetic to think of his vast learning, his capabilities, his laborious country practice, and then of the sum of it all; but the sum was exactly what the view of medical history current in England, the view which he himself wished to extend, not reform, made possible. Dr. Brown speaks of some suggestions of Dr. Adams, made just before his death, as to the propriety of instituting a chair of medical history in the universities. With a tenderness, which we confess ourselves unable to repress, for this man of delicate taste and robust strength, this liberal, high-minded, Scotch country practitioner, we can only regard his disappointment as a mercy; in all human probability, he would have wasted the fine aroma of his fame in such an effort at teaching the history of medicine as he contemplated.

To return to the seventh century, the epoch in which the caliph Oman destroyed the Alexandrian school and library, we find European thought ruled by the monks, philosophy held in servitude by the church, and but a few names indicating obscure conflicts over fragments of ancient philosophies. In the failure of anything like earnest effort we find constant repetition of traditions, dismal, bombastic affectation of magisterial wisdom. Urinoscopy, dogmatic wrangles concerning the pulse, stupid, unnatural quarrels over the place, manner and time of blood-letting, of which all were densely ignorant, fill volume after volume which the printing-press has preserved for us,— let us be duly thankful for the destruction of much of it. A thorough study of these humbugs, as such, not as a part of dignified professional history, would furnish considerable material in refutation of those who, reading modern thought in the writings of the Middle Ages, have attempted to change the prevalent conception of this barbarism and make the epoch appear as one of wonderful achievements intellectually. Medical history here vindicates its value in furnishing an objective study which concerns the thought of almost every great scholar of the Middle Ages; the facts it furnishes cannot be refuted, they prove the existence of a wide-spread process of dry-rot more destructive than the rudest attempt of any body of iconoclasts; excesses might and generally were followed by reactions, but long-continued and careful nursing was requisite to restore the vitality of the intellectual life of Europe nearly extinguished in this period.

The caliphate of Bagdad soon became the seat of medical learning and Alexandria with a new library and trade extending in all directions, began to exhibit signs of new intellectual life. The influence of the Arabs makes it expedient to notice some of the leaders of Arabian medicine: Rhazes was one of the most prominent among them, in the ninth century, but Haly Abbas was the ruler, until, in the latter part of the tenth century Avicenna, the "prince of physicians," appeared. I fail to find in the famous canous anything indicating creative power or thorough observation; his elevation seems to be due to the ancients upon whose shoulders he stood. The Arabian physicians were the Arabian philosophers: we must remember this when we compare Arabian and Christian philosophy. Avicenna ranks far below Galen as a physician and observer and he is servile in his relation to Aristotle as he knew him, that is, as he was passed over to the Arabs in Arabian translations of Syrian texts made from the Greek. The Arabian commentators of Aristotle were free in their additions and opinions and probably Avicenna's philosophical liberalism, as opposed first to Mohammedan and later to Christian orthodoxy, has contributed something to his reputation.

A prominent trait of his physiology was his view of nutrition; he held that a moisture was separated from the blood from which "cambrium" was produced; that "cambrium" was then deposited like a dew upon the part to be nourished and assimilated. He was no anatomist, but the Koran may be responsible for the deficiency; it is said that as a boy he knew the Koran by heart.

Serapion is another prominent Arabian name, particularly in their great specialty of materia medica; but Albucasis, the great Arabian surgeon of Cordova, was still more famous. He was the originator of prophylactic blood-letting, and we can remember him as the possible prototype of Sangrado. On the whole the Spanish-Arabian schools furnish one of the most pleasing subjects to the medical historian of the Middle Ages. The broad, liberal toleration, which generally ruled among them, is a contrast to the conditions generally prevailing in Europe at the period. Avenzoar, of Seville, in teaching Averroes, contributed more, perhaps, than any one Arabian to the awakening of European thought. It would be difficult to exaggerate the importance of Averroes as a factor in the advanced thought of the latter period of the Middle Ages. The result seems not so much due to him personally, as a thinker, as to the fact that he fell heir to all that Arabian philosophy had attained in working over the thoughts of Aristotle, and that at a time when circumstance favored his passing their results, in his own name, over to the Europeans, then in leading-strings. The Jews, the means of much of this transfer, were not without their own philosophy, as the reputation of Maimonides, the body physician of Saladin, proves. His name also recalls the approaching destruction of Bagdad by the Mongolians (1256). Constantinople had already fallen to the barbarian Franks, who worked new destruction there. The little flash of light among the Greeks had soon died out and they, as well as the Western World, had fallen under the Arabian influence. The fall of the Arabs was rapid, Genoa and Venice took their trade; their Christian neighbors became more powerful in Spain, and finally Ferdinand Third, of Castile, conquered Cordova, confined the Moors to Grenada, whence, as Prescott eloquently relates the pitiful story, they were driven in the fifteenth century by Ferdinand the Catholic. The Arabians furnished us with some chemistry, some materia medica, some astronomy and some mathematics; in the main they were channels, rather than rivers of thought from living fountains. The blossoms of Bagdad, Cordova, Toledo and Seville *never* furnished the promised fruit as far as the science and art of medicine is concerned.

The first light in the Western World came from the court of Charlemagne. Charles Martel saved Europe from Mohammedan conquest, Charlemagne, perhaps, planted the seed which was to enable Europe to conquer its intellectual freedom. Some, at least, of the precious material came from the English Benedictine schools founded by Gregory First in England; it might be safer to call them botanic gardens. Be this as it may, from the academy founded by Alcuin, at the court of Charlemagne, originated the University of Paris, the centre of scientific thought in Europe for a long period. Medicine perhaps was never in a more degraded condition than in the eighth and ninth centuries in Christian Europe. The lowest order of monks attended, in the main, to general practice; their medical knowledge was derived almost wholly from Cœlius Aurelianus. He had compended chiefly from Soranus, and from a compend of Gariopontus; they could not use even Galen's texts without these dilutions; various councils of the Church for various reasons forbade the practice of medicine to all but the most insignificant of her servants, and they were much restricted in surgery. Two schools in the course of time became famous, Monte Casino and Salerno; both were developed in connection with Benedictine monasteries, against the will of the church, which had long before forbidden the founder of the order to indulge his tendency to furnish medical instruction. The efforts, however, were winked at until in the ninth century instruction was openly given at Monte Casino. In the eleventh century Constantinus Africanus was attracted to Monte Casino and there translated many of the works of the Arabians and some of the ancients, which it is said he gave out as of his own composition. Pope Sylvester (Gerbert) favored him as directing a movement towards a study of nature and against the formal logic which constituted all that the scholastics knew of their adored Aristotle, a sad instance of the irony of fate. By some medicine and more miracle, worked by the relics of the saints, and by the salubrity of the climate, Salerno grew to be a famous school; we all recall the famous "Regimen Salernitanum" dedicated to the "King of England." The date of the visit of Prince Robert, who was probably the king referred to, marks the epoch of the first crusade and the period in which the reputation of the school was at the highest: the antidotarium of Præpositus is one of its most famous literary products. Ægidius Corbolensis, later physician to Philip Augustus, wrote a work on the urine which, like its fellows, is a splendid object-lesson of the dogmatism and ponderosity of the densely ignorant. It is impossible, without the aid of the bibliography of the period, to conceive of the popularity of works of this kind. They were edited and commented on *ad infinitum.* Yet this was the leading production of a professor in a school where, by the edict of the liberal and cultured Frederic, the student was obliged to study logic three years and medicine and surgery five years before he could go up for examination for the degree of magister; the title of doctor was generally held only by the teacher. One should read his urinoscopy and imagine the examination. Verily, the art of resting the burden of medical reform and progress upon the shoulders of the student was perfected at an early period. The growth of the universities soon extinguished these local schools.

If we recur for a moment to the time of Charlemagne, we find Scotus Erigena, an Irishman, pushing speculation beyond the bounds which had been established. In this attempt of his some have seen the origin of "scholasticism." Scotus, himself, attempted to furnish a rational ground for certain articles of faith, as we have noticed that Sylvester did at a later period, in favoring Constantinus Africanus. The gist of his efforts was a working over of the conceptions of the Neoplatonists in accordance with the views of his time, but eventually the movement thus originated became the famous discussion between the "realists" and the "nominalists" as to the interpretation which should be given to the so-called "universals." Referring to what was known of the ideas of Plato and imbued with the teachings of the Neoplatonists, the realists saw, in what we should call the conception of species or genera, the nearest approach to the reality, which it was thought God had in mind in creation; the larger the number of objects included in the abstract conception, the more it was supposed to contain of the form and power, as a part of the world soul, derived from God; hence, the more real and the more universal coincided. Following this line of thought, the realists stumbled upon pantheism. Opposed to these ideas were those resting upon the nominalist's conceptions of Aristotle's meaning, that the individual thing contained the original; the first substance, that the name of the the species was simply a name, not in any sense a real universal, as was the original material. Most of the medical body were realists. When Duns Scotus, a Franciscan, became the leader, they were Scotists, as their opponents under the leadership of Thomas of Aquina, a Dominican, were Thomists. Duns Scotus was astrologer to Frederick Second, and at his court he came under the influence of the Saracenic thought prevailing there. This position was the cause of his being the first to introduce to the Europeans the works of Aristotle, as commented upon by Averroes, and much of the advanced thinking which his name stands for, and which divides, in a manner, the Middle Ages into two distinct periods, was due to this Saracenic Aristotelianism. The Aristotle of the scholastics, previous to this movement, was represented simply by his logic, by which they marshalled and drilled their own motley intellectual forces; the Saracenic Aristotle had been idealized by the Arabians until Aristotelianism and Platonism were almost blended. Albertus Magnus, a Dominican, and Roger Bacon, a Franciscan, was one of the sharpest opponents of the Thomists. Time and space forbid anything like an adequate notice of this really great English thinker. During these conflicts of the scholastics we meet the names of Gilbert of England, Roger of Parma, William of Salicetus, and Lanfranc, the originator of the tourniquet. This last was more distinguished for his surgical observations than for his operations; he probably was the first who described syphilitic infection following connection, if we allow that syphilis existed in the Middle Ages. In spite of Simon's learned opposition I believe it did; it was the *record* not the disease which is, or was, lacking; for instance, in the comments upon the carmina urinæ of Ægidius Corbolensis, of which I have spoken, a line in pure scholastic style gives the origin of the word "urine" as derived from the fact: "That what it touches it bites, dries and burns." Gentilis de Fulgineo, in his comment in the edition of 1483, says that this drying, burning quality of the urine is shown, and the name derived, from the fact that urine is good for ulcers and pustules, and particularly against "ulcera virge."

Lanfranc, of Mailand, fled to Paris on account of troubles incident to the conflict between the Guelphs and Ghibbelines. More important than their battles was the peaceful revolution which William of Occam effected in the first half of the fourteenth century, but the growing rationalism, which he did so much to favor, was not the only influence which was breaking up the stagnation of the Middle Ages. If he, by his insistence that it was "unnecessary to multiply beings without reason," did much to put the "gods to flight," mysticism was doing as much, unconsciously, by the boldness of its speculations concerning forms and beliefs which had seemed so well established.

As the fourteenth century dawned upon the intellectual awakening, the morning must have threatened a fearful day. No wonder that the world accepted, freely, the warnings of the mystic prophets, who had long held that the end of all things was near at hand. The black death, the persecution of the Jews, the wild processions of the flagellants, the dancing mania, were causes and characteristics of the terror, superstition and fanaticism prevailing.

The struggles of Guelphs and Ghibbelines convulsed

Italy; Spain and Portugal were torn by the desperate strife of Christian and Moor; England and France were at war and two emperors were arrayed against each other in Germany. We can imagine how the rumors of all these terrible happenings filled men's ears, deafening them to the great, free thoughts of Dante, as they deafened the medical profession to the invectives of Petrarch. No one of the time, in or out of the profession, seems to have felt so acutely the all-pervading humbug of the medicine of the time. His attacks upon Padua, the embodiment, to him, of Arabian materialism, his fiery warnings to the doctors against their slavish imitation of ancient models, were not the creed of a narrow churchman; nearly two hundred years before Luther, he attacked the abuses of the church as freely as did the great reformer. As Browning has taught us, poets are often seers. Bernard of Gordon knew better than Petrarch; the father of quacks was doubly assured by the *success* of the "Lillium Medicinæ." Did not John of Gaddesden, quack that he was, become the first of the native court physicians of England? Gentiles de Fulgineo knew how to make his comments popular, but Guy de Chauliac was a proof that something of reality was still existing in the profession, and probably his fight for the restoration of the ligature, and, in a rude way, for anatomy, is only a sample of a thousand other struggles made by less favored, but not less honorable, medical men in more obscure fields. In general, though, the medical profession seemed unaffected by the manifest signs of progress; it continued for a long time perfectly satisfied with its status as a sort of appendix to the learned world. In the universities it was not an independent discipline; how could it be? There was no system of anatomy or of physiology worth mentioning; no chemistry, no physics excepting as these principles of medicine were embodied in the various "philosophies." The forces which were to make us an independent organic body became apparent only after the lapse of some centuries. One of their first manifestations during the Renascence, capable as they are of so many interpretations, will be the subject of our next talk.

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Original Articles.

THE QUESTION OF THE CURABILITY OF CANCER OF THE BREAST.[1]

BY J. C. WARREN, M.D., BOSTON.

The great change which has been wrought by the extension of the field of operation in cancer of the breast, and the improved technique of the operation introduced from time to time, and more noticeably of recent years by Halsted, gives renewed interest to statistics in this operation as they continue to accumulate.

The contrast between the rare successes of former years and the present time I have already called attention to in a recent paper.[2]

As the value of statistics is increased with the number of cases tabulated, it has seemed to me worth while to review the situation after an interval of two years, and to endeavor to glean whatever there may be to throw light upon the great question: In how many cases may we hope eventually to save life on the lines on which surgeons are now working?

The accompanying tables include seventy-two cases covering an interval of fifteen years. It does not include all cases operated upon during that period, as the histories of many of the earlier cases could not be obtained, and many cases had to be thrown out, owing to imperfect pathological records.

No.	Date.	Diag.	Recur. Date.	Alive and well.	Death, date and cause.
1	July, '83	Colloid	July, '88, nodule, axilla removed	May, '95	
2	June, '84	Cancer	O	'93	Jan., '94, with apoplexy.
3	Dec., '84	Scirrhus	O	April, '97	
4	Mar., '85	Cancer (recur.)	Feb., '94, in scar, removed	Mar., '98	
5	July, '85	Cancer	O		July, '91, with "sporadic cholera."
6	Nov., '86	Med. ca.	March, '89, local		? No answer.
7	Jan., '87	Cancer	April, '87, local		?
8	Feb., '87	Cancer	May, '88, removed, and again later		Oct., '89, with recur.
9	Mar., '87	Cancer	O	Mar., '97 Mar., '98	
10	Oct., '87	Med. ca.	Local and general		Aug., '88, with recur.
11	Dec., '87	Med. ca.	Sternum and gener.		Sept., '90, with recur.
12	Jan., '88	Med. ca.	June, '89, local		Jan., '90, with recur.
13	Feb., '88	Scirrhus	April, '88, local		Aug., '88, with recur.
14	Oct., '88	Cancer	O	Mar., '93	
15	Oct., '88	Scirrhus	Not locally		Aug., '91, with recur.
16	Jan., '89	Med. ca.	At autopsy		Dec., '92, with recur.
17	Jan., '89	Med. ca.	Feb., '89, local, removed Feb., '90, local, removed		? No answer.
18	Jan., '89	Cancer	Nov., '89, local, removed		Sept., '91, with recur.
19	Feb., '89	Cancer	O	Mar., '98	
20	April, '89	Med. ca.	General		Sept., '90, with recur.
21	Aug., '89	Med. ca.	5-6 mos., local		July, '90, with recur.
22	Nov., '98	Scirrhus	3 mos., local		Nov., '89, with recur.
23	Nov., '89	Cancer	May, '90, local, removed Oct., '90, hopeless		May, '91, with recur.
24	Nov., '89	?	After 2 yrs., local		May, '95, with recur.
25	Dec., '89	Cancer	Other breast after 9 mos., quack. Recur. scar		May, '93, with recur.
26	Jan., '90	Cancer	Autumn, '92, local April, '93, general		Aug., '93, with recur.
27	Jan., '90	Cancer	O Local		Feb., '91, with recur. (?)
28	Mar., '90	Scirrhus	Local		Oct., '90, with recur.
29	Nov., '91	?	O Local (?)		May, '92. ?
30	Feb., '92	Med. ca.			Oct., '92.
31	Oct., '92	Med. ca.	June, '93, local		May, '94, with recur.
32	Nov., '92	Cancer	June, '93, local		June, '94, with recur.
33	Nov., '92	Cancer	O	Mar., '98	
34	Jan., '93	Med. ca.	Nov., '94, local, removed	Jan., '98	
35	Jan., '93	Scirrhus	Jan., '95, local and general		? No answer.
36	Feb., '93	Cancer	O	April, '98	
37	April, '93	Scirrhus	O	Mar., '98	
38	June, '93	Scirrhus	Local and general		Mar., '94, with recur.
39	June, '93	Med. ca.	Local and general		Mar., '94, with recur.
40	Sept., '93	Scirrhus	O	June, '98	
41	Jan., '94	Med. ca.	July, '94, local		June, '95, with recur.
42	Jan., '94	Scirrhus	O	Mar., '98	

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[1] Read before the Massachusetts Medical Society, June 7, 1898, and recommended for publication by the Society.

[2] Boston Medical and Surgical Journal, Nos. 12, 14, 1896.

No.	Date.	Diag.	Recur. Date.	Alive and well.	Death, date and cause.
43	Jan., '94	Scirrhus	Wound never heal'd		July, '95, with recur.
44	Feb., '94	Med. ca.	General		July, '97, with recur.
45	Feb., '94	Scirrhus	In spine		Aug., '95, with recur.
46	Feb., '94	Med. ca.	General		June, '94, with recur.
47	Feb., '94	Med. ca.	March, '94		April, '94, with recur.
48	July, '94	Med. ca.	March, '97, local, removed May, '98, local		
49	Oct., '94	Scirrhus	Jan., '96, local, removed		Mar., '96, with recur.
50	Nov., '94	Med. ca.	Aug., '95, local, removed Oct., '96, hopeless		?
51	Dec., '94	Scirrhus	?	May, '95	?
52	Jan., '95	Scirrhus	O	Mar., '98	
53	Jan., '95	Cancer	O	Mar., '98	
54	Mar., '95	Scirrhus	O	Mar., '98	
55	April, '95	Med. ca.	Feb., '96, local operated (?)		April, '97, with recur.
56	Aug., '95	Med. ca.	June, '96, local, operated July, '97, inoperable		
57	Sept., '95	Scirrhus	O	Mar., '98	
58	Oct., '95	Scirrhus	O	Mar., '98	
59	Nov., '95	Med. ca.	Immediate Operated?		Jan., '86, with recur.
60	Dec., '95	Med. ca.	?	Nov., '96	?
61	Jan., '96	Med. ca.	May, '96, local		Mar., '97, with recur.
62	Jan., '96	Med. ca.	O	Mar., '98	
63	June, '96	Scirrhus	O	Mar., '98	
64	Oct., '96	Med. ca.	O	Oct., '97	
65	Oct., '96	Cancer	?		Dec., '97, with recur.
66	Dec., '96	Med. ca.	?		June, '97, "suddenly."
67	Jan., '97	Med. ca.	Jan., '98, local, removed	Feb., '98	
68	June, '97	Med. ca.	O	Jan., '98	
69	Nov., '97	Med. ca.	May, '98, sternum and humerus		
70	Dec., '97	Cancer	?		
71	Jan., '98	Carcinoma	O		Jan., '98, pulmonary em. 5th day.
72	Feb., '98	Med. ca.	O	April, '98	

Of the 72 cases there are 26 known to be alive at the present time, and 38 known to have died. Of the latter, there were, however, 2 cases in which death occurred of other diseases than cancer, and that too long after the danger limit had been passed. In other words, nearly half of the cases are known to be living to-day, or to have died of other disease than cancer.

Of the 26 living cases there are 3 who now have recurrence of the disease, and 4 who have had a recurrence but have remained well at the present time.

The following table shows in a general way the locality of the relapse:

RECURRENCES.

	Local.	General.	Doubtful.	Humerus and Sternum.	Totals.
Dead	25	7	3		35
Alive	1	1		1	3
Unreported . .	4		4		8
Alive and well . .	4				4
Totals,	34	8	7	1	50

The above table shows the great importance of a careful study of the proper limits of the field of operation, for we find that in the 50 cases in which recurrence took place there were 34 local recurrences and only 8 in which the field of operation remained in a healthy condition.

Such statistics emphasize the importance of strict attention to the rules now laid down, namely, the removal of a large margin of the cutaneous covering of the breast, a careful deflection of the edges of the wound, and removal of the subcutaneous fat for a considerable distance around the mammary gland, the removal of the pectoral muscles, and a minute and painstaking dissection around the sheath of the axillary vessels.

In only one of the successful cases was there a dissection of the supraclavicular glands. I have, however, four times operated upon the neck of a patient for infected glands, in which case the original operation field has remained healthy for four years. I feel confident that had the supraclavicular region been explored at that time a small gland would have been discovered, and a permanent cure would have been secured.

It is my custom at the present time to explore the posterior cervical triangle in all cases, and although in the majority I fail to find disease, this addition to the operation does not appear to add to its danger or to the amount of shock.

In regard to the situation of the growth we find that in 25 cases no statement is made as to the locality. This leaves 47 cases. In 13 of these the disease was found in the upper and outer quadrant, in the upper and inner quadrant in 6 cases; in the central region in 6 cases; in the upper hemisphere in 5; in the lower and outer quadrant in 5; in the outer hemisphere in 3; in the inner hemisphere in 1.

These figures show that the disease is more frequently found in the upper and outer quadrant than in any other quadrant, in the upper hemisphere more frequently than in the lower hemisphere, and in the outer hemisphere than in the inner hemisphere.

In two cases the disease originated on the anterior axillary fold and I have named this in a class by itself as "Cancer of the anterior axillary border," the disease apparently beginning as in Paget's disease in the skin, and subsequently involving the breast.

The periods during which recurrences are observed are also of value, and they are given in the subjoined table. In 9 cases it was not possible to learn the date of recurrence, but of the other 41 cases 37 occurred during the first three years; of the remaining 4 cases 2 recurrences were found between three and four years, and 2 between five and nine years. One of these exceptionally late recurrences was a colloid cancer in which an axillary gland evidently had been overlooked. In the case in which a nodule was removed from the pectoral region nine years after the original operation, it seems reasonable to assume that a new infection had taken place in a para-mammary gland. The existence of these glands is now well recognized by anatomists, and the fact shows the importance of including all such adjacent gland tissue in the field of operation.

This table also shows how rare are the recurrences after three years.

It seems to me highly probable that many cases, reported as unusually late recurrences, are cases which have not been carefully examined. The patient's word has been taken when suddenly a generalization of the disease reveals the true condition. Every case should receive a thorough examination by a competent surgeon at the end of three years. If, under these circumstances, the report is favorable, there is probably not more than one chance in a hundred that the disease will ever show itself again.

RECURRENCES: BEFORE

	½ yr.	1 yr.	2 yrs.	3 yrs.	4 yrs.	?	5–9 yrs.	Totals
General . . .	2		2	2	2			8
Local	11	11	5	3		2	2	34
Doubtful . . .						7		7
Humerus and sternum	1							1
Totals	14	11	7	5	2	9	2	50

Taking the three years' limit as the gauge of success, we find there are seventeen such cases. Two of these are dead, one dying, ten years after the operation, of apoplexy, and one dying of sporadic cholera six years after the operation. Three of these have had recurrences, one in the axilla and two in the pectoral region. These nodules were removed, and the patients are now alive and well, one of them three years, one four years and one ten years after the last operation. Of the remaining twelve, the operation was performed in three cases over three years ago; in four cases over four years ago; in two cases over five years ago; in one over nine years ago; in one eleven years ago; and in one case over twelve years ago.

An analysis of the diagnosis in these seventeen cases shows that nine were reported to be cases of "cancer," six reported as cases of "scirrhus," one medullary cancer and one colloid cancer.

With one exception only, the cures consist of the milder forms of cancer, if we assume that the term "cancer" indicates a condition midway between scirrhus and medullary.

It is somewhat discouraging to find that only one case of genuine medullary cancer has been rescued from the lot. In this case there was a recurrence in the pectoral region two years later, which was successfully removed, the patient since remaining well for over three years. The clinical history of the case bore out, therefore, the original diagnosis, and showed it to be correct.

The percentage of cures, or those which have passed the three years' limit in 55 cases, is 30.9 per cent.

In estimating these results it should be remembered that these operations extend over a period of fifteen years, and that the earlier operations do not compare with the later ones in thoroughness. They do, however, cover that period in which the axilla was dissected in all cases, but of the earlier operations not much more can be said than this. If now we begin with January 1, 1893, and take in all those cases which come up to the three years' limit, that is, up to April, 1895, or just three years ago, we find 22 cases with 8 cures or a percentage of cures of 36.3 per cent.

A large number of these cases include those of hospital patients, many of them of malignant types, and patients who have delayed calling attention to their disease. If now we take the cases in private practice only, during this same period, we find they are 12 in number with 6 deaths, 1 recurrence, and 5 cures, or 41.6 per cent. On the other hand, taking all the cases in private practice during fifteen years we find the percentage 34.7 per cent.

Comparing these figures with those given in statistics collected by Dowd,[3] we find 199 cases, with 71 cures, or 39.6 per cent. This percentage seems remarkably high for so large a series, but it includes Rotters's series with 50 per cent., including only 15 cases, and Cheyne's with 57 per cent., including only 33 cases.

It is possible that some surgeons include those cases only in which an operation gives a chance for cure, selecting those in which they have advised a radical operation with the distinct view to a permanent cure. In my own series those cases only have been omitted where the entire growth could not be removed, such operations being clearly only palliative.

It is evident that high percentages can be obtained only when cases are selected with some care, but present experience with the new operation hardly justifies one as yet in deciding what are the limits of the curable class. Until then many incurable cases will undoubtedly be subjected to operation. It seems at least a more humane policy to sacrifice our statistics for the sake of saving occasionally a desperate case.

On the other hand, it is to be hoped that wider experience will enable us to spare many a patient the ordeal of a useless operation. It should be said here, however, that even in palliative operations life is prolonged and suffering often spared to a remarkable degree.

In regard to causation: in 8 cases only is trauma given as a probable cause of the disease; in 4 cases there was a history of abscess, and in 2 cases a history of mastitis.

The question of the involvement of the axillary and supraclavicular glands is one of great practical interest. The record mentions glands felt in the axilla in 54 cases only. My impression is that in 1 or 2 cases only has a careful search by the pathologist failed to unearth infected glands in this region. In 5 cases supraclavicular glands are mentioned. Three of these cases are dead, one is alive, and in one the result is unknown.

In only 15 cases is there a record of a retraction of the nipple. In my opinion this is a most unreliable symptom. One often sees an inversion of the nipple which is quite a different condition, and one quite frequently associated with anatomical peculiarities. It has no pathological significance.

There may be extensive disease of the breast without a sign of retraction of the nipple. This retraction is caused by the involvement of the ducts and their cicatricial contraction. The dimplings of the skin over the nodule are of greater significance, and are in marked contrast to the protrusion of the growth, in the case of a benign tumor or cyst, above the surface when the patient is in the recumbent posture.

One of the first questions asked a patient with a nodule in the breast usually is: "How long has it existed?" The average period in 68 cases was 10.1 months. It is interesting to note that in 16 cures the average period was 11.6 months, whereas in 38 failures the average period was 9.4 months.

In private practice the general average was somewhat better, being only 7.8 months. Here, again, we find 11 successful cases, giving an average of 8 months; and 17 failures, giving only 7.6 months as the average time.

The inference to be drawn from this is, that the longer duration of time during which the disease existed previous to the operation in the successful cases clearly shows a milder form of the disease.

In one case I have succeeded in operating within three weeks from the time the tumor was known *not* to exist. In this case a minute infected gland was found in the axilla. The patient was cured by the operation.

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[3] Annals of Surgery, March, 1898.

In summing up the results obtained from these data I think we may be justified in saying that a surgical operation can save, as a rule, those cases coming under the head of "scirrhus," and even of "cancer"; that in the case of "medullary cancer" an earlier interference may claim a fair proportion. Before, however, the percentages of success are to be permanently placed so high that we may hope to save over one-half of our cases, the professional public must be educated up to that point that they will send their patients early, and not wait until the case has become hopeless before they advise their patient to consult a specialist.

More difficult still will it be to instruct patients themselves to realize the importance of not neglecting any lump in the breast, and also to overcome that strange propensity in the cancerous to conceal their disease.

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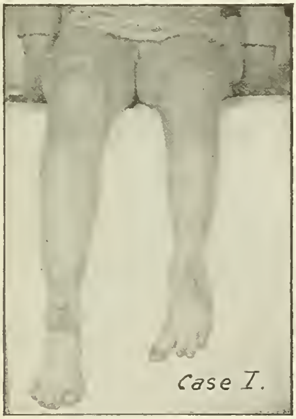
CONGENITAL DEFECT OF THE FIBULA.

BY F. J. COTTON, M.D., AND A. L. CHUTE, M.D.

The cases we have to report are of those classed in the literature either as congenital defect of the fibula or as intrauterine fracture of the tibia, according as the one or the other feature has chanced to impress the individual observer.

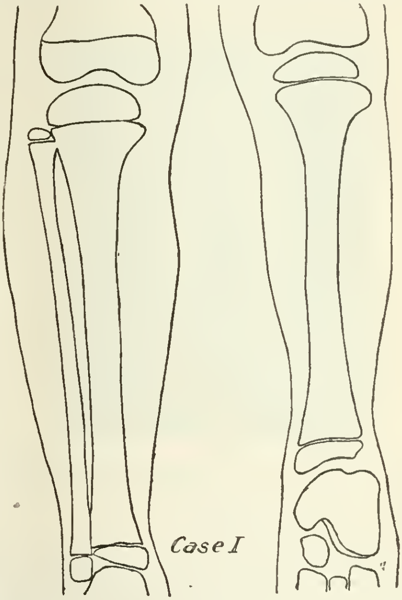

Case I.

The first case, G. H., a boy of seven years, was an inmate of the Marcella Street Home. There was no history of trauma at birth or before, no deformities noted as having occurred in the family. The deformity was first noticed when the child began to walk. The limp then noticed has rather increased with his growth, though the disability has never been extreme. The boy is now robust, and, except for the left leg, normally formed. This leg shows marked shortening, the tibia shows a bend forward, and the foot, which has but four toes, is in marked valgus. The total shortening is two and one-half inches, one-half inch of which is due to shortening of the femur. The girth of the left thigh is two inches less than on the right. The patella is distinctly smaller than on the sound side. The circumference of the calf is one and one-quarter inches less on the left. No trace of the fibula is to be felt. At the middle part of the tibia there is a distinct bend forward. Over the most salient point of this bend is a faint scar-like line something over one-half inch in length.

The foot shows no equinus, and the whole sole is used in walking. The foot is, however, markedly everted when weight is borne on it, the inner malleolus coming much nearer the ground than in the sound foot. There are but four toes, the great toe being considerably larger in all dimensions than that of the other foot, the other toes of normal size and shape.

Examination with the fluoroscope and x-ray photographs showed no trace of the fibula. There was defect of one toe and of the corresponding metatarsus. The astragalus, calcis, and probably the cuboid, are represented by a fused mass of bone of irregular shape; the scaphoid and the three cuneiforms were normal, at least in position.

The boy had, as a result of the shortening, a marked scoliosis, with rotation, the dorsal convexity to the left; this disappeared on lying down. He had a marked limp, but never had any pain, and was active. The boy left the institution shortly after being seen, and has never had other treatment than a high sole.


Case I

Case II. E. F., a girl of eight, was also at the Marcella Street Home. The deformity in this case was very similar to that in Case I, but the disability greater. This child also is, save for the deformity of the leg, normally formed, and, though small, yet of strong frame.

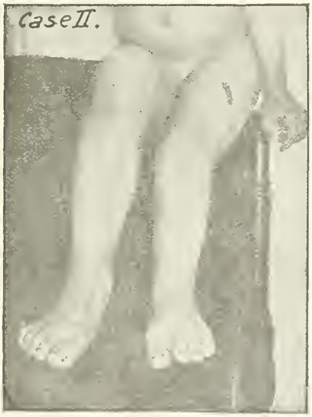
The shortening in this case is two and three-eighths inches for the lower leg, and one-half inch for the thigh. The whole limb is evidently atrophic, the difference in girth of the two thighs being three-quarters of an inch; of the calves, two inches difference. The femur at its lower end is obviously less in width. The patella is notably less in size.

There is obviously a defect of the fibula, only in its lower quarter is anything to be made out, and there is no trace of an external malleolus — the outer edge of the upper joint surface of the astragalus is palpable, during flexion and extension, where the external malleolus should be.

The tibia, shortened but not thickened, is definitely bent, though at a very obtuse angle. The apex of this angle is about the junction of lower and middle thirds of the tibia, and is directed forward and slightly inward. There is no sign of thickening about the angle.

Over the most salient point of this bend is a longitudinal scar-like depression, about three-eighths of an inch in length, which is more adherent to the bone than is the surrounding skin.

The foot is held in equinus by contraction of the calf muscles, and is used in strong plantar flexion, showing considerable pronation when bearing weight. The peronei seem to be little if at all contracted. The foot itself, narrower than its fellow, and three-quarters of an inch shorter, is of sufficiently normal shape save for the lack of one metatarsus and its toe. The remaining toes are normal in shape; in size about the same as those of the other foot.

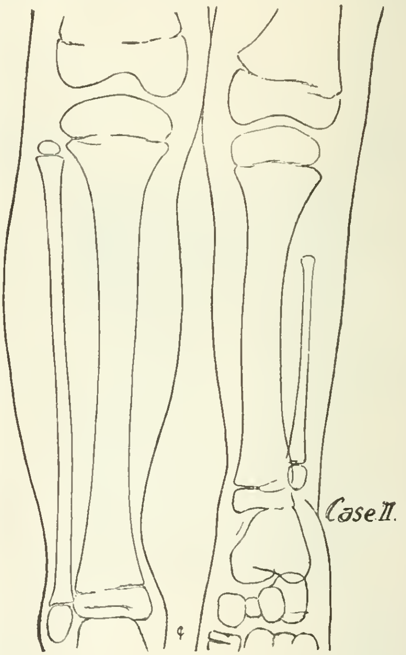


All voluntary and passive movements of the hip, knee and ankle, and of the foot, are normally carried out, except as limited by the shortening of the calf-muscles. There is no paresis, and no essential muscles are absent. The reflexes are normal. There is a scoliosis due to the shortening which wholly disappears in the prone position.

The presence of a large hairy mole on the thigh of the lame side is of interest, though probably of no significance.

The x-ray examination showed a normal right leg; on the left the following anomalies: A considerable decrease in width of the lower epiphysis of the femur, no marked change in its thickness vertically. The upper epiphysis of the tibia, likewise of normal thickness but much less in width, shows in the photograph as three-eighths of an inch less. The intercondylar groove of the femur is much less marked than on the sound side. Below the head the tibia approaches the normal thickness and the shafts of the two tibiæ are of about the same thickness. The lower tibial epiphysis is narrower (one and one-sixteenth *vs.* one and seven-sixteenths) and considerably thinner vertically. The epiphyseal line grows somewhat indistinct toward the outer side. The angle in the tibia does not show in the front view. Viewing the leg from the side with the fluoroscope one sees a definite but very obtuse angle in the bone without any thickening of the shaft.

The fibula measures but three-fifths as much in length as the sound one, the shaft is little more than half the normal diameter. The upper epiphysis does not show on the plate though the conformation of the end of the bone suggests its presence, unossified. The lower epiphysis is present, of two-thirds the normal size, but so shifted upward that its tip comes opposite the epiphyseal line of the tibia; the external malleolus, therefore, does not enter into the articulation at the ankle.

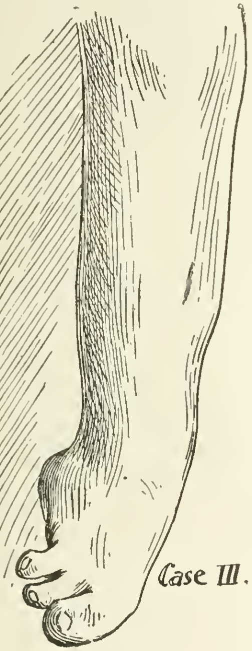


In the tarsus is to be seen a mass evidently representing fused astragalus and calcis, and probably scaphoid as well. The cuboid and the three cuneiforms are distinct. The first and second metatarsals have the normal articulation, the third articulates with the outer cuneiform and with the cuboid, the fourth with the cuboid alone. The metatarsals and phalanges are, save for the defect of one toe and metatarsal, entirely normal.

Before being seen by us the child had had no treatment. With a view largely to correction of the scoliosis, a tenotomy of the tendo-Achillis was performed and a boot with a high sole applied. This reduced the scoliosis to a minimum but the valgus position of the foot was rather aggravated. Accordingly, a sole support with double uprights was so arranged by raising the heel end in the boot as to leave the foot in moderate plantar flexion. This apparatus in connection with the high-soled boot has somewhat improved the gait.

Case III. J. R., age two years. Seen through the kindness of Dr. E. G. Brackett. Is an outpatient at the Children's Hospital.

At birth it was noticed that the child had but three toes on the right foot and that the foot was held in a queer position which, from the description of the parents, must have been a calcaneo-valgus. Under no other treatment than the mother's manipulation this "queer" position has almost entirely disappeared.



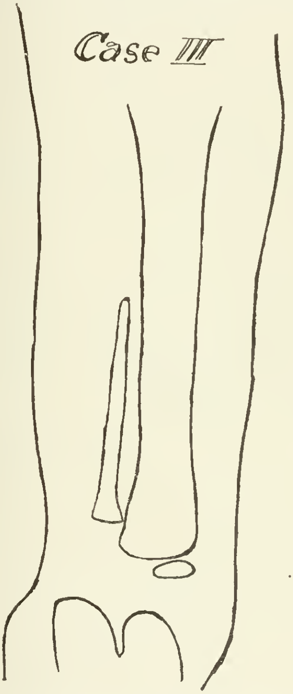
At present the right leg is one and one-half inches shorter than the left, all of this shortening apparently in the lower leg. The thigh and calf are both smaller than on the normal side and the shaft and condyles of the femur feel distinctly slenderer than on the left. The patella is not much over one-third the normal size.

The tibia shows a bowing forward a little below the middle, with very little deviation, however, in the long axis of the bone. Over and about the bend the tissues are somewhat thickened but there is apparently no thickening of the bone. Over the bend anteriorly is a faint scar-like line half an inch in length.

No fibula could be felt and the prominence of the external malleolus was wholly wanting.

The radiographs, however, show a rudimentary fibula about two inches in length, the lower end of which is nearly one-half inch above the lower epiphyseal line of the tibia. Nothing is to be seen of either epiphysis, but from the shape of the lower end of the fibula it seems probable that the lower epiphysis exists, though it probably, as in the last case, does not reach the ankle-joint. The upper end of the fibula, unlike that in Case II, tapers off gradually and there is no reason to suppose the presence of an epiphysis.

The foot in this case has but three toes, sufficiently normal in size and shape, and is one and one-half inches shorter and much narrower than the left. It is held in very slight equinus while the valgus deformity is extreme. The foot can be brought up nearly to a right angle with the leg, but correction of the valgus is only partly possible. This is evidently due to contraction of the peronei, which are drawn tense long before the normal position can be attained.



Radiographs show an apparent fusion of the talus and calcis. The cuboid is much smaller than normal, — the scaphoid and the three cuneiforms somewhat small. Two metatarsals with the corresponding phalanges are wanting.

The boy, who has walked for eight or ten months, has an extreme limp and is not active, but has no pain. He is now wearing a valgus shoe with a T-strap.

In neither of the two cases (I and III) in which a complete history was obtainable, could we get any account of hereditary deformity, prenatal trauma or abnormal labor.

Many cases of this sort have been reported and there has been much discussion as to their etiology, with a number of theories to account for the relatively constant association of these apparently nonrelated deformities.

Most of the earlier observers (Gurlt, Brodhurst, Swan and others) and some of the later (as Brinton, Ithen, Braun and Busachi) have believed the bend in the tibia a result of intrauterine fracture, while the scar was supposed to indicate compound fracture. The accepted etiology was either external trauma or excessive muscular contraction on the part of the fetus. These observers had no clear theory to advance as to the cause of the defect of toes, metatarsus and fibula.

Little accounted for the fracture which he accepted as proximate cause, by supposing an over-action of muscles due to some vice of innervation — which, of course, explains nothing.

Broca supposed a defect of development with fracture from muscular action.

Adams believed the condition not an absence of the fibula but a fusion of tibia and fibula — a view not borne out by dissections.

Pressure from twin pregnancy and compression by the cord have been made to serve as causes, though with no support of facts.

Blassius noting the lack of growth of the limb in later life found this hard to reconcile with the theory of trauma as a cause, but he advanced no other theory.

Chance supposed compression in abnormal position (against other leg) by the cord to be the cause; the scar a result of decubitus.

Fricke noting that the fetus in the fifth and sixth week shows a bend of the tibia and assuming the factor in its straightening to be the growth of the fibula — was inclined to assume, in cases where the fibula was wanting, a mere persistence or exaggeration of this fetal condition.

Brinton, writing in 1884, considered the trauma primary and tried to explain the associated defects as in some vague way secondary.

Ithen, in 1885 and Braun in 1886, still held to trauma; Braun holding the fibular defect to be a predisposing cause of the fracture, in that it weakened the leg. The defect he did not explain. Recognizing the uncertainty whether the dimple over the angle was or was not a true scar, he suggested the possibility of decubitus as a cause.

(To be continued.)

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THE TOXIN OF DIPHTHERIA AND ITS ANTITOXIN.[1]

BY THEOBALD SMITH, M.D., BOSTON.

(Concluded from No. 7, p. 160.)

The essential nature of the lesions produced by the toxin of diphtheria upon tissues and cells composing them has been the subject of many investigations. To obtain a simple morphological expression of the effect of this poison is an object worth striving for if it is indeed ever realizable. The lesions observed in the throats of patients and in the subcutis of guinea-pigs after an injection of the toxin do not reveal anything specific, and are readily ranged under the head of inflammation. The lesions observed in the cardiac muscle in the experimentally induced disease have been regarded by Comba, Mollard and Regaut, and others as primarily affecting the muscle fibres. Interstitial lesions are slight and purely secondary. When we come to the nervous system to which the observed paralyses early drew the attention of histologists, a number of non-specific changes are recognizable. In the central nervous system, degenerative changes in the cells of the anterior horns have been described recently by Murajeff as following all injections of toxin whether leading to paralyses or not, but similar changes have been found by Goldscheider and Flatau for tetanus, by Kempner and Pollack for the poison of botulismus (meat-poison), and by Kossel for the poison of blood serum from eels. The work of studying the lesions of the nervous system due to toxins has been begun in earnest and in due time this subject will become clarified. At present we are not in position to deduce from such work any simple conclusions. The peripheral nerves have also received their share of attention and the paralyses referred to a neuritis as well as to degenerative changes. Quite recently Dr. J. J. Thomas[7] has published interesting studies upon the degenerative changes observed in the pneumogastric nerve in those cases in which heart complications followed diphtheria.

To these miscellaneous lesions associated with diphtheria, we must add the diffuse and focal cell necroses in various organs observed by Oertel, Welch and Flexner, Barbacci and others, and the appearance, especially in the kidneys, of peculiar cells by Councilman, denominated plasma cells, and probably derived, according to him, from lymphoid elements. In view of these various apparently unrelated phenomena, we cannot ascribe to the toxin of diphtheria any specific easily-recognizable effect upon the body, but must be content at present with assuming that the toxic activity embraces tissues of different orders and with variously differentiated functions, or else that it affects injuriously some one tissue incorporated with the various specialized tissues. This one tissue seems to be that composing the vascular system, and I am inclined to look upon injury to the vascular walls, especially those of the capillaries, as perhaps the *fons et origo* of the whole set of pathological changes. When the toxin is injected in very large quantities, the effect, as Barbacci[8] states, passes beyond the domain of the vascular system and is manifest in other tissues as well. This view does not, in any way, stand opposed to the one that diphtheria toxin is essentially a cell poison with a special affinity for the nucleus.

Moving parallel with these investigations are those forced upon us by the discovery and applicability of diphtheria antitoxin as a curative agent. The importance of accurately gauging the neutralizing power of antitoxin upon the toxin has led to much study upon the immediate relation of the toxin of diphtheria to its antitoxin. Considerable light has been shed upon the whole subject from this, the biological direction.

It will be remembered that two views of the action of antitoxins have been current. One assumes that the antitoxins stimulate the cells of the body whereby the latter are put into a condition to neutralize or destroy the toxins. The action of antitoxins upon toxins is, according to this theory, indirect. The other theory claims a direct action of antitoxins upon toxins. The actual demonstration of this direct action has been attempted by various observers, but, owing to the difficulties in the way of experiments of this nature, the results are conflicting. The direct action upon toxins of their specific antitoxins has, however, been demonstrated for two other toxins, one of vegetable origin, the toxalbumin of the castor-bean, ricin; and one of animal origin, the toxin in the blood serum of the *Murænidæ* or eels.

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[1] Read by invitation before the Massachusetts Medical Society, June 7, 1898, and recommended for publication by the Society.

[7] Boston Medical and Surgical Journal. 1898.

[8] Centralb. f. allg. Pathol., 1896, No. 8.

Ricin, which was first studied by Ehrlich, has the power to produce an agglutination of red corpuscles both in the body and in extravascular blood. In the body the clots of red corpuscles produced by minute doses of ricin lead to more or less extensive sloughing of the skin if the animal survives. Ehrlich has demonstrated the important fact that susceptible animals can be made immune to large doses of this poison by treating them with gradually increasing doses. The blood and the milk of these immunized animals possess protective powers; are, in other words, antitoxic.

Recently he has shown that the antitoxin acts directly upon the toxin in the test-tube. When ricin is added to blood, kept fluid by citrate of soda, it lumps the red corpuscles together. The masses thus formed settle down. If serum from an immunized animal be added to the blood, this clumping does not take place upon the addition of ricin. The phenomena take place under definite quantitative laws. A given amount of a certain serum neutralizes a given amount of ricin and no more.

Kossel has extended this proof by experimenting with the poisonous blood serum of eels. This serum, of which 0.1 cubic centimetre is sufficient to kill a rabbit weighing a kilogram in three to four minutes, produces, when administered in smaller doses, emaciation, partial paralysis of the extremities, and death after several days. It dissolves red corpuscles. Rabbits can be immunized by injecting very minute doses. When eel serum is added to defibrinated, diluted blood, the coloring matter is promptly extracted from the corpuscles. If, however, some serum from an immunized rabbit be added to the blood beforehand, the corpuscles remain intact. Here, also, the quantity of immune serum needed is directly proportional to the quantity of eel serum used. These experiments are destined to strengthen the hypothesis that antitoxins act upon or combine with their respective toxins and thereby render them harmless. They do not, however, account for the whole process of toxin immunity into which other factors probably enter. Much more persistent experimentation will be needed to clear up the obscurity that still clings to the marvellous action of antitoxin.

To explain more consistently the various phenomena of antitoxic action, Ehrlich has formulated a very ingenious theory relating both to the mode of production of antitoxins in the body and their action upon toxins. This theory, which has been termed latterly the lateral-chain theory of immunity (*Seitenkettentheorie*), seems to have not only stimulated researches but to have gained strength through such researches. In a recent paper [9] I made a very brief statement of this theory, which for the sake of making subsequent statements more intelligible I will repeat here.

If we regard the cell substance as composed of complex molecules with lateral chains, the toxin is assumed to unite with one or more of these lateral chains, thereby incapacitating the cell. This union is due to an affinity of the toxin for the cell substance, which affinity expresses itself to us clinically as susceptibility. If there were no affinity according to this theory, there would be no susceptibility, no disease. If only very minute doses of toxin are introduced so as not to incapacitate the cell substance too much, that part lost by union with the toxin is reproduced by the cell. The repeated injection of gradually increasing doses of poison, if cautiously done, stimulates the cell, so to speak, to an ever-increasing production of that part of itself to which the toxin becomes attached. This overproduction of a specific cell substance leads finally to a shedding into the blood stream where the shed material appears as an antitoxin ready to combine with any toxin for which it possesses definite affinities. This substance, as we know, is effective not only in the blood of the producer but in the blood of other beings into which it is introduced.

This hypothesis has been received with much interest and its general applicability will no doubt be thoroughly tested. Already Wasserman [10] has shown that in harmony with it the substance of the normal spinal cord and of the brain possesses well-marked affinities for the tetanus toxin. This affinity is shown by the fact that a given amount of nervous tissue neutralizes a certain quantity of tetanus toxin. Thus three times the fatal dose of toxin, mixed with one-third of the finely-crushed spinal cord of a guinea-pig suspended in salt solution, produces no effect when injected. The toxin, in other words, has been in some way neutralized by the tissues of the cord. Similar experiments carried out by Bomstein to determine those cell territories having a special affinity for the diphtheria toxin led to no satisfactory results.

Concerning the nature of antitoxins we are as much in the dark as with toxins. We know, however, that they are much more stable substances than toxins. The antitoxic power of blood serum from immunized animals is fairly permanent even after many months. It resists freezing and even exposure to direct sunlight for a short time. It can endure a higher temperature than the toxin without losing its efficacy. Various conjectures have been made as to its character, some claiming that it is a very specific substance, others that the antitoxic power results from a change in certain regular constituents of the blood. It is precipitable by various substances which precipitate the albumins and globulins of the blood and seems to go with them when the serum is separated in layers of different densities by freezing. Smirnow has made the claim that antitoxins can be produced from toxins by electrolysis, but his claims, at least so far as the production of an effective substance goes, seem to grow more shadowy.

When antitoxin is injected into animals, it begins to disappear, according to Behring, on the fourth day, appearing then in the milk and the urine. The blood contains the greater amount, and it would seem that most of it, at least, remains in the blood until it disappears from the body. In horses, which have been actively immunized with toxins, Dzierzgowski found the largest amount of antitoxin in the blood and serous fluids, including the edema formed where the toxin is injected. In the organs there is comparatively little to be detected. Bomstein found that if enough antitoxin be injected into dogs to supply seven units per cubic centimetres of blood, three units were found on the third day, 1.5 on the sixth, 0.3 on the fourteenth, and none on the eighteenth day; the organs did not absorb it, as they contained very little; similarly, very little was found in the urine. These facts agree very well with the restricted period of passive immunity induced by antitoxin.

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[9] The Toxin and Antitoxin of Tetanus. Boston Medical and Surgical Journal, 1898, p. 292.

[10] Berl. klin. Woch., 1898, p. 209.

The occasionally observed toxic effect of antitoxic serum must be ascribed to a peculiar personal idiosyncrasy manifested in the presence of horse's serum. Likewise the rashes and occasional joint affections are referable to the serum and not to the antitoxin. We are, however, fortunate in having horse's serum to use since Uhlenhuth has recently shown that compared with the serum from a number of other mammals, it is by far the least toxic of them all.

In presenting you with a large amount of miscellaneous, somewhat conflicting and but feebly coherent information upon the toxin of diphtheria and its antitoxin, I shall feel gratified if it will simply convey to you the conviction that toxins and antitoxins are realities, entities, whose obscure nature and action need not stand in the way of our belief that we have reached the right path in studying them, and that we need but go on to gain, if not wider and deeper information, at least better practical results in the combating of toxic disease.

However, we still hear voices occasionally raised in medical journals against the diphtheria bacillus as the chief cause of the disease whose name it bears. This is not surprising. Clinical experience is so subject to chance and at the mercy of unknown factors, that discussions of this nature are likely to appear as long as medical science shall be cultivated. The unambiguous results obtained by experimentation in the laboratory, though often too rashly applied, become more and more the guiding star of the young physician as he enters upon his profession. Laboratory work will give, not only a steadiness of the judgment, but also an abiding sense of the circumscription of our knowledge and of the need for its continual rectification. If the laboratory did nothing else, it would amply repay to the profession and its clients the costs of maintenance.

Clinical Department.

PROTARGOL AS A SUBSTITUTE FOR NITRATE OF SILVER IN OPHTHALMIA NEONATORUM AND OTHER CONJUNCTIVAL DISEASES.

BY FREDERICK E. CHENEY, M.D., BOSTON.

Since Professor Neisser's first paper concerning protargol, published in the *Berlin Dermatologische Centralblatt* for October, 1897, the new silver salt has been tried by other gentlemen in urethral gonorrhea and, so far as I have learned, with satisfactory results. In diseases of the conjunctiva it has been used by Dr. Alt,[1] and by Darier,[2] who have reported upon it very favorably, and, probably by many others.

Protargol is a chemical combination of silver with a protein substance and is in the form of a fine yellowish powder. It contains 8.3 per cent. of silver (the nitrate of silver contains 6.35 per cent.) and is freely soluble in water. It produces almost no irritation and is not precipitated by albumin or salt solutions. The fact that it does not stain the skin is something decidedly in its favor, and I have seen no discoloration of the conjunctiva from its prolonged use.

During my recent four months' service at the Massachusetts Charitable Eye and Ear Infirmary I have used protargol in one hundred and thirty cases and it seems to me to possess all the advantages of nitrate of silver, and none of its disadvantages. The very slight degree of irritation which it causes, and in a large proportion of cases the almost complete absence of pain are its chief points of recommendation. A ten-per-cent. solution causes rather less flushing of the eye and discomfort to the patient than a one-per-cent solution of nitrate of silver. A two- or four-per-cent solution can be used without cocaine and the irritation is not, as a rule, more than would be induced by a one-half grain to the ounce solution of zinc sulphate.

There have been an unusually large number of ophthalmia neonatorum cases this summer and I have used this remedy in twenty-five cases. In ten of these I have used protargol in the right eye and nitrate of silver in the left in order that the results might be more accurately compared. A two- or four-per-cent. solution was used, more often the latter, and a one- or two-per-cent. solution of nitrate of silver. The silver was applied to the conjunctiva in the usual way with a camel's hair brush; the protargol in some cases with the brush and in some cases with absorbent cotton, while in a few cases a quarter dropper full of the solution was emptied over the conjunctiva. When applied with absorbent cotton, the cotton was used on the end of a probe and the protargol was sopped onto the conjunctiva, not brushed roughly over it. The lesser degree of irritation in the protargol eye was usually very noticeable. There was not the profuse lachrymation and the eye would often be open in a minute or two after the application, while the nitrate of silver eye would be tightly closed. It was also observed that there was less tendency to the formation of a fibrinous coagulate, the grayish shreds of tissue and "false membranes" in the protargol eyes. In regard to the rapidity of the decrease and duration of the discharge, there is such a variation in different cases and often in the eyes of the individual case, that it is impossible to judge with any degree of certainty. I should say, however, that in this respect the two remedies rank about equal.

As a prophylactic, Dr. William L. Richardson, who has used protargol at the Lying-in Hospital, very kindly writes me as follows:

> "Protargol (two-per-cent.) has been used in every baby's eyes at birth for about three months. None of the redness and swelling of the lids and none of the temporary secretion that immediately follows the use of nitrate of silver (one-per-cent) have been observed. In the few cases of purulent ophthalmia that have been treated with protargol the length of the course of the disease has apparently only been slightly shortened, but the severity of the attack has been decidedly lessened. Whether this has been due to the protargol or not, we have been, during the three months it has been used, more successful in confining the infection to one eye."

The fact that nitrate of silver does cause more or less irritation has, I think, prevented its very general use as a prophylactic outside of lying-in hospitals. If protargol is as valuable, and it in all probability is, this objection is overcome and it is to be hoped that it will be generally adopted in routine practice.

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[1] American Journal of Ophthalmology, January, 1898.

[2] Bull. Gén. de Thérap., Paris, 1898, cxxxv.

I have had but two cases of gonorrheal ophthalmia in the adult this summer and protargol was used in both. In the first the cornea was extensively infiltrated when the patient came in and, as was to be expected, it perforated two days later. The second case was of less severity and made a rapid and satisfactory recovery.

In acute catarrhal conjunctivitis protargol was used in fifty-three cases. Most of them recovered promptly, but perhaps not more rapidly than they might have under some of the other commonly used remedies. In a few cases recovery was slow and they seemed to do better under a collyrium of zinc sulphate and boric acid. It was generally prescribed in a one-half-per-cent. solution, dropped into the eyes every three or four hours. In twenty-nine cases of chronic conjunctivitis it acted very favorably in some, in others it seemed to have no especial action one way or the other, and in one case it proved a decided irritant. In twelve cases of chronic granular conjunctivitis a four-per cent. solution was used, and in three or four cases a ten-per-cent. solution. It seemed as satisfactory in its results as silver nitrate and was certainly much more agreeable to the patient. It was also tried in ten cases of lachrymal obstruction with purulent secretion. In two or three cases where it was prescribed as a one-half-per-cent. collyrium, the discharge ceased entirely within a few days. In other cases where the discharge was profuse it was injected into the sac in a four- or ten-per-cent. solution. The discharge usually lessened, but perhaps not more rapidly than it would have done under various other remedies.

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Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. ROTCH, M.D., AND A. H. WENTWORTH, M.D.

RECOGNITION OF SOME OF THE LESS COMMON DISEASES OF THE NEW-BORN.[1]

An Unusual Case of Acute Sepsis resembling Winckel's Disease.

An infant, nine days old, was brought to the hospital with a history of slight fever and diarrhea on the previous day. On the following day the infant presented symptoms of a very severe character, consisting of marked apathy, extreme cyanosis of the hands and feet, two small gangrenous areas on the hand and foot, hyperemic and hemorrhagic spots in the skin, very rapid respiration, temperature 38.8° C., considerable albumin and hematoidin in the urine, and fluid stools. The gangrene spread rapidly; the infant collapsed; slight convulsions occurred; and death followed in twelve hours. No noteworthy abnormalities were found in the organs at the autopsy. Cultures made at the autopsy from the blood showed a severe acute streptococcus infection. It was ascertained later that the mother had died of puerperal sepsis.

A Case of Hemorrhagic Diathesis.

A premature infant, eight days old, was brought to the hospital in a collapsed condition. The temperature was subnormal; the skin was slightly icteric; there were hemorrhages in the skin and in the mucous membranes of the mouth. The liver and spleen were enlarged. The infant died three days after entering the hospital. The autopsy showed hemorrhagic areas in the lungs, gummata in the spleen, hemorrhages into the kidneys, numerous grayish miliary areas in the liver, a moderate quantity of fluid blood in the colon, and syphilitic osteo-chondritis. Cultures from the organs showed the presence of an organism which was pathogenic for mice and caused septicemia; injected into the peritoneal cavities of rabbits, it produced a hemorrhagic diathesis (bacillus hemorrhagicus Kolb). The bacillus pyocyaneus was also present in the organs. The author believes that this case may be of value in refuting cases of so-called syphilis hemorrhagica neonatorum.

ESTIMATION OF THE ALKALINITY OF THE BLOOD IN RHACHITIC AND OTHER CHILDREN.

Stoeltzner[2] estimated the alkalinity of the blood from rhachitic children and compared the results with those obtained from the examination of the blood from non-rhachitic children. Rhachitis was found to have no influence upon the alkalinity of the blood. These experiments were made with the object of testing the accuracy of Pommer's hypothesis, that the deficiency of lime salts in the newly-formed bone was due to the diminished alkalinity of the blood.

Stoeltzner admits that the results are not conclusive evidence against Pommer's theory, because it is possible that in rhachitic children the lime salts may be so firmly combined in the lymph as to prevent them from becoming deposited in the osteoid tissue.

CONGENITAL RHACHITIS.

Tschistowitsch[3] insists that the only certain method of diagnosis of congenital rhachitis is by microscopic examination of the epiphyseal ends of the long bones and especially of the ribs at their junction with the cartilages. Kassowitz and others found rhachitis in upwards of 80 per cent. of new-born infants. According to Tschistowitsch, this was due to faulty observations. In many of these cases the diagnosis of rhachitis was made from the clinical appearances, and Tschistowitsch claims that apparent abnormalities in the bones of new-born infants, such as enlarged epiphyses, widening of the fontanelles and sutures, cranio tabes, etc., may occur in bones which are normal microscopically. Microscopic examinations were made of portions of the bones from 100 infants. Many of these infants were premature, and the remainder were from a few days to a month old. The conclusions arrived at are that rhachitis begins after birth in almost all cases, but that in rare cases it may begin in the later months of fetal life, if the intrauterine conditions are such as to produce nutritive disturbances in the fetus; the new-born infant may possess a certain predisposition to rhachitis, and, if its surroundings are unfavorable, it acquires the disease. Causes which favor the development of rhachitis are bad hygiene and faulty feeding. Congenital rhachitis is to be distinguished from cases of so-called rhachitis fetalis, better names for which are micromelia pseudo-rhachitica, or chondrodystrophia fetalis. In this disease atrophic and degenerative changes occur which interfere with the nutrition of the growing cartilage. There is some danger of mistaking syphilitic bones and also normal bones, in which the microscopic appearances are somewhat unusual, owing to the rapid growth at this age, for rhachitis.

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[1] H. Finkelstein: Berliner klin. Woch., No. 23, 1895; Jahrbuch f. Kinderheilkunde, Bd. xlvi, 1897, s. 178.

[2] Jahrbuch f. Kinderheilkunde, Bd. xlv, Heft i, s. 29-44; Centralblatt f. allg. Pathologie u. patholog. Anatomie, February 10, 1898, Nos. 3 and 4.

[3] Virchow's Archiv., Bd. cxlviii, s. 140, u. s. 209; Fortschritte der Medicin, February 15, Bd. xvi, s. 135, 1898.

A CASE OF PURULENT INFLAMMATION IN THE JOINT IN THE COURSE OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

Franz[4] describes a case of epidemic cerebro-spinal meningitis, with a joint complication, which occurred in a child two and a half years. The intracellular diplococcus was present, both in the spinal fluid obtained by lumbar puncture and in the purulent exudation in the right ankle-joint. The child died from a secondary streptococcus infection, during the course of which the left elbow-joint and various other joints of the hand became infected.

The autopsy showed that the acute inflammatory process produced by the diplococcus intracellularis in the meninges and in the right ankle-joint had ceased, and but slight evidence of it remained.

The author concludes that the diplococcus intracellularis can produce lesions in the joints as well as in the meninges and that these lesions show a tendency to recovery. This is not the case in joint lesions produced by the streptococcus or staphylococcus.

SYMPTOMS DUE TO INTESTINAL PARASITES.

E. Peiper[5] gives a number of interesting details on this subject. A case in which severe symptoms, resembling those of meningitis, rapidly disappeared after the expulsion of a number of round worms serves to introduce some remarks on the possible explanation of such cases. The common explanation is that the nervous symptoms are reflex, due to irritation by the worms in the intestines. Peiper does not deny the possibility of this, but thinks that another explanation is more probable, namely, that the parasite produces poisons which act on the nervous system. Peiper gives the credit to von Linstow for his researches on the toxicity of the helminths. The older literature contains many references to the dangers of ascarides. Many modern authors report cases in which severe symptoms seemed due to no other cause.

Attacks of severe opisthotonos (Lutz), hysterical convulsions (Mosler), hydrocephalus symptoms, with hemiplegia (Eichburg and others), even fatal nervous symptoms with those of ileus (Mosler), severe anemia (Baelz, Leichtenstern and others), have been traced beyond doubt to these parasites. As to the presence of toxic substances, von Siebold mentioned attacks of sneezing, lachrymation, and itching and swelling of the fingers after handling ascarides. Huber and Hüchenmeister have mentioned the peculiar odor of the round worms, and Leuckart, who observed that it was extracted by alcohol, supposed it might reside in an oil. Von Linstow and Raillet have each noticed swelling of the conjunctiva after working with ascarides. Arthur and Chanson, who found an irritating substance in ascariosis from a horse, found that two cubic centimetres of the juice of such a worm produced violent symptoms, and finally death, in a rabbit. Why severe toxic symptoms are not oftener observed in cases of ascariosis is difficult to explain. Perhaps duration of the disease and number and activity of the parasites are important.

Many interesting details are given regarding the toxic symptoms due to tapeworm and echinococci. Brieger obtained the platinum salt of a substance in echinococcus fluid that was fatal to mice. In the case of tricocephalus, and also of oxyuris, the observations have not been carried so far with some of the preceding, but the symptoms of trichinosis point to a toxic influence. Experiments with the feeding of intestinal worms to animals show a great toxicity. Further experiments are promising of important results.

THE IMPOSSIBILITY OF IMMUNITY AGAINST INFLUENZA.

Clinical experience shows that influenza not only does not confer immunity against future infection, but actually seems to favor it. This is confirmed by animal experiments carried on by Delius and Kolle.[6] By what must be considered a remarkable exhibition of skill and perseverance, they cultivated large quantities of influenza bacilli in pigeon-blood and bouillon and on blood-agar. With these cultures — less readily with filtrates — they were able to kill guinea-pigs, with symptoms resembling those of cholera, typhoid fever, etc. By none of the known methods were they able to produce immunity. In guinea-pigs, rabbits, dogs, sheep and goats, a certain degree of resistance was obtained against the poison, but neither antitoxic nor bactericidal effects were obtained.

CONTRIBUTION TO THE PATHOLOGY OF PERTUSSIS.

Reasoning from the analogy of many other infectious diseases, Fröhlich,[7] of Breslau, has succeeded in discovering that the blood of children suffering from whooping-cough shows an enormous increase in the leucocytes, which is especially marked in the third or fourth week, that is, at the maximum of intensity of the disease. This leucocytosis is principally due to the lymphocytes, which are especially increased as compared with the polynuclear cells and the eosinophiles. In some of the cases this lymphocytosis reached 50 or 60 per cent., an unusually high degree as compared with the other forms of leucocytosis, in which ordinarily a proportion of only 15 to 20 per cent. is reached. In these cases, however, the age of the patient must be taken into account, since leucocytosis with predominance of lymphocytes is, according to Weiss, very common in childhood.

The cause of leucocytosis in pertussis, Fröhlich thinks, can be explained by the fact demonstrated by Blumenthol, that there is a constant increase in the amount of uric acid excreted in the urine of these patients. Moreover, Horbaczewski has shown that in infectious diseases there is a constant relation between the exaggerated elimination of uric acid and the increase in the white corpuscles. The author suggests that the knowledge of the existence of leucocytosis in pertussis can be of practical value in the diagnosis of doubtful cases, especially where the clinical picture is incomplete, and in preventing children with a spasmodic cough, which is not really pertussis, from being exposed to the disease among other children with well-marked and undoubted clinical symptoms.

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[4] Wiener klin. Woch., No. 15, 1897; Fortschrit. der Medicin, February 15, Bd. xvi, s. 143, 1898.

[5] Deutsche med. Woch., 1897, No. 48; American Journal of the Medical Sciences, February, 1898.

[6] Zeitschrift für Hygiene, Bd. xxiv; American Journal of the Medical Sciences, February, 1898.

[7] Jahrbuch f. Kinderheilkunde, 1897, Bd. xliv; American Journal of the Medical Sciences, April, 1898.

ABSCESS OF THE BRAIN IN INFANTS.

Holt[8] sums up a careful study under this title, with the following conclusions:

(1) Abscess of the brain in children under five years is rare.

(2) The principal causes are otitis and traumatism.

(3) It rarely follows acute otitis, but most often neglected cases, and is usually secondary to disease of the petrous bone.

(4) In the cases occurring in infancy without evident cause, the source of infection is probably the ears, even though there is no discharge.

(5) The development of abscess after injury to the head without fracture of the skull is extremely rare. In nearly all of the traumatic cases definite cerebral symptoms show themselves within the first two weeks after the injury. In cases with falls as remote as several months, there is probably some other cause, such as latent otitis.

(6) In a large proportion of the cases only general symptoms are present, and these in very great variety.

(7) Focal symptoms may be misleading unless they are constant, and even then they may depend upon associated lesions, such as meningitis. Motor symptoms only can be trusted, since the sensory symptoms are difficult or impossible to determine in infants or young children.

(8) Rapid progress, fever and a history of injury or otitis generally make a diagnosis from tumor easy. In the slower cases, with little or no fever, valuable assistance may be obtained from lumbar puncture.

(9) From acute meningitis the diagnosis is more difficult, and in the cases in which there are only terminal symptoms the diagnosis is impossible. In the more protracted cases the distinctive points with reference to abscess are the slower and more irregular course and, as a rule, a lower temperature.

MUCUS IN STOOLS.

Adolf Schmidt,[9] who has done such useful work in the application of staining-methods to mucus in sputum, has made a valuable contribution to the present subject, one that is all the more important because the examination of feces is strangely neglected by many. Although the result of the present work may seem trifling, yet it includes a revision of many points that were long thought to be settled, but in fact were not. The details are indispensable to clinical investigators, but it will suffice here to give some of the author's conclusions. The conception of a special disease, enteritis membranacea, cannot be based on the quantity and shape of mucus in the stools. The clinical picture described by Nothnagel, under the name of colica mucosa, may, however, be separated from other forms of enteritis.

The basis of most membranous bodies in feces is mucin. The refractoriness of these masses is due to the constant presence of fats and soaps in considerable quantity. Fibrin has never been positively demonstrated in the mucous discharges. The number of round cells in intestinal mucus is not always so small as might be supposed from the examination of fresh preparations. For the diagnosis of ulcerative processes, the absence of mucus among the cells is more important than the appearance of large numbers of round cells. We have at present no certain guides to the sources of mucus or the cells in the mucus. The strongest evidence of a source in the small intestine is the digestion of the cell bodies, leaving the nuclei free. Except in case of very rapid transit through the intestine, mucus never passes undissolved from the small intestine to the anus.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION,

TWELFTH ANNUAL MEETING, BOSTON, MASS., MAY 17-19, 1898.

(Continued from No. 7, p. 175.)

FURTHER STUDIES UPON THE ARCH OF THE FOOT IN INFANCY AND CHILDHOOD.

Dr. John Dane, of Boston, said that in an article that he had published in the *Boston Medical and Surgical Journal* in 1892 he had stated, as the result of a study of wet tracings of the feet, that the arch of the foot seemed to be present at birth, that it then broke down when the child began to walk, but at the age of three or four years the arch appeared to be again well built up. However, further investigation, made by means of measurements and the study of hardened sections of the feet, had proved these first observations to be erroneous. The measurements referred to were taken from three points on the skin of the inner side of the foot, namely, (1) one over the metatarsophalangeal joint of the great toe; (2) another over the tuberosity of the scaphoid; (3) and a third, nearly over the bearing surface of the tuberosity of the os calcis — in other words, as nearly as possible to the back portion of the arch. A flat piece of wood was pressed against the foot to provide a base-line. In this way, one hundred measurements of the arch showed the average to be 1.5 cm. for a child of about one year of age, 1.51 for a child of two years, and 2.73 for a child between three and four years of age, while for an adult it was 2.7. A study of the hardened sections (mostly frozen) of infant feet, showed that the space is filled up with a pad of fat, and this was the reason for the erroneous impression given in the wet tracings. Each section showed plainly that the bones are in the normal position found in later life, and that the arch of the foot is perfectly formed in the vast majority of cases at birth. In sickly children with weak feet he urged the more extensive use of flat-foot plates; in well-nourished children nature provides a stout flat-foot pad in the shape of a pad of fat.

Dr. Myers said that he had recently been consulted by a number of women who were wearing badly-shaped shoes, and the arch of the foot had been badly flattened. In these cases, by attending to the condition of the tendo-Achillis, and by compressing the metatarsal bone, relief from the pain had been afforded, without any special variety of shoe being worn.

Dr. R. H. Sayre objected to the cork-sole shoe exhibited by Dr. Galloway because the extension passed up to the toes. In one case of metatarsalgia that he had met with, the patient could only get relief by riding on a bicycle and pressing the pedal up into the arch of the foot. This gave immediate relief to the pain. By gouging out a place in the sole of the shoe, as a resting-place for the head of the metatarsal bone, relief was afforded.

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[8] Archives of Pediatrics, March, 1898; American Journal of Medical Sciences, June, 1898.

[9] Zeitschrift f. klin. Med., Bd. xxxii, p. 260; American Journal of Medical Sciences, March, 1898.

Dr. Samuel Ketch, of New York, referred to the case of a woman about twenty-eight years of age, who had been suffering for a long time from the painful affection of the foot under discussion, and who had tried without benefit all sorts of shoes and other appliances. As she had marked family history of gout, she was placed under the classical treatment for this constitutional condition, with the result that the foot symptoms were entirely and absolutely relieved by this internal medication. Personally, he believed that most of these painful affections of the feet were due to general weakness and faulty mechanical conditions.

Dr. L. A. Weigel, of Rochester, said that some years ago he had expressed the opinion that many of these cases would not yield to mechanical treatment unless constitutional measures were used for the treatment of the underlying general condition. Mechanical support of the arch and attention to the shoe had not, in his hands, given the relief that he had hoped and expected would be obtained in most of these cases. He doubted very much the correctness of the explanation given by Morton of the pain experienced in these cases; certainly skiagraphs failed to show the condition as described.

Dr. Goldthwait said that the subject of anterior metatarsalgia could hardly be discussed without referring to conditions affecting the anterior transverse arch. He had explained the greater frequency of this condition in women than in men by the fact that men wear wider boots, which allow the bones to rest more on the ground. The study of skiagraphs of cases would show that in many instances the paroxysmal pain was not due to the crowding of the metatarsal bones together, but to the crowding of the first phalanx of the last toe against the head of the fourth metatarsal bone.

Dr. G. G. Davis, of Philadelphia, suggested that the flat-foot shoe would present a neater appearance if the sole of the shoe was raised on the inside. The simple device of wrapping adhesive plaster around the fourth toe in these cases of Morton's painful affection he had found exceedingly useful and effective.

Dr. Judson said that one objection to this footwear was that there was a liability of the foot to turn around inside of the shoe. It would be partly obviated by the vertical extension whereby, with the aid of buckles and adhesive plaster the foot could be kept from moving around very much inside the shoe.

Dr. Ketch remarked that many of these cases also had weak ankles, and it would be necessary to supplement the high shoe by some lateral support at the ankle, such as lacing.

TUBERCULOSIS OF BONES AND JOINTS.

Dr. Edward H. Nichols, of Boston, entertained the Association in the evening by an address at the Harvard Medical School on the above topic, illustrating it by numerous lantern slides. He said that disease of the bones and joints is considered to be tubercular: (1) upon the more or less constant presence of the tubercle bacillus in these diseased tissues; (2) upon the occurrence of the essential tubercular structures in the diseased bones and joints, that is, the miliary tubercle; (3) when by inoculation of the tissue into susceptible animals general tubercular disease is produced in those animals; (4) when under certain circumstances, by inoculating animals with material from these bones or joints, or by inoculating them with pure cultures of tubercle bacilli and then injuring their joints, there can be produced a tubercular process exactly resembling that seen in tubercular-joint disease in the human subject; (5) when general tubercular disease is secondary to the primary focus in the diseased joint. Injuries of moderate severity favor the occurrence of tubercular disease in bones and joints. In a very large proportion of cases of tubercular disease in these structures there is found a pre-existing focus from which the bone disease has probably been derived — usually either tubercular disease in the bronchial or mesenteric lymph nodes. The process almost invariably begins in the epiphysis of the long bones, but in the short bones the process oftentimes begins in the shaft and spreads rapidly to the adjacent bone. Most writers think that primary synovial tuberculosis is fairly common, but after an exhaustive examination in one hundred and twenty cases of joint disease he was compelled to say that he had never met with a single instance in primary synovitis. In spinal tuberculosis, the shape of the kyphos depends upon the rapidity of the process. An abscess is very commonly found at autopsy, but is often overlooked during life. Abscesses may cause displacement, distortion or constriction of the aorta. Out of twenty cases of excision of the hip-joint that he had examined, the disease was found to have begun in the acetabulum in more than half of the cases. In disease of the knee-joint the process may begin in either of the bones.

Dr. J. Collins Warren, of Harvard University, said that he thought that the occasion was opportune for making the announcement that through the generosity of a lady of Boston, lately deceased, provision had been made for scientific research into the treatment of such diseases as had hitherto proved to be incurable. Regarding the remarks made by Dr. Nichols, he thought an essential point, and one of considerable practical moment, was the extensiveness of the tubercular process in disease of bones and joints. There had been a tendency of late to dwell somewhat more upon tuberculosis originating in the synovial membrane of the joint, but in view of what had just been said it did not seem desirable to adopt such partial operations as erasion of a joint or excision of the synovial membrane. In most cases the old operation of excision of the joint would be found better.

Dr. William T. Councilman, of Harvard University, spoke of the great debt which pathology owes to the surgeon, and dwelt on the far-reaching influence of the work done by such great scientists as John Hunter, Virchow, Billroth and Volkmann.

Drs. R. H. Sayre, V. P. Gibney and **E. H. Bradford** responded on behalf of the Association.

SECOND DAY.

A PROPOSED APPARATUS FOR PREVENTING THE SHORTENING IN THE SITTING POSITION CAUSED BY POTT'S DISEASE.

Dr. A. B. Judson, of New York, raised the question as to whether the position of a patient with Pott's disease might not be improved by giving greater height in the sitting position through the agency of an apparatus to be worn under the clothes, and so constructed as to collapse as the patient rises, and come into play again automatically upon assuming the sitting posture. Such an apparatus should have its bearings not only on the ischiatic tuberosity, but also on the posterior surface of the femoral shaft.

THE ESTABLISHMENT OF AN ORTHOPEDIC APPLIANCE SHOP.

Dr. Lemuel F. Woodward, of Worcester, present by invitation, presented a communication upon this subject. He showed from experience and statistics that while the most satisfactory method, from the scientific point of view, was for a hospital or private orthopedic surgeon to have his own instrument-maker, such a plan was not practicable on the ground of expense except where the amount of work turned out was very large. The next best plan was to contract for the work with a mechanic and a harness-maker, the latter to attend to the covering and padding of the braces.

THE FORCIBLE CORRECTION OF SPINAL DEFORMITY BY STAGES UNDER AN ANESTHETIC.

Dr. V. P. Gibney, of New York, reported five cases which he had treated according to this new method. Notwithstanding the apparent severity of this operation, the children did not seem to react scarcely at all to it, and the chief difficulty afterwards was to keep them quiet in bed. He said that our idea of the necessity of securing anchylosis as soon as possible would seem in the light of this new experience, to require considerable revision. Many cases could be hyperextended without an anesthetic, and in time an almost complete recession of the deformity obtained. From these observations it followed that we should be more than ever on the alert to make an early and accurate diagnosis.

THE IMMEDIATE REDUCTION OF THE DEFORMITY OF POTT'S DISEASE, BOTH WITH AND WITHOUT ETHER.

Dr. J. E. Goldthwait, of Boston, gave a report of his work in this field. He said that at the very outset he had been impressed with the ease with which the deformity could be corrected and the difficulty of maintaining it after it had been corrected. He had found that the treatment was greatly simplified and improved by using a rectangular iron frame with cross-straps on which the patient lies. The head and shoulders are entirely unsupported, so that they make traction on the bodies of the vertebræ. In comparatively few cases had he found it necessary to use additional traction, although the frame was provided with a windlass and ratchet appliance at either end for this purpose. The frame had been originally devised for facilitating the application of plaster-of-Paris jackets. It had been found perfectly possible to carry out this treatment in out-patients. The operation seemed to him justifiable in selected cases,— those doing badly and having a contracted chest and stooping shoulders. He had operated upon only one case in which there was an abscess, but this had done well. If the correction could be accomplished without force it seemed to him that the frequent applications of jackets, gaining a little each time, would be the preferable plan. One should expect a considerable recurrence of the deformity, because from the pathology of the disease he knew that there was very little effort at repair, and one could hardly expect the large gap between the vertebræ to be filled in with bone.

FORCIBLE STRAIGHTENING OF SPINAL CURVATURES UNDER COMPLETE ANESTHESIA, WITH REPORTED CASES.

Dr. John Ridlon, of Chicago, read this paper. He said that his first operation of this kind had been performed on June 23, 1897, and that since that time he had operated on sixteen cases of spondylitis, seven of scoliosis, and one of rhachitic curvatures. He recorded in detail his more recent cases, and stated that four of them had had demonstrable abscesses, one an old sinus, and one paraplegia. No complications arose from the abscess or the sinus, and the paraplegia was positively benefited. In two instances it was not possible to straighten the spine at all with what seemed to him a justifiable amount of force. Pressure-sores had been frequent under the plaster-of-Paris dressing, in spite of the liberal use of padding of felt. He had not been entirely satisfied with the use of the plaster-of-Paris, and felt that he could get equally good results from the use of a posterior spinal brace. In all of the cases the deformity had relapsed to some extent when the jacket and the traction had been removed. As yet only two of his patients were allowed to get up and walk around. In no case did he think he had obtained a reliable bony solidification at the point of the disease. The risk involved in this new method of treatment seemed to him to be only the danger of general tuberculosis or tubercular meningitis, just as there is after forcible straightening of tubercular joints. This risk he estimated to be at least ten per cent. The presence of abscess did not seem to add to the danger if reasonable gentleness were employed. It was reasonable to suppose that the period of treatment would be prolonged by this method of forcible straightening. Ordinarily only a pressure of a few pounds would be necessary to rectify the deformity, while an assistant made traction on the lower and upper extremities.

(To be continued.)

Recent Literature.

Diseases of the Nervous System. By Charles E. Beevor, M.D., Lond., F.R.C.P. 12mo., pp. xvi, 432. With twenty-eight illustrations and thirteen plates. Philadelphia: P. Blakiston, Son & Co. 1898.

The words "Practical Series" on the back of this volume give apparently the chief reason for its existence, although in the preface its objects are said to be "to enable students and practitioners to know how to examine patients suffering from diseases of the nervous system, and assist them to marshal their facts in a definite order, and also to serve as an introduction to the study of the larger standard works on neurology." The subject, however, is treated as fully in the sections on diseases of the nervous system in the best works on internal medicine, and they serve the purpose of an introduction to the study of neurology fully as well as any manual of this size can do, so that the special need for its production is not apparent. The book, too, is hardly worthy of its author's reputation. It is clearly written and well arranged, but it is hardly abreast of our present knowledge; in fact, almost every chapter reads as if it were written on the basis of our knowledge of five or ten years ago. Nothing is said, for example, of infection as a possible cause of anterior poliomyelitis, Landry's paralysis is said to have no pathological basis, pseudo-hypertrophic paralysis and idiopathic atrophy are regarded as distinct diseases, anemia and hyperemia of the brain are still discussed, and various affections are not even mentioned, such as hereditary cerebellar ataxia and Gilles de la Tourette's disease. Even were such a manual needed, therefore, the present volume can hardly be recommended.

Yellow Fever in the West Indies. By Izett Anderson, M.D., Edinburgh, etc. London: H. K. Lewis. 1898.

Dr. Anderson offers as his credentials to the reader of this little book a residence and active medical practice in British Guiana and Jamaica, extending over thirty-four years. It is a small octavo of one hundred pages, which covers the ground which it attempts in a simple, clear, plain, practical manner. It gives the results of the personal experience of a good observer and careful practitioner. The book has a timely interest for those who are professionally or otherwise interested in the welfare of our troops in the present West Indian Campaign, and may be warmly recommended. There is no book-making about it.

Diseases of the Eye. By Edward Nettleship, F.R.C.S. Revised and edited by W. T. Holmes Spicer, M.A., M.B., F.R.C.S. Pp. 528. Philadelphia: Lea Bros. & Co. 1897.

A volume which can successfully pass through six English and five American editions may reasonably be considered as possessing popular favor through merit of its own and for this reason is the more enduring than if it were the result of passing fancy. This fifth American edition has again been thoroughly modernized through the efforts of Mr. Holmes Spicer, and the final chapter which discusses the examination of railway employés has been subjected to careful revision by its author, Professor Thomson. This book may be considered one of the best of its kind, containing, as it does, the essentials of ophthalmology within convenient dimensions.

Protection of British Troops by Means of the Medical Supervision of Women. — A memorial signed by upward of one thousand mothers in various parts of the country has been forwarded by the Countess of Carlisle to Lord Salisbury, protesting against the principle involved in protecting the health of British troops by the system of medical supervision of women in the cantonments. — *Medical News.*

Congress of Experimental and Therapeutic Hypnotism. — A Congress of Experimental and Therapeutic Hypnotism has been arranged to follow the close of the International Medical Congress in Paris in the month of August, 1900. Four sections are planned: (1) The clinical and therapeutic relations of hypnotism and suggestion; (2) their medico-legal relations; (3) their psycho-physical relations, and (4) their applications in pedagogy and sociology.

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THE HEALTH OF THE ARMY.

The return of the Santiago Army from Cuba has brought home to the people of this country the very severe climatic conditions to which our troops have been exposed, and which have entailed such a vast amount of sickness and suffering.

The description of the condition of the troops disembarked at Montauk Point, as well as of the Spanish troops just starting for home on their transports, goes to prove the accuracy of the opinions expressed before this campaign as to the deadly character of the climate at this season of the year. It appears that not only was there a vast percentage of sick, but even the men considered well enough to perform their duties showed plainly the debilitating effects of the malarial and infectious diseaes, with which the whole army appears to have been saturated. The country is to be congratulated that this campaign was a brilliantly short and decisive one. Otherwise it is appalling to think what might have been the result.

In view of the great amount of fever, both typhoid and malarial, which has developed not only in this army, but in the reserve forces in the camps in the Southern States, the flood of criticism to which the War Department is subjected is perhaps not unnatural.

There are, however, some reasons for thankfulness which should not be forgotten. For example, we have thus far escaped a serious epidemic of yellow fever. The medical reports thus far received show that the wounded of the army have enjoyed the advantages conferred by the modern aseptic treatment, conditions which have not yet been obtained in any campaign on so large a scale hitherto recorded.

Amongst all the varied and somewhat exuberant mass of complaint which now prevails in the public press, there are undoubtedly some points which may be deemed worthy of critical review. Among these may be mentioned the insufficiency and bad quality of the rations supplied to our soldiers, exhausted by the campaign and wasted by disease, since the surrender of Santiago and on the transports returning to this country.

The rations issued, it is true, were the regular army rations, but it seems as if provision might have been made to meet the extraordinarily unsanitary conditions of this campaign, and it would have not have been asking too much to have made some special provision for the sick on the transports, even if somewhat hastily dispatched to the seat of war.

If it was not possible to accomplish this by the machinery at present at our command, then the system which at present prevails in our commissary department is in need of a thorough revision to bring it abreast of the exigencies of modern warfare.

It needs but a glance at the record of the various camps in the South where our reserve forces have been stationed to show there has been a great amount of sickness, and if reports are to be believed, there appears to have been a considerable amount of avoidable disease. The increasing number of typhoid fever cases represents a condition which ought not to prevail in well ordered camps arranged with reference to modern sanitary conditions. Much of this sickness has been undoubtedly due to the crude state of discipline which has obtained in a hastily organized volunteer army. The fact that in certain regiments the morbidity has been kept as low as three to four per cent., while one-quarter to one-third of the total force of other regiments quartered in the same camp under exactly similar conditions were on the sick list, shows conclusively that the rigid enforcement of sanitary regulations, if achieved by all regimental and company commanders as successfully as by a few, would have prevented a vast amount of disease. The hasty development of a large volunteer force, together with a liberal infusion of politics into the appointment of officers, may in a measure account for the somewhat amateur basis on which parts of this campaign have been conducted. The failure to distribute medical supplies may be noted as an example of mismanagement probably resulting from this cause.

No doubt the many graphic reports of the condition of our brave soldiers as published in the papers are harrowing in the extreme, but we must remember that time will probably modify our criticisms, and when investigation brings out the facts, the public will be disposed to take a more lenient view of the conditions.

Let there be as thorough an investigation of the conduct of the war as is essential to the future usefulness of our army in all its departments, but do not dim the glory of a brilliant campaign with unreasonable and bitter complaint.

It is needless to say that we feel as keenly as any one the terrible loss of life which this campaign has involved. We feel sure that when calmer views prevail the public will see that much sickness and suffering was unavoidable in such a campaign as we have conducted.

As time progresses it is pleasant to note the fact that evidence to the effect that the medical department of the army has done noble work in the face of the recent appalling emergencies due in part to causes unavoidable, and in part to mismanagement in other departments, continues to accumulate and that the stand taken in our recent editorial, that the medical department was being unjustly blamed for matters beyond its control, is being amply justified.

The testimony of unpredjudiced observers to the work done by the army medical department is deservedly complimentary. The Honorable Sherman Hoar, who has been looking after the Massachusetts Volunteers in the southern hospitals as the agent of the Volunteer Aid Association has had an excellent opportunity to observe the work of the medical department of the Army.

He said in a dispatch to the ***Boston Transcript:*** "In fact the medical department of the army, though overworked, is doing splendid service for our men wherever I have been. Every carefully considered suggestion is quickly received and acted on, and the malignant criticism too often seen is for the most part undeserved. Mistakes have been made, undoubtedly, but every effort possible is being made to prevent their repetition. I send this in justice to the medical department, who, from the surgeon-general down, are doing an indefatigable and valuable work in an emergency which few can appreciate unless they have been in touch with it, as I have been for the last two months. The War Department," said he, "is doing all in its power to take care of the sick."

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THE CONDITION OF THE TROOPS STILL AT SANTIAGO.

Dr. E. G. Brackett, of Boston, under the auspices of the Volunteer Aid Association, has been engaged in the distribution of supplies in Santiago, with the help of General Wood, the present military governor. In a letter to Secretary Hayes of the Association, which has recently been published, Dr. Brackett gives some interesting information as to the conditions in Santiago, which must be met. Among other things, he states that the sickness prevailing among the troops could in great part be prevented by a proper quantity of the right kind of food and medicine.

He says: "The most urgent need seems to be for the simple forms of foods. The fever, which is extremely prevalent and severe, leaves the men in a condition in which the stomach refuses anything but the simplest of light food. At this time they can take Mellin's food, and others of like nature, granum, malted milk, beef peptonoid, powder, etc. There is a need of this which I cannot urge too strongly, and if such can be sent it will be the means of saving many lives. There is also a great need of hospital supplies, particularly disinfectants and medicines. This is general, and their necessity has been urged on me by the authorities to-day. I send you this as a preliminary report. "The conditions here defy my description.

The mortality in the city is very high, sixty and above daily, and it is approaching the worst season of the year. The condition of things is pitiful, and were it not for the most admirable work done by General Wood since taking command of the city it would be impossible for one not here to imagine what the condition of the place would have been. I want to enforce on you how much our men need these things. When you see them, particularly the officers, come to you and beg for these foods, etc., not for themselves, but for the others, it is too much for the hardest heart, and the supplies I have here are not a drop in the bucket of necessity."

It seems without the bounds of possibility that these demands may not be met and at once by those in authority. If there has been mismanagement on the part of the Commissary Department in the past, there is certainly no reason why it should continue now that the conditions are simplified by the cessation of the war.

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MEDICAL NOTES.

A Monument to Dr. Pepper. — A memorial bronze statue is to be erected in Philadelphia to the late Dr. William Pepper.

A Check to the Higher Education of Women. — The movement in favor of the higher education of women in Germany has just received a severe check. At the conference at Wiesbaden of the German Medical Association, numbering over 15,000 members, a motion was unanimously adopted against the admission of women to the study of medicine.

A Correction. — In an editorial on "Hospital Reports," the ***Medical News*** states that the Johns Hopkins Hospital of Baltimore, the Massachusetts General of Boston and the Presbyterian of New York, have set the example in publishing reports. This is a mistake, so far as the Massachusetts General is concerned. The only hospital in Boston to publish such reports is the Boston City Hospital, not the Massachusetts General.

The Water at Sternberg Hospital. — Advices lately received from Sternberg Hospital at Chickamauga are to the effect that the water supply is infected with typhoid fever, and there are no proper facilities for boiling it. There are now nearly 400 patients at this hospital camp, a fact which gives abundant testimony to the wisdom of removing the regiments previously at Chickamauga to other encampments.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — Dur- the week ending at noon, August 24, 1898, there reported to the Board of Health, of Boston, the owing numbers of cases of acute infectious disease: theria 27, scarlet fever 4, measles 9, typhoid ver 25.

The Hospital Ship "Bay State." — The hospital ship *Bay State* is now at Santiago, and a large amount of supplies have been landed and distributed for the benefit of the sick remaining there. The *Bay State* is expected to sail this week for Montauk Point with a full list of sick soldiers, and probably is already under way.

Suicide at Thirteen. — It is reported that a boy of thirteen has deliberately committed suicide by hanging in Connecticut, as the result of punishment inflicted for neglect of work. The occurrence is of interest in connection with Ireland's researches on "Suicide in Children" recently alluded to in the Journal.

Arrival of the Sick Soldiers in Boston. — The steamer *Olivette* arrived at Boston on August 23d, with 200 sick and convalescent soldiers on board, 60 of whom were taken to the Boston City Hospital, 48 to the Massachusetts General, and the rest to the Carney, the Marine Hospital at Chelsea, and other institutions. The landing and transportation to the hospitals were rapidly and comfortably accomplished, and a visit to the men at the City Hospital August 24th, 24 hours after their arrival, showed that in many cases good care, food and nursing had already resulted in improvement. Falling temperatures were the rule, and enormous appetites pointed plainly to the part which lack of proper food had played in bringing the men to their present condition. Only a small proportion of these men were members of the Massachusetts Volunteer Regiments. There were many regulars and volunteers from all parts of the West and South.

NEW YORK.

Death of Dr. Otterson. — Dr. William Carter Otterson, of Brooklyn, died at his summer residence at Long Branch, N. J., on August 17th, at the age of seventy. He was born on Long Island, and was graduated from the College of Physicians and Surgeons, New York. He had practised for twenty-five years in Brooklyn.

Death of Dr. Owen J. Ward. — Dr. Owen J. Ward, an old and well-known practitioner in the southeastern district of the city, died on August 17th, at the age of fifty-eight. He was graduated from the Medical Department of the University of the City of New York in 1865, and afterwards served as house-surgeon at St. Vincent's Hospital. He was visiting-surgeon at Gouverneur Hospital from its opening up to the time of his death.

A Hospital on Bedloe's Island. — The Government has decided to establish a military hospital on Bedloe's Island, in the harbor. The buildings standing on a large space of ground to the west of the colossal statue of Liberty are to be utilized for this purpose, and Lieutenant-Colonel J. Morris Brown, in charge of the medical supply bureau at the United States Army Building, has been ordered to have one hundred cots in readiness for occupancy there.

Death of an Army Surgeon from Typhoid.—Among those who died on board the United States hospital ship *Relief*, which arrived on August 19th, from Porto Rico, was Surgeon-Major Lawrence S. Smith, of the First Regiment, Pennsylvania Volunteers. His death was due to typhoid fever, which he contracted in attendance upon the men of his command. Dr. Torney and his corps of assistants on the *Relief* were ably assisted in their arduous duties during the voyage by Lieutenant-Colonel Nicholas Senn, of the Volunteer Medical Service, who was a passenger and accompanied from Porto Rico by Dr. R. Tomatsari, a surgeon of the Japanese Navy.

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Miscellany.

THE EDINBURGH MEETING AND MEDICAL WOMEN.

Time changes all things, and in this respect it is not a little remarkable to note, as the *Medical Press and Circular* remarks, the progress of medical women in the British Medical Association. A few years ago, at one of the annual meetings, the proposal to admit women to the membership of the Association was rejected with scorn. But the restriction was afterwards rescinded, and since then a medical woman has held the office of president of one of the Branches. At Edinburgh a further proof was afforded of the progress of medical women. A special dinner was organized of those attending the meeting, at which forty-two were present, and of their number all save three were members of the British Medical Association. Mrs. Garrett Anderson, M.D., who was one of the speakers, said that all was not yet won, for medical women had still something to gain before they could be regarded as being upon an absolute equality with medical men. The occasion and place of this special convivial meeting was a fitting one, inasmuch as it was in Edinburgh that the battle in this country of medical education for women was fought and won.

This is of interest in connection with the recent position taken by the German physicians, who in a spirit of renewed conservatism have filed definite objections to the admission of women to medical practice. There can be absolutely no question that women have entered the profession to stay, and their work certainly justifies their claim to recognition.

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DYSENTERY AND "DEAD ENDS."

An interesting and instructive outbreak of dysentery has recently occurred among the inmates of the Hebrew Orphan Asylum at Amsterdam Avenue and 136th Street, New York City. There were nearly 150 cases of illness, with five deaths, and it was for a time very difficult to fix upon the cause of the epidemic. The asylum occupies a spacious and commodious modern building, and its location is one of the finest in the city. It stands upon one of the highest points on Manhattan Island, on a bluff facing eastward which overlooks the Harlem district, with the land sloping downward from it in each of the other three directions, and surrounded by ample pleasure-grounds. During the fourteen years that the institution has been located at its present site it has cared for almost seven thousand children, and during this time, up to the recent outbreak, there have been but five deaths among them from natural causes.

A careful investigation by the Board of Health has now shown that the cause of the trouble was the drinking of Croton water which had become stagnant in pipes known as "dead ends"; the water being used unfiltered and unboiled. The name "dead ends" is given to cul-de-sacs of the city's water pipes that terminate in locations where population is sparse or where abutments on the river-front forbid the running of a pipe to connect the dead ends and thus make the water supply continuous. In his report to the sanitary superintendent, Dr. Edward W. Martin, Chief Inspector, states: "It would appear that the water is drawn near to or at a dead end, with the result that it contains at times a very large proportion of organic matter in suspension and solution; and, while the material is entirely of vegetable origin and non-pathogenic in character, yet it is present in sufficient quantities to render the water unfit for domestic uses unless filtered. It is necessary, therefore, to have the dead ends blown off at such frequent intervals as may be necessary to cause the water to be suitable for drinking purposes." In conclusion, he recommends that the Department of Water Supply be requested to either cause the dead ends to be blown off when necessary, or, better still, to so arrange the connections with the supply mains as to do away with the dead ends. The Water Department immediately took action in the matter, and Commissioner Dalton, the head of the department, announces that he has ordered the blowing-off process kept up during the summer and that he intends to have the dead ends abolished wherever possible. According to Chief Engineer Birdsall, there are about two hundred of these dead ends in the Boroughs of Manhattan and the Bronx.

In the meanwhile the most active measures have been taken for the welfare of the children of the asylum, the sick ones having been removed to the sanitarium of the institution at Rockaway Beach, and the well ones to an additional seashore sanitarium rented temporarily.

METEOROLOGICAL RECORD

For the week ending August 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....7	29.92	78	87	68	61	70	66	W.	S.W.	12	10	F.	O.	
M...8	29.84	82	91	72	82	79	80	W.	S.W.	5	9	O.	R.	.13
T... 9	29.88	76	82	71	80	70	75	W.	W.	8	6	O.	O	.03
W..10	29.96	69	75	63	77	98	88	W.	N.E.	4	10	O.	R.	.18
T...11	30.01	64	67	62	92	97	94	N E.	N.E.	12	8	O.	R.	1.97
F...12	30.08	67	72	62	85	88	86	W.	S.	7	10	O.	O.	T.
S...13	30.08	73	81	65	87	69	78	S.W.	N.W.	12	8	O.	O.	.30
☞														

* O., cloudy; C., clear; F., fair; O., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 13, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Whooping-cough.
New York	3,438,899	1522	811	25.02	7.20	20.52	.78	1.50
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	443	164	20.24	11.96	15.64	2.99	.69
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	194	97	9.36	9.88	2.60	3.12	1.04
Boston	517,732	283	156	30.80	4.55	28.00	1.05	—
Cincinnati	405,000	79	—	12.60	7.56	9.82	1.26	2.52
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	104	73	34.92	10.67	20.13	.97	1.94
Washington	277,000	96	33	10.40	17.68	4.16	1.04	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	58	28	12.04	12.04	—	—	5 16
Nashville	87,754	27	12	11.10	14.80	7.40	3.70	—
Charleston	65,165	35	10	25.74	8.58	17.16	8.58	—
Worcester	105,050	31	20	58.14	6.46	58.14	—	—
Fall River	95,919	51	33	43.22	9.80	39.20	1.96	1.96
Lowell	87,193	51	26	39.20	3.92	37.24	1.96	—
Cambridge	86,812	40	24	45.00	17.50	42.50	—	—
Lynn	65,220	—	—	—	—	—	—	—
New Bedford	62,416	27	24	70.30	—	70.30	—	—
Somerville	57,977	25	12	52.00	4.00	44.00	—	—
Lawrence	55,510	28	14	35.71	10.71	35.71	—	—
Springfield	54,790	28	16	42.84	—	42.84	—	—
Holyoke	42,364	22	13	45.65	—	41.50	—	—
Salem	36,062	15	9	59.95	—	46.66	—	13.33
Brockton	35,353	7	1	—	—	—	—	—
Malden	32,891	15	11	39.99	—	39.99	—	—
Chelsea	32,716	21	13	—	4.76	—	—	—
Haverhill	31,406	13	6	30.76	7.69	15 38	7.69	7.69
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	—	—	—	—	—	—	—
Fitchburg	28,392	10	9	70.00	10.00	60.00	—	10.00
Taunton	27,812	12	5	41.65	16.66	33.33	—	—
Quincy	22,562	5	3	60.00	—	60.00	—	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	5	2	60.00	—	60.00	—	—
Everett	21,575	—	—	—	—	—	—	—
North Adams	19,135	6	5	16.66	—	16.66	—	—
Chicopee	17,368	9	5	66.66	—	55.55	11.11	—
Medford	15,832	4	3	50.00	—	50.00	—	—
Newburyport	14,794	7	0	—	—	—	—	—
Melrose	11,965	4	2	25.00	—	25.00	—	—

Deaths reported 3,286: under five years of age 1,641; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 876, consumption 280, acute lung diseases 156, diarrheal diseases 722, typhoid fever 46, whooping-cough 45, diphtheria and croup 32, cerebro-spinal meningitis 16, measles 9, scarlet fever 5.

From diphtheria and croup New York 22, Baltimore 4, Philadelphia 3, Washington 2, Boston 1. From cerebro-spinal meningitis New York 7, Washington and Somerville 2 each, Philadelphia, Boston, Cambridge, Holyoke and Westfield 1 each. From measles New York 4, Boston 2, Baltimore, Washington and Providence 1 each. From scarlet fever New York 3, Boston and Pittsburg 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending August 6th, the death-rate was 18.3. Deaths reported 3,932; acute diseases of the respiratory organs (London) 174, diarrhea 574, whooping-cough 71, diphtheria 52, measles 45, fever 29, scarlet fever 23.

The death-rates ranged from 10.2 in Brighton to 25.6 in Salford; Birmingham 20.0, Bolton 14.9, Croydon 14.7, Gateshead 14.1, Hull 12.0, Leeds 19.9, Liverpool 24.4, Manchester 21.3, Nottingham 15.7, Sheffield 22.4, West Ham 16.4.

SOCIETY NOTICE.

New York State Medical Association. — The regular annual meeting of the New York State Medical Association will be held at 64 Madison Avenue, New York City, on October 18, 19, and 20, 1898. The following is the preliminary programme:

A Practical Demonstration in the Reduction of Infantile Mortality, by Dr. E. F. Brush, of Mount Vernon; The Pneumogastric Nerve in the Production of Stomach Disease, by Dr. Julius Pohlman, of Buffalo; The Coccyx, by Dr. J. E. Walker, of Hornellsville; Drugs *versus* Cardiac Insufficiency, by Dr. O. T. Osborne, of New Haven; The Passing of Alcohol, by Dr. J. M. Farrington, of Binghamton; New Method of Amputation at the Knee-Joint Applicable in cases of Senile Gangrene of the Foot, by Dr. Stephen Smith, of New York; Anthropological Rambles in the Orient, especially in the Island of Java, profusely illustrated with stereopticon views, by Dr. H. Ernst Schmid, of White Plains; Dental Pathology in its Relationship to General Health, by Dr. Dwight L. Hubbard, of New York; Subnormal Temperature, by Dr. Leroy J. Brooks, of Norwich; Ancient and Modern Animal Products used as Medicines, by Dr. T. J. Acker, of Croton-on-Hudson; The Treatment of Cases of Pulmonary Tuberculosis that cannot go away from Home, by Dr. Delancey Rochester, of Buffalo; Some Observations of General Interest Regarding the Course and Management of Cataract, by Dr. J. H. Woodward, of New York; Technic and Use of Saline Infusion, by Dr. Thomas F. Reilly, of New York; What to Do to be Saved, being the Conclusion of the Inquiry into the abuse of Medical Charity, by Dr. Thomas J. Hillis of New York; True and False Medical and other Charities, by Dr. Wickes Washburn, of New York; a paper by Dr. Charles Phelps, of New York, title not yet announced; Genital Neuralgia and the Genito-reflex Pains, by Dr. F. J. Hammond, of New York; Lantern Slide Exhibition, by Dr. S. Alexander, of New York; A Case of Attempted Obliteration of the Deformity in Pott's Disease, by Dr. Charles Alling Tuttle, of New Haven; Notes on Neuralgic Affections of the Head, by Dr. Gustavus Eliot, of New Haven; The use of Catgut Sutures in Ventrofixation of the Uterus, by Dr. J. E. Janvrin, of New York; Traumatic Tetanus — Report of a Case Following an Attempted Operation, Treatment, etc., by Dr. Z. J. Lusk, of Warsaw; Some Thoughts on the Rational Treatment of Disease, by Dr. Chauncy P. Biggs, of Ithaca; Senility, by Dr. F. W. Higgins, of Cortland; A Case of Extrauterine Pregnancy Operated upon at Term, by Dr. Ely Van De Warker, of Syracuse; Memoranda, by Dr. H. D. Didama of Syracuse; Diagnosis and Surgical Treatment of Renal Calculus, by Dr. N. Jacobson, of Syracuse; Eye Lesions in some Diseases of the Kidney, by Dr. H. S. Oppenheimer, of New York; Insanity Following Surgical Operations, by W. D. Granger, of Bronxville; Dermoid Cysts of the Ovary, by Dr. C. E. Fritts, of Hudson; The Operative Cure of Inguinal Hernia in Men, by Dr. E. D. Ferguson, of Troy; Urethral Stricture, by Dr. J. W. S. Gouley, of New York; A Discussion on Intestinal Obstruction, comprising the following papers: Introduction, by Dr. Parker Syms, of New York; The Causes of Acute Intestinal Obstruction with a Description of their Mechanism, by Dr. E. D. Ferguson; The Causes of Chronic Intestinal Obstruction with a Description of their Mechanism, by Dr. J. D. Bryant of New York; Intestinal Obstruction due to Impaction of Feces, Gallstones, Foreign Bodies, etc., by Dr. J. W. S. Gouley; "The Diagnosis and Indications for Treatment of Acute Intestinal Obstruction," by Dr. J. D. Rushmore, of Brooklyn; "The Diagnosis and Indications for Treatment of Chronic Intestinal Obstruction, by Dr. Leroy J. Brooks; Intestinal Obstruction due to Intussusception and Volvulus, by Dr. John F. Erdmann, of New York; and the Technic of Operative Treatment of Intestinal Obstruction, by Dr. Frederick Holme Wiggin, of New York.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING AUGUST 11, 1898.

McAdam, W. R., assistant surgeon. To report at Louisville, Ky., for duty and assignment to quarters. August 6, 1898.

Gwyn, M. H., assistant surgeon. To report at New York, N. Y., for duty and assignment to quarters. August 6, 1898.

Hobdy, W. C., assistant surgeon. To proceed to Cape Charles Quarantine, Fort Monroe, Va., for duty and assignment to quarters. August 9, 1898.

RECENT DEATHS.

Jan Joseph Bastianus Verrmyne, M.D., M.M.S.S., formerly of New Bedford, died in Francestown, N. H., August 16, 1898, aged sixty-three years.

C. B. Belt, M.D., M.M.S.S., of South Boston, died on August 23, 1898, after a brief illness from septicemia. He was born in Hartford, Ct., September 16, 1847, graduated at the Harvard Medical School, in 1871 and served as house officer at City Hospital, where he remained for a year. He was a member of the staff of the Carney Hospital. He was married, and his widow, three sons and a daughter survive.

BOOKS AND PAMPHLETS RECEIVED.

Tubercular Peritonitis. By F. G. Finley, M.D., Assistant Professor of Medicine, and Associate Professor of Clinical Medicine, McGill University; Attending Physician, Montreal General Hospital. Reprint. 1898.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By Patrick Manson, M.D., LL.D. (Aberd.), London. One volume of 625 pages, 12 mo, illustrated by 88 wood-engravings and two colored plates. New York: William Wood & Co. 1898.

Ovariotomy and Abdominal Surgery. By Harrison Cripps, F.R.C.S., Operator for Abdominal Sections to the ward for Diseases of Women in St. Bartholomew's Hospital, etc. London: J. & A. Churchill. 1898. Philadelphia: P. Blakiston, Son & Co.

Lecture.

TALKS ON THE HISTORY OF MEDICINE.[1]

No. II. — Physiology in the Sixteenth Century: Paracelsus and Bruno.

BY DAVID HUNT, M.D., BOSTON.

In our first talk we attempted to show that during all the long-drawn barbarism of the Middle Ages there was but little in the way of literature or school to indicate the existence of a distinct medical body. Whatever there was of medical thought and discipline is to be sought as an integral part of some of the various philosophical systems. These relations hold true during the fifteenth century, but the old divisions have been broken up; in literature, in art, in philosophy, new movements are gathering headway.

Without attempting, at present, to trace these general features of the period, I wish to call your attention to a somewhat detailed account of one man of whom we have heard but little, but whose life and thought gather in a wonderful manner the scattered, frayed-out doctrines of the Middle Ages. John Krebs, or von Cusa, Cardinal and Bishop of Brixen, was born in 1401. After his school days at Deventer he studied at the University of Padua. He was particularly devoted to mathematics and science, and it is fair to presume that this bent was the cause of his selecting Padua for his university studies. Padua at this time was the Mecca of the physicians of northern and eastern Italy; it was the stronghold of Averroeism; it was not favored by the clergy, who generally regarded it as a centre of unbelief; it was not favored by the very first partakers of revived Hellenism, for it was distinctly Arabian; in short it was the centre of of all ot the hard-headed, materialistic Venetian, as opposed to the more poetic Tuscan or Florentine thought. Cusa, after his graduation, turned his attention to the practice of law, but an unfortunate beginning disgusted him with the profession and he took orders as priest. As was natural he played a prominent part in the liberal reform branch of the Council of Basle, where Cäsarini, his professor of mathematics at Padua, was president. Cusa was outspoken at this council; in fact he became very prominent in the party of reform within the church, particularly so upon the question of the supremacy of the councils over the pope. In general he followed the lead of Gerson, chancellor of the University of Paris, of a generation earlier. We allude to the fact chiefly as indicating the sympathies natural between Padua and Paris. At the Council of Basle he was very intimate with Aneas Sylvius, a young man fresh from Siena, with a scandalous tendency in his poetry to exhibit an erotic nature, which later, as Pope Pius II, he deeply mourned. Cusa afterwards went with an embassy to Paris and to Constantinople; he returned from the latter place bringing a number of valuable manuscripts. Here, as you will see, he was something of a pioneer. Later he was sent on a mission to reform the monasteries of Germany and the Netherlands, — he performed his work with great credit. In these active days he had abandoned a good deal of his old liberalism; he no longer denied the supremacy of the pope over councils; all his energy and all his intellectual power was confined within safe channels; he was too honest to become a politician of the church, like Sylvius, but, like many a scholar, he grew very long antennæ, which he needed in his energetic intellectual life, if he were to be preserved from harsh contact with heresy. I believe Thomas Carlyle would have appreciated exquisitely this side of the life of Nicholas von Cusa.

What Cusa thought is most readily exhibited by extracts from the "De Docta Ignorantia," which was his real confession of faith. According to this the "most perfect knowledge attainable can only teach man his ignorance. Man is wise as he knows that he is ignorant. Understanding is related to truth as the polygon to the circle: the more angles the nearer the approach to the circumference; but they never become identical—yet the essence of things is their truth. As we learn things thus imperfectly, the more their differences strike us. The highest likeness, where nothing of difference is distinguishable, is above our comprehension; but we may strive to realize in thinking, something like the condition where differences disappear. Since now the absolute greatest is all, and the absolute smallest cannot be smaller, they are coincident; the absolute greatest is a unity: it contains all; but one as a number cannot be called absolute unity, since numbers *increase*. One cannot be the absolute greatest or least; it can only be the beginning of numbers as smallest and the end as greatest. Our comprehension of number implies the necessity of unity. Now unity is eternal, likeness is eternal, so must their union be eternal and this is the mystery of the threefold unity, as Pythagoras taught. We have, then, the Father, the unity; the Son, the equality or likeness; and the Holy Ghost, the union. We also have the three-one in nature, as the intellect; the knowing, embracing the intelligible, and the act of knowing. Every unity has in it the trinity, the indivisible, the discrete, and the connection between them. The universe is a secondary greatest, not like God, including all things in a universal equality or likeness, but including all things in their separateness, their differentiating qualities, thus constituting not a unity but plurality; it is simply an emanation of the limited greatest from the absolute greatest. The individual object is the universal in particularity, as the peripatetics taught. The universe is also a trinity, not like God, where three distinct personalities are absolutely one, but a trinity consisting of the potentiality of being, the limitation of this potentiality and the union of potentiality and limitation into a real being (*nexus* of both). As Plato thought, the world has a soul which is its universal active principle, consequently the world moves, the stars and the heavens move. The innumerable stars have their inhabitants, those of the sun probably more illuminated and spirited than those of the moon, subjected as they are to lunar influences. The earth has minerals in the place of bone, rivers in the place of blood, vessels and trees in the place of hair. Fire in many ways resembles God, but God is absolutely independent of things. The very highest conception of culture is to elevate the spirit until all contradictions coincide so that God shall appear to us the absolute greatest and absolute smallest."

Whewell notices Cusa as a forerunner of Copernicus (the name is not in the index of authors in the "History of the Inductive Sciences" but the mention will be found on page 261, and in a note, page 523 of the American Edition). The above condensation will show that the statements of Cusa are chiefly metaphysical deductions, although Clemens, a German writer, in comparing Bruno and Cusa, and ascribing to the latter the germ of about all modern thought, publishes a fragment which he found in Cusa's library, giving diagram and text concerning the heliocentric theory, more elaborate probably than Whewell was acquainted with; the date of the "Docta Ignorantia" was 1440.

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[1] A course of four lectures delivered, by invitation, before the Harvard Medical Alumni Association, February, 1898.

One of Cusa's first philosophical works was of two books, "De Conjecturis." In this work he develops his ideas of the progression of numbers. One, two, three, and four give together the Denar ten. This as a second unit gives 10, 20, 30, 40, which together make 100, the quadrat of this root; 1,000 is the cube of 10. The cube, however, is an enclosed body and cannot be further potentized; human beings are as the cube and beyond this is no progression. The first is God, the second is intelligence, the third *anima*, the fourth *corpus*. Man is a microcosm; sight is his noblest sense. Higher than this is imagination, since it is not confined to concrete sense. Higher than this is understanding, for this tells us what we cannot imagine, as, for instance, that at the Antipodes man does not fall off into space, since weight strives for the centre (Aristotle). But above this stands intellect, which is related to reason, as the force of unity is related to a finite number.

His work the "Idiotæ" repeats much which we have already given, but in the fourth dialogue, "De Staticis Experimentis," he remarks that a study of difference in weight should lead to a deeper knowledge of things, since God has ordered all things by number, measure and weight. Lighter and airier water is healthier than heavier, earthy water. The weight of blood and urine in man is different in health and disease, in youth and old age; the knowledge of the weight of urine must be more serviceable to physicians than the changing color. The nobler metals are the heavier; the comparison of the weight of the metals in air, water and oil should prove useful. The elements often pass over into one another. If one puts a glass into snow the air thickens to water, and many waters have a stone-making nature; in Hungary there is a water which changes iron to copper; so water is not a simple element but contains other elements in itself. He speaks of weighing the air. A man has one weight holding the breath, another when he has expired: one weight living, another dead. Harmony in bells depends upon their difference in weight, and health is to be conceived of as a harmony of weight, while disease is discord. The different contents of geometrical figures are easily measured by their weight. Astrological questions and signs are not worth the attention of the wise if they lack sufficient basis. Cusa treated of the end of the church and of time, completely in the sense of the mystics. A year of the church is a jubilee year of fifty common years, hence in 1450 the age of the church corresponded to the twenty-ninth year of Christ's life; consequently up to 1700 the church would be persecuted in every way, but then its resurrection and ascension should come. In a tract, "De Beryllo," Cusa treats of the grinding of the beryl, convex and concave, as enabling the eye to perceive objects otherwise invisible. Something in the way he writes makes it appear that opticians then, if of quackish turn, used that name for common glass, as "pebble" has been used in our day; it would be in the nature of a Middle Age guild to do this and to speak of the invention of *frames*, as I believe they did, as the invention of glasses or spectacles, — however, this is a subject of itself.

About a century after Cusa's death was born, at Nola, Giordano Bruno. It seems somewhat strange to-day to consider him in connection with the history of medicine. We must keep in mind the fact that physiology, at least as then considered, was part and parcel of the systems of just such savants; that the school of Padua, of which he was part, presented physiology only through such thinkers as Bruno, Telesius, Campanella, Patritius. In this fact is shown a marked characteristic of the school which really produced Harvey; it held more firmly and for a longer time to the methods of the Middle Ages than any famous school of Europe, and it did so to a great extent because it was a medical school and because medicine, or physiology at least, was thoroughly enveloped in past systems. The date of Bruno's birth is unknown, so also is the date of his joining the Dominicans and becoming priest; in this capacity he was noted as an opponent of Aristotle and he earned much enmity by the eagerness with which he disputed for his ideas. In 1580 he fled his order and his country. He went at first to Geneva, but was too free in spirit for Calvin and Beza. From Geneva he proceeded to Lyons, Toulouse and Paris, where opposition to Aristotle was also waxing. In 1583 he went to London where he was well received by the French ambassador, de Castelman, and where he made the acquaintance and won the warm friendship of Philip Sydney. Upon Sydney's departure to command the English cavalry in the Netherlands, Bruno returned to Paris where he was appointed extraordinary professor of philosophy. From Paris he went to Marburg where he matriculated as doctor of theology; from there to Wittenburg and taught philosophy and mathematics. Upon leaving, two years later, he delivered an oration in which he highly praised Luther, the Protestants and the Germans, but he remained true to his own church. It is needless now, fortunately, to repute the absurd calumny attributing to him a speech in praise of the Devil. From Wittenburg he went to Prague, which he left in 1589 for Brunswick; he taught at Helmstadt but was at Frankfort in 1591, whence he returned to Italy and Padua, where he taught his philosophy. He was too free in his criticisms of church and clergy and was seized by the Inquisition of Venice. In 1598 he was removed to Rome and delivered to the Inquisition there; he was tortured, as was usual, into the requisite amount of contradiction, and burned the 17th of February, 1600.

Bruno's doctrines are sufficiently stated for our purpose in his famous Philosophical Discussions concerning first, "The Cause, the Beginning and the Unity," and second, "Concerning the Eternal All and the Innumerable Worlds." As usual, I can simply condense a few leading characteristics. As to the world, Bruno regarded it as an organism. It has its earthquakes, its diseases; it has its mountains, valleys, coasts and seas, hollows and caves, just as in the animal body we find bones, flesh, vessels and nerves; but as such a living body it can have no geometrical form, cannot be perfectly spherical. The circulation of tne elements give origin to periodical winds, tides, etc. He accepts the astronomical discoveries of Copernicus but laments that Copernicus was more mathematician than philospher. Bruno draws attention to the fact that

Cusa had stated the same opinion as that which Copernicus had put forth in his "Docta Ignorantia." As a sum of Bruno's opinions I translate his aphorisms:

(1) Nature is an eternal and indivisible being, (2) which is the instrument of God's providence (3) and works with wisdom, like instinct, provided for it.

(4) And although every thing and each thing is directed to a certain purpose, still it in no manner demands a thoughtful idea or deliberation.

(5) It also is ever advancing from the imperfect to the perfect.

(6) It is absolutely indefatigable.

(7) Nothing of all that which is or has been pertains to Nature by chance.

(8) But everywhere and at all times it develops certain forms and structures from certain necessary relations of germs or seeds.

(9) According to which principles and rules she brings forth all her motions of themselves undetermined, in a constant determined manner, with measured proportion — a manifold effect in a uniform order.

(10) Thus she is a living art and the expression of the power of a rational principle, forming according to eternal laws, not by voluntary election, according to her own essence; not by a foreign material, but by her own inborn material, not only externally, outwardly but inwardly (Acrostismus contra Peripateticos, Paris, 1585).

The fact that Bruno owes much to Cusa is evident. He proclaims it and at the same time his love and admiration for one whom he evidently regards as teacher. This is no deduction of mine; one of the bitterest attacks upon Bruno, by a hide-bound theologian, makes his chief charge against Bruno this very likeness, which, in spite of Bruno's grateful acknowledgments, the man bringing the charge is mean enough to treat as a plagiarism. Without going into details to corroborate the self-evident fact, it may be remarked that the larger part of the work referred to is devoted to the exhibiting this similarity of the two thinkers; the differences noted are unimportant and no direct charge against Bruno's life or doctrines are made. After reading the work carefully I could only wonder why one man, Cusa, was the honored bishop and cardinal and the other the burned heretic, until I thought of the differences in time and the fierce, inquisatorial spirit with which Spain succeeded in inoculating Italy.

In doctrine, then, Bruno and Cusa have many likenesses; in moral aim Bruno was the nobler; in learning Bruno had all the advantage which the century between them could furnish a scholar. As types both are fair products of the Padua of the fifteenth and sixteenth centuries. In both we see that constant attrition has worn the fragments of Plato and Aristotle, of Averroes, the doctrines of the scholastics, the thoughts of Abelard, Anselm, Occam and the rest of the Christian philosophers, and finally the boldest and freest speculations of the mystics, until the elements of which they were composed have become almost indistinguishable. This general result at Padua was aided much by the local efforts of Pomponatius, whose great characteristic, above the marks of schools, was his earnest belief; true, he defended himself to a certain extent by claiming the double character of Christian and philosopher, but he held all the truths of natural religion with a vigor that distinguishes him as a sixteenth-century thinker. Another movement was the growth of Hellenism which the migration of scholars from Constantinople favored. These brought with them many new manuscripts and an entirely new spirit in the study of the ancients, the most prominent of which was perhaps the elevation of taste which made much of the old Arabian matter seem decidedly barbarian. The efforts of Pomponatius and this new feeling for form broke up the old Averroistic Aristotelianism of Padua and led to the formation of an old school of what might be called Averroists, and a new school, named from Alexander of Aphrodisias, the Alexandrists, or Alexandrian Aristotelians.

Under these influences at Padua, scholarly pride consisted in looking directly and critically to original Greek texts, chiefly of Aristotle, just as at Florence the same feeling was manifested for original texts of Plato.

We have seen that this spirit of form did not control the thought of Bruno; no more did it the thought of Tilesius, who had preceded Bruno by nearly fifty years and who as independent thinker did not fail to attack even the prominent doctrines of Aristotle. Without attempting an account of his cosmological ideas, and his views as to warmth and cold as the two effective principles in all things—for all these physiologists thought it necessary to begin with the physiology of the universe — we attempt a short account of some characteristics of the physiology of man as he viewed it: man is differentiated from everything else by his immortal soul, placed in him when he is fully formed; that this psychical part which perceives and moves all parts shall not perish but be perfected by exercise. The animal soul is simply the spirit drawn from the semen; it moves in the nerves and blood and is controlled in its evil tendencies by the soul formed for the body by God; the animal soul, seated in the brain, is accessible to bodily influences but not to air and light; the liver prepares the blood but it is not warm and delicate enough to furnish the waste of the animal spirits in daily life, hence the heart was furnished us; it has movement that it may warm the blood, not in the grosser manner of the liver but by the finer warmth produced by movement. His account of vision is characteristic; he furnishes a good account of the anatomy of the eye, but infers that light carries color to the eye, the crystalline lens collects it in a manner that renders it easy for the animal spirits seated in the vitreous, and in intimate relation through the optic nerve with the spirits dwelling in the brain, to take cognizance of the form, color and size of objects. Patritius, with perhaps more classical learning than Tilesius, works the ancients over again in forming a new theory of the physiology of the universe and did not enter so deeply into question of human physiology as Tilesius, who was in more than one respect his teacher. Campanella, the last of this school which we need consider, in the latter half of the sixteenth century, while adding many details, is the same in method; he accepts many of the ideas of Tilesius but emphasizes power, wisdom and love as primalities or essentials. He says the newer physiologists, Paracelsus and his followers, err in making salt, sulphur and mercury principles, as they are mixed elements which fire changes into air. In regard to the soul, he says that, according to Tilesius's ideas, it would simply constitute an angel; the soul learns of the state of the body by the corporal spirit; it rules the body as the captain rules the ship. When the soul re tires for nourishment from the corporal spirit into the larger cavities of the brain, we call the condition sleep. The finest divisions of blood current are white and nourish vessels and nerves; there are fatal seven and nine year periods, determined by heavenly influences, peculiar to each individual. Childhood corresponds to the moon, children are hence plump and blonde; youth to Mercury; a little older, Venus rules, and in manhood the sun; in first half of old age Jupiter, in latter half of old age, the wasted spirits leave the soul without support and it returns to God, the corporal spirit to the ether, and the body to the earth.

The body as the residence of the soul has three kinds of organs: first, organs of power; second, organs of sensations and perceptions, and third, organs of appetite. By the first class the body is upheld by bones, the control of which is in nerve-spirit enclosed in the spinal canal; this power is obliged to withstand the tendency of weight, which is the striving of everything to the middle point of its system. It is needless to attempt more detail, sufficient to say that he follows Tilesius in many respects; he gives about the same account of the function of vision but with no thought of plagiarism. As long as they all worked in the orthodox manner they all formed their cosmologies to a great extent from the ancients, that is, from sources common to all, and as they spun their speculations from within, the acceptance of them by another was something of personal flattery; an outsider, one not in the circle of their school, they might accuse of copying, as Bruno accused Paracelsus of copying from Raymond Lully; or they might leave him unnoticed, as they generally left Servetus, or as they left the grand work of Vesalius and his successors. What a lesson the epoch furnishes! The wisest, the noblest, the most learned of men, searching the universe, and universal literature, and blind to the truth which the father of anatomy was establishing daily in their midst!

We have seen in our sketch of physiology as it existed at Padua, that each writer in his ideal system laid considerable stress, as did the ancients, upon the manner of formation, the nutrition, and the mode of action of the "vital spirits" and of their relation to the soul of man. In our first talk we saw that this subject was a leading one with every philosopher in treating that branch of his subject which we call physiology. One medical man started from an entirely new point of view in his attempt to master this subject; not only did the result which he attained make his name immortal, but his very selection of his standpoint is a type of a great movement which marks his time,— we refer to the Biblical origin of the idea of Servetus, that "the soul is in the blood, that the soul is blood."[2]

Servetus was an energetic medical student; his teachers in Paris mention him as on a par with Vesalius; it was as a medical man that he developed the ideas which, embodied in the "Christianismi Restitutio," brought him into contact with Calvin and caused his death. The facts of his theological contest with the bigot of Geneva, that the title of his book is theological, that it was generally destroyed, have obscured his medical reputation, but in the catalogue of the library of the Surgeon-General's office a notice of his medical writings will be found. Is it any wonder that a physiologist of the kind we have attempted to describe as types of sixteenth-century teachers in this department should be forgotten as a medical man? Servetus was one of the class; as brilliant as he was as a medical student, he is fairly to be cited as an example of the product of the school of Paris in the time of Guinterius and Sylvius, a school and a period which some have attempted to make the real source of the greatness of Vesalius. The bent of Servetus led him to study the Bible as a source of knowledge; he gave a literal interpretation to those teachings of Moses which we have cited. He was an ardent anatomist. He conceived a new thought, not those great cells of the brain so often quoted by the physiologists of his time as the abodes of the vital spirits and the seat of the soul were its real dwelling-place. The divinely inspired Moses had told the secret, and careless man, forgetting his words, had lost it. It is the choroid plexus, that wonderful vascular network in such intimate relation with the great cavities of the brain that fulfils all the scientific and rational demands, as science of the past has described them, and also fulfils the conditions according to the divinely inspired statement of Holy Writ. The conception was overpowering; it contained a vindication, a restitution of Christianism as against the philosophers; it also contained the germ of a discovery that fired his genius and his Spanish soul to a far greater heat. It led him to a thorough study of the liver, the heart and the lungs as spirit-forming, soul-nourishing parts, and led him to the discovery of the pulmonary circulation. Alas! it led him farther, it dazzled him also, this new light. The way from the brain to the parts was by the nerves, and these he made conductors of life and continuations of the blood-vessels.

In this connection, time permits us only to call attention to the source of the ideas of Servetus; as we have said, the Bible, rather than the writings of the ancients, was his authority. In this sense Servetus is separated, to a great extent, from those physiologists of Padua whose names we have mentioned; it was not neo-Hellenism which inspired him, but a lofty mysticism. It was the same with the most influential physiologist of this epoch, Paracelsus. Bruno received something of his spirit from Cusa, as he himself acknowledges; all, however, had this trait in common: their physiology, like that of the ancients, was literally a portion of their cosmology.

Paracelsus was born at Einsiedeln in 1493. His father was a physician of respectable connections. After having been prepared by his father and by Bishops Paumgartner and Schacht, in his sixteenth year he attended the university of Basle, and later he studied alchemy under the famous Abbot Trithemius and in the labratory of the Fuggers. A very important part of his education, like that of many scholars of his time, was gained in his travels, which extended over all Europe. Wherever he went he sought a knowledge of nature, particularly of everything related to chemistry. Two years after his return to Germany, in the thirty-fourth year of his life, he was appointed professor at Basle, and, full of confidence in the matter which he had to communicate, he delivered his lectures in German; that this was a well-considered part of his ideas of reform his writings testify. At the end of a stormy period in Basle, where his medical reputation grew extensively, he began his wanderings again until in 1541 he died at Salzburg.

It is difficult to form an exact idea of the details of the knowledge of this great medical man. The researches of Mook, Ferguson, Schubert and Sudhaff have done much, during the last twenty years, towards establishing a correct list of his works and there is a pretty general concurrence that Huser's edition furnishes on the whole the best text; but all writers with whom I am acquainted leave us wholly unsatisfied as to the real source of much that passes under his name. I believe that about all his general ideas of the world and man's place in it, as well as many of his peculiar physiological ideas, were obtained from Nicholas von Cusa. Cusa died a generation, at least, before Paracelsus was born, but the memory of the great leader of reform at the council of Basle was not a name likely to be forgotten in that neighborhood. As to these general relations, it is significant that Paracelsus remained in the church and it is altogether probable that in his family and at school, he had been, in his early years, surrounded by those who had made the life and doctrines of Cusa the subject of much comment. Outside of his reform-work in Germany and the Netherlands, Cusa had been prominent in aiding Sylvius's (Pope Pius) attempt at a new crusade against the Turks, and all familiar with Paracelsus's writings know that this Turkish question, then one of burning interest to Europe, was prominent in his thoughts. But beyond all these general possibilities are the facts of the correspondence of his cosmology with that of Cusa. There is no need of recapitulating the statement of Cusa's views, as we have endeavored to give them; the ideas will be found repeated, sometimes under a peculiar phraseolgy by Paracelsus. Outside of his mention of salt, sulphur and mercury as elements, soluble, inflammable and volatile, we find most of his general ideas as Cusa thought them. Of course many likenesses might have been due to their study of common sources, but here their lives were wholly unlike. Cusa studied the books and systems; Paracelsus, as he so often boasts, studied nature. In many details their views are alike; their opinion of urinoscopy, for instance, were uncommon but peculiar to each. Paracelsus added much of his fanciful chemistry to the subject, but he derided the common custom as Cusa did. In relation to astrology there existed also a striking analogy; both despised astrology, both were greatly given to what might be called mystic astronomy. In their comparisons of the diseases of man with the disorders of the universe they agree. The ideas of Paracelsus concerning "tartaric" diseases seem an extension of those of Cusa as expressed in "De Staticis Experimentis." In the great questions of life, death and disease there is a striking coincidence. Paracelsus's "Yliaster" was Cusa's great, absolute unity; in creation Paracelsus's "Ideas "was the active principle and the material of life, emanations of the "Yliaster" Paracelsus and Cusa each showing a like mingling of the views of Plato and Aristotle. In the "Ideas" Parcelsus conceived of parts soluble (salt), parts inflammable (sulphur) and parts volatile (mercury), and the four elements which these parts formed. All things were potentially in the "Ideas" as the statue is in the marble (a simile of Cusa's). All that is new here is Paracelsus's new chemical inventions, and he says the four elements air, water, fire and earth are born of the three chemical elements; all the elements have "Yliaster" or their original spirit with both. All life has a substratum of mucus, which, putrefied by warmth and moisture, gives origin to new life, a modified Platonism also found in Cusa.

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[2] In our version the words are not the same as in other versions; the idea is in one text or another common in the Old Testament.

The idea of the growth of the inorganic elements, that they were subject to the laws of organized beings, was common to both; Paracelsus developed all his chemical knowledge on this line. The view that all genesis was but a metamorphosis, a progressive development, was common to both. Disease Paracelsus expressly treats as a lack of harmony of the three elements, an idea which Cusa had expressed. Paracelsus undoubtedly had a passion for observation; there is no doubt of the same spirit in Cardanus; both enjoyed huge reputations as physicians (recall Cardanus's trip to England and Scotland; he was the shrewder practitioner). Divesting ourselves of professional feelings, proper now, impossible then, we may well conceive that in contrast with the mechanical routine of the day they both achieved results which were remarkable. The enemies of both have written the proofs of this statement.

The passion which Paracelsus carried into his work of observation was a trait of his nature that made him, even in his efforts at induction, a complete slave to the system of deductions by which he formed his cosmology. Full of the imagination apt to play so useful a part with the greatest philosophers when properly harnessed, he excited it by the passion which he threw into all his studies of nature; this is shown in his serious charge that Galen "poetized." Conscious only of his struggles, his wanderings, his constant search for objective knowledge, he imagined himself altogether the observer — "Know thyself."

The time has long passed when we can dismiss a character like this with a sneer; the danger is now the other extreme. The German writers, who have vindicated his fame with national thoroughness, have made him the peculiar product of the great movement connected with the Renascence, in short, they have isolated him, as all hero worshippers do their idol. Let us consider five of the chief events of the epoch in illustration of our statement:

First, as to the fall of Constantinople and the consequent influx of scholars and precious ancient manuscripts into Italy: the movement began long before the fall of the city. Cusa brought valuable manuscripts from Constantinople on his return from his embassy; in return for the service Pope Nicholas V sent him a newly discovered manuscript of Archimedes. Under this pope more learned manuscripts, we are told, were translated in five years than in the previous five centuries.

Naturally the next consideration is the discovery of printing with movable type. Of course the activity of the translators and the consequent activity of the writers made a demand which the press answered, but it was not devoted wholly to noble uses. It was immediately used to answer popular demands, as was natural, and this in the state of public opinion led to the production of a vast mass of trash; it was abused as well as used.

Third, as to the overturning of the ancients: the process had been in operation for centuries. The later scholastics, with the help of the Arabian philosophy, aided, as we have said, by mysticism, had helped the growth of the thought of the Middle Ages from childishness to manhood; but the history of some sixteenth-century physiologists show that methods were not improved, and that systems followed the revolution as freely as in earlier ages.

Fourth, the maritime discoveries were commercially wonderful and they brought stores of new knowledge and material to our profession, especially botanical; they were not as startling in their effect upon philosophy as popular history has generally led readers to suppose. All that Columbus found supported philosophical deductions common among the learned for centuries; he himself mentioned Averroes as one of the philosophers who led his thought toward the attempt to discover "new worlds."

Finally, as to the Reformation: Cusa's life again shows that the movement was in full swing within the Church for more than a century before the stupidity of some of the popes causing the misfortunes of Italy, abusing all decent Christian sentiment of Europe, and allying themselves with narrow Spanish fanaticism brought the movement to a crisis.

There is no satisfaction in attempting to account for Paracelsus by any of these movements; the influences were too general to give us any conception of his special thought. The hero worshipper loves to create a man of power who causes all that follows him, or who is a child of the gods for whom all great movements were especially ordered. Artistic use of great generalities is the powder for their rhetorical pyrotechnics. They resent the analysis which proves that the sulphur, the nitre, the charcoal were slow productions of nature and art which man was long in learning to combine. Closer study generally brings the hero into the human ranks, and, if he is real, respect and veneration is only made warmer and deeper; debate on uncertain points is rendered less extreme; an atmosphere better fitted for existence of truth and justice is created. Partisan spirit, fanaticism, sectarianism, dogmatism are the only sufferers and in their present flourishing condition we may spare our compassion.

Paracelsus is often blamed for his contempt of the ancients; we must endeavor to realize the spirit of the reformer of his time. Savonarola felt and spoke in much the same manner when he said, "The philosophers are in hell, and an old woman knows more of saving faith than Plato." In spite of all the singularity and originality which characterize Paracelsus, in spite of his boasted independence, he, like the other sixteenth-century physiologists, was confined in a system of cosmology which probably he adopted from Cusa. He was more original and independent in his relations to chemistry than to medicine, but on every side were the bars of his prison; all his attempts at original observation, all his inductions were rigidly shaped and adjusted according to the metaphysical ideas in which he had enveloped himself. His struggles for freedom were more energetic, his flights bolder than those of most of the sixteenth-century physiologists, even judging him by the standard of the most advanced school of Padua. In this respect all were in a common plight, — the rule of the systems had existed from the beginning and nothing of the strength of the rule was abated at the Renascence. The birds might exhibit more restlessness, they might sing louder and sweeter, but they were as safely caged as in the ancient days. We may pity them as we see them suffer their self-inflicted injuries, in beating against the bars; we may admire them as we perceive the energy of their attempts for freedom, but we cannot find among them, not even in Paracelsus, the "founder of modern physiology." Browning was right in his immortal poem: Paracelsus was ever aspiring; true to his German nature, he honestly and obstinately clung to his ideal, but he lacked in power for realizing and organizing it.

How modern medicine was made possible, how physiology was established, will be the chief topic in our next talk.

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Original Articles.

CONGENITAL DEFECT OF THE FIBULA.

BY F. J. COTTON, M.D., AND A. L. CHUTE, M.D.

(Concluded from No. 8, p. 192.)

TEMESVARY, six years later, reiterated these views, and the theory now usually accepted, that of amniotic pressure and adhesions, though suggested by Dareste in 1882, seems to have been overlooked by most authors until 1892, when Sperling, in a masterly paper, reviewed the whole subject and challenged all evidence supposed to prove that these so-called intrauterine fractures were fractures at all, and pointing out the possible explanation of their causation by abnormalities of the amnion. His arguments in brief were:

A fracture *in utero* by indirect or direct violence would be hard to produce, the fetus being suspended in amniotic fluid and protected by the uterine and abdominal walls.

Violence sufficient to produce such a fracture would usually at least produce miscarriage.

If uterine pressure were the cause of fracture we should have fractures occurring with some frequency *intra partum*, when the intrauterine pressure is greatest; in fact, however, such fractures occur only at or near full term, and as a result, not of intrauterine pressure alone, but of the counterpressure of the bony pelvis as well.

Callus is practically never found in the cases seeming to belong to the class under discussion.

The presence of the so-called scar is not valuable evidence of compound fracture — it is not even proved that it is a scar.

The defects of fibula and toes, so frequently associated with the tibial bend, point to an origin as early as the second month of fetal life, for at this time the parts are laid down, and defects in the true sense cannot arise later. These defects cannot be so far as we can see either cause or result of the so-called fracture. Hence the association points to a common cause for both. It seems likely that both are due to pressure and pull of the abnormal amnion and its adhesions — the more likely inasmuch as this seems to be the cause of other similar deformities.

Haudek, in an extensive article in 1896, accepting Sperling's conclusions, adds to the evidence the report of the microscopic examination of one of these so-called scars which he had excised. It showed no interruption of the skin layers, and only such fibrous and atrophic changes as could best be explained as the result of pressure, in short, could not be called true scar. He also called attention to the fact that defects of the radius, which in early fetal life lies exposed in supination, are, with the associated defect of thumb and fingers, the not infrequent counterpart of defect of the similarly exposed fibula.

Kirmisson notes in this connection the scar-like mark over the bowed ulna which occurs in some of these cases of radial defect.

Nelaton, Kirmisson, Hoffa, Walsham and Hughes, and very recently Nasse, in the new *Deutsche Chirurgie*, accept these views in general, and of late other theories have been largely given up. Delanglade, in an article which has just appeared, accepts the amniotic theory in general, but is inclined to lay more stress on narrowness of the amnion than on the action of adhesions — a reservation also tacitly made by several others of the above list.

In considering this list of theories we find that several need not detain us. The theory of changes in bone texture lacks all evidence. That the pressure of twin pregnancies is not the cause appears from the fact that we have found no note of a case where the child was one of twins. The defect is not a fusion of tibia and fibula for, as Gould has pointed out, the interosseous membrane is present. Moreover, where the fibula is defective in part only its rudiment occupies its normal position.

Fricke's theory of persistence of the fetal bend does not account for the usual direction of the bend forward and inward, instead of forward and outward, and presupposes, without explaining, the absence of the fibula.

The theory of nerve changes as a cause lacks evidence and is not in accordance with recent work which tends to show that growth *in utero* is independent of the nervous system (Schaper).

There remains only the theory of damage to or absence of original cell-elements, that of fracture and that of amniotic changes. The arguments of Sperling and Haudek are, we think, enough to dispose of the fracture theory. It is conceivable and cannot be disproved that the defect may be one of development *per se*, but the theory of defect of development of "rays" lacks proof that such rays exist, and cannot explain the undoubted cases of defect of the fibula or radius without defects of the foot or hand. On any other theory of defect due to absence or faulty arrangement of original cell-groups, it is hard to see how to explain the relative constancy of type and the limited extent of the deformity. Nor can such a theory explain the presence of the tibial bend or of the so-called scar.

The amniotic theory, however, seems to explain all the lesions pretty clearly. We cannot but accept it as at least the most plausible theory yet advanced. The origin of the typical deformity would be, then, as follows: Between the fifth and the eighth week, pressure of a too tightly-fitting amnion interferes with the development of the exposed fibula and the outer toe or toes of the exposed foot. Lack of space determines the bend of the growing tibia; the adhesion which produces the so-called scar is a result of contact of the most salient point of the tibia with the enveloping wall. The persistent lack of growth of the whole limb is probably a result of deficient vessels and nerves due to the early pressure, as well as of disuse.

As to the frequency of this deformity it is not so rare as would be supposed from some very short lists recently published. Haudek collected, with his own case, 103 in all, and we have found others to bring the list up to 127, including the cases here reported:

Haudek's list: Ztschr. f. Orth. Chir., 1896, iv, 326	103
Kirmisson (besides 2 cases included by Haudek): Traité des mal. ch. d'origine congen., Paris, 1898; Revue de Chirurgie, 1897, p. 524	6
Walsham and Hughes: Deformity of the Human Foot . .	1
Steele: Transactions American Orthopedic Association, 1896, ix, 175	3
Frees: Transactions British Orthopedic Society, Birmingham, 1896, i, 10	1
Humphrey: On the Skeleton (cited by Gould, Transactions Pathological Society, xxxii, 153)	1
Proudfoot: New York Journal of Medicine, 1846 (cited by Brinton, Transactions American Surgical Association, 1884, ii, 425)	1
Langton: St. Bartholomew's Hospital Report, 1879, xv, 272 .	1
Kaufmann: (cited by Braun, Arch. f. klin. Chir., xxxiv, 1886) .	1
Delanglade: Rev. des Malad. de l'Enfance, April, 1898 . .	1
Tyrie: Journal Anatomy and Physiology, xxviii, 4, p. 411, 1894 .	1
McKenzie: New York Medical Journal, 1897, lxv, 241 . . .	1
Morestin: Revue des Malad. de l'Enfance, April, 1898 . . .	1
Rose: Cbl. f. Chirurgie, 1897, No. 12, p. 357	1
Whitman: Rev. d'Orthopedie, 1898, ix, 88	1
Tubby: Deformities, 1896, p. 359	1
Cases here reported by us	3
Total	128

Nasse [1] speaks of having seen this defect repeatedly in v. Bergmann's clinic but gives no detailed account of cases, and we find reference to a report by Burmiester,[2] which we have not verified.

As to the details of cases reported, and the variations occurring, the following notes are presented:

The fibula defect is noted as total in 72 cases.

A fibula of not over half the normal length with both epiphyses present, one or both small, is thrice noted. In Volkmann's dissections, the upper epiphysis of the fibula was prolonged upward by a fibrous band. This band may, in part, replace a fibula which has no upper epiphysis (Braun) or may replace the whole fibula (Gould, Wagstaffe). Where an epiphysis is present it may show lack of ossification; this is probably the condition in Case II of our series.

Where the lower epiphysis is present it may lie higher up than normal and not serve as a part of the ankle-joint. This is shown by Bidder's dissections and by the radiographs of our Case II. Probably this condition may often obtain, for in the absence of dissections or radiographs, where no external malleolus is to be felt, it is very hard to say whether a rudimentary fibula may not be present.

A bend or angle of the tibia, directed forward and usually slightly inward, usually accompanied by the so-called scar, is noted in 67 of the published cases. The acuteness of the angle varies widely. There may be thickening of the tibia, or its head and shaft may be slenderer than normal. The shortening of the shaft is present to a greater extent than the bend can account for and may be marked. As to the lower end of the bone, it may show no obvious change or may show a knobby internal malleolus and an oblique surface for the ankle articulation.

This latter condition is the classical one in the cases of Volkmann's "Congenital Dislocation of the Ankle." It is a question, however, whether these cases do not belong in a separate class. The original cases, described by Volkmann, Kraske and Bidder, though they had defective fibulæ, showed no defect of toes, were all bilateral, and all occurred in members of one family, seven out of seventeen of whom had the deformity. This hereditary character does not accord with either the facts or the theory of cases of fibula defect in general. For these few cases, however, the dissections reported prove a definite obliquity of the ankle-joint, primary, and the cause of the extreme deviation of the foot. Bidder found in one case that the lower epiphysis of the tibia, 1.2 cm. thick at the inner side, fell away to 2 mm. at the outer.

We have no evidence of the existence of such obliquity in the majority of cases, but it is very probable that it exists to some extent. The radiograph of our Case I shows some obliquity and that of Case III suggests it.

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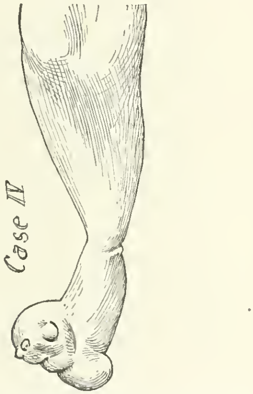
[1] Deutsche Chirurgie Lief, 66, i, Hälfte sq. 165.

[2] Cerberten aus des Geb. des Guburkh. ü. Gynack. zum Feier von Carl Ruger, Berlin, 1896, sq. 215 (1 plate).

Defect of one or more toes associated with the fibular defect is noted expressly in 67 cases. In one case, however (Kirmisson), there were seven toes. Apart from one case (Otto) where the great toe is said to have failed, the defect seems always to have affected the outer toes. Several cases are reported where all save the hallux were lacking. There is often some disproportion in size of the toes. Webbing especially of the second and third is frequent. In some cases there is associated defect of toes on the other foot without fibular defect. The metatarsals corresponding to the missing toes are uniformly absent. Some of the tarsal bones may be lacking or more often there is fusion of several of them: the calcis, talus, scaphoid and cuboid, or some of these, being especially likely to fuse. There seems to be no regular type of deformity here. The foot is in equinus, usually in equino-valgus of varying degree. In five cases, however, varus or equino-varus was reported. In one of our cases the position in the beginning seems to have been a calcaneo-valgus. The contracture of the tendo-Achillis accompanying the equinus is not entirely owing to the disuse of dorsal flexion in a short leg, for it may, as in a case of Bidder's, occur where the deformity is bilateral and equal.


Case IV

In 21 cases the patella is noted as of less than normal size. It may be wanting or, at least, not distinguishable clinically. A lack of development of the whole limb, femur as well as tibia, is usual, varying widely in degree. Whether this may be in part, as Nasse seems to think, due to the atrophy of disuse, or from congenital deficiency of vessels and nerves, is hard to say. The shortening is progressive and its increase as the child grows is a very important factor in determining the disability.

Braun reports two cases, of sixteen and seventeen years, with a shortening of 7 and of 8 cm. respectively — the femur being responsible in each case for 2 cm.

Blasius found in one case at ten years, 2 inches shortening; in another, at nine years, 2½ inches.

Kirmisson had a case with 12 cm. shortening at two years, with atrophy of the whole extremity.

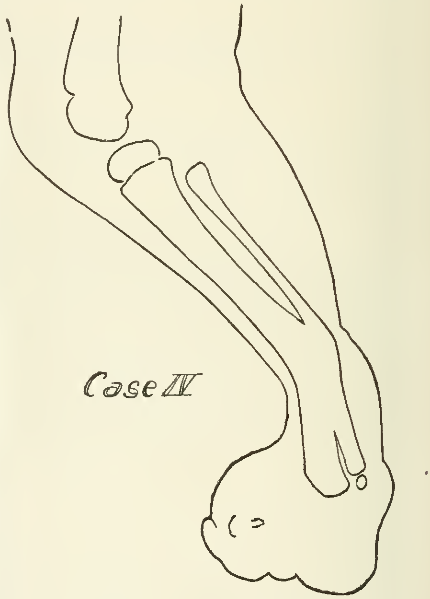
Schnelle reported a case with 3 inches shortening at three years, 5 inches at ten years, 9 inches at twenty-nine years.

Kaufmann found the increase of shortening between two and one-half and six and one-half years of age to be 2 cm. in one case.

Kemke in a case seen at birth found the tibia 1½ cm. short; at one and one-half years the shortening was 2½ cm.

The deformities associated with fibular defect have been most various, including hare-lips, skull defects, visceral anomalies, etc.; but, as would be expected from the accepted theory, defects of the foot, as a whole, of the femur, of the whole upper extremity, or especially of the ulna, or radius and fingers, are most common.

Before leaving this part of the subject it may be well to call attention to certain deformities of the leg which seem to be of similar origin with the fibular defect — those where some constriction is apparently the cause.


Case IV

Case IV. Age four. An unreported case; seen by kindness of Dr. J. E. Goldthwait; has a shortened and deformed leg and foot, as shown in the accompanying figures. The x-ray shows no defect either of tibia or fibula, but at the point of constriction the bones lie in contact and seem to be fused. At this point there is also a bend in both bones forming an angle open forward. The site of constriction is marked by a deep sulcus, without scar, encircling the leg. The x-ray shows no ossification in the foot; manipulation shows the presence of some bones, apparently fused, in part at least. Anterior to the tarsus, the foot is pulpy, and there must be extensive bony defects. The total shortening from knee to heel is 2¼ inches, from knee to ankle 1½ inches. The deformed foot measures but 2⅜ inches in length, the normal, 5 inches.

A case of deformity, strikingly similar to this, is reported by Ridlon,[3] in which the circular depression about the ankle was associated with other similar constriction rings, with spontaneous amputation of fingers, etc.

Still another case is reported by Steele,[4] where a depression just above the ankle, as from a cord, co existed with defect of fibula and toes and bend and so-called scar of tibia.

These cases, taken together, make it seem possible that this class of cases may also be due, not to strangulation by the umbilical cord, but, like those we have been considering, to abnormalities of the amnion, although the mechanism is not clear.

Chance[5] cites similar cases, and explains them as a result of amniotic adhesions.

The conditions to be considered in treatment are: The total shortening; the abnormal axis of the lower part of the tibia; the equinus — the shortened calf muscles; the valgus. These are present in varying proportions in different cases. There can, therefore, be no routine treatment. The total shortening may be so great, especially if the other deformities of the limb are also extreme, that amputation will be the only resort. This has been repeatedly performed. So far as the shortening is due to the bend in the tibia, it is amenable to treatment by osteotomy or osteoclasis. Brinton, in one case, reduced the shortening in this way from 2⅛ to 1½ inches, and Rose reports the successful correction by osteotomy of a right angled bend in the tibia. Tenotomy of the tendo-Achillis has usually been necessary as an accessory to this as to other operations on these cases; it has also been performed as the only means of relief, but without much result. In some cases a wedge osteotomy has been performed, in one case (Langton) followed by non-union. There have been other unsatisfactory results after osteotomy, but there seems no reason, if the operation is carefully done, why the tibia cannot be accurately straightened in this way, as has been done by Rose, Brinton, Kirmisson and others, nor why there should be a return of the deformity, as has occurred (Küster).

As to avoidance, so far as may be, of the increase of shortening with the growth of the child, Nasse lays stress on early use of the limb, with proper support, to avoid atrophy from disuse.

The equinus may always be remedied by tenotomy of the tendo-Achillis, which has so often been performed. The important fact to bear in mind in this connection is that the equinus is in large measure an attempt at necessary compensation of the total shortening, and, if the ankle can be supported in the equinus position, it is hard to see what is to be gained by the tenotomy, unless, indeed, the shortening is so little that a moderately high sole will fully compensate it.

The most difficult problem to treat has usually been the valgus deformity. This is not, at least in the majority of cases, a valgus of pronation and flattening alone but rather a tipping outward of the whole foot, including the astragalus, which has no external malleolus to hold it into place. Moore[6] has recently reported cases of valgus, due to the removal of the fibula for disease, which show this mode of production of the deformity. In some cases, at least, an obliquity of the lower surface of the tibia determines the valgus; in others there is apparently no such obliquity. The tipping outward of the foot must also be favored by the irregularity of the articular surface of the astragalus; also by the fact that the bones of the tarsus often are partly fused, and hence must have little mobility. These facts, probably, are the explanation of many failures in the use of the high sole after tenotomy of the tendo-Achillis, and must be carefully considered in outlining any treatment.

In a proportion of the cases (as in Case III of our series) there is contracture of the peronei, as well as of the calf muscles, which necessarily prevents correction of the valgus until tenotomy is performed. The section of the peroneal tendons has been performed (Brinton, Nelaton, Walsham, Kirmisson and others) with good success.

In cases where there was obliquity of the ankle-joint, a wedge osteotomy above the ankle has been performed by Riedinger and by Walsham with good result. Volkmann, in one such case, took a wedge out of the articular surfaces, securing correction of the valgus and anchylosis of the ankle. The result was fair.

Simple resection of the ankle-joint has been done in a number of cases. One of the most successful is a recent case by Rose, where the lost ankle motion was compensated by extra mobility in Lesfranc's joint. If this anchylosis be so effected that the foot remains in plantar flexion (Braun), this will lessen the necessary height of the sole. Where the deformity is bilateral this has, of course, no point, but in other cases seems desirable. The Wladimiroff-Miculicz resection, suggested by Kemke, but not carried out, would have no advantage. In two cases (Rincheval, Nasse), Bardenhauer's operation, the splitting of the tibia, and the insertion of the talus in the split has been carried out. Nasse secured anchylosis in equinus. In both cases the result seems to have been satisfactory.

In cases where the rudiment of the fibula, as shown by the x-ray, is of some size, but situated higher up than normal, it seems possible that an operation aiming to slide this down and fix it to the tibia as an external malleolus, might be worth considering. It has apparently never been done.

Attempts to remedy the defect by orthopedic apparatus have, on the whole, been about as satisfactory as the operative cases. The worth of operative procedures must vary with the case; but, in most cases, and especially where the limb as a whole is markedly atrophic, not much is to be expected. In a recent discussion by Kirmisson, Nelaton and others, it came out clearly enough that the results attained immediately after operation are not conclusive as to the end result. Bidder gives plates of two cases: one where Volkmann did ankle resection; the other one of Küster's, where there had been an osteotomy; they are not encouraging. Probably in any case, even if operated on, an apparatus of some sort must be worn to prevent recurrence or the rise of some new deformity. The limb is primarily defective as well as deformed, and correction of the deformity, even if complete, does not solve the whole problem. Probably, unless osteotomy promises some considerable gain in length, or in the position of the foot, or unless peroneal contracture interferes with the reduction of the valgus, no operation, not even a tenotomy, will usually be worth while. If a valgus shoe with a high sole, sloped to fit the equinus, and with side irons, can be satisfactorily fitted, there seems no reason for tenotomy of the Achillis.

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[3] Ridlon: Transactions American Orthopedic Association, vol. ix, 179, 1896.

[4] Steele: Ibid, p. 175.

[5] Chance: Bodily Deformities, London, 1862, p. 135.

[6] Moore: Annals of Surgery, 1896, xxiv, 634.

To sum up (in so far as one may generalize where cases so vary): Osteotomy to be performed not merely because deformity exists, but only for definite indications; tenotomy only to reduce the valgus or as an adjunct to osteotomy; resection of the ankle or Bardenhauer's operation, where apparatus will not control the tipping of the ankle; amputation only in cases utterly unfit for other treatment; treatment of all ordinary cases by apparatus to support the ankle, and prevent valgus — high sole to supplement the equinus in equalizing the shortening — these would seem to be the general lines of treatment. The treatment seems to be at best unsatisfactory, and, as always in such case, operation is to be avoided unless we have some clear gain in view.

Appended is a partial bibliography; other references, especially to older and less accessible publications, with detailed citations of a number of cases, will be found in Haudek's article:

BIBLIOGRAPHY.

Braun. Arch. f. klin. Chirurgie, 1886, xxxiv, 666.
Brinton. Transactions American Surgical Association, 1884, ii, 425.
Gould. Transactions Pathological Society, 1881, xxxii, 152.
Swan. Medical Press and Circular, 1879, xxvii, 160.
Sperling. Ztschr. f. Geburkh. u. Gyn., 1892, xxiv, 225.
Haudek. Ztschr. f. Orth. Chir., 1896, iv, 326.
Temesvary. Wiener klin. Woch., 1892, xlii, 1284.
Kraske. Cbl. f. Chir., 1882 (supplement), page 85.
Bidder. Langenbeck's Archiv., 1888, 37.
Riedinger. Cbl. f. Chirurgie, 1889 (supplement), page 109.
Kemke. Inaug. Dissert., Königsberg, 1893.
Targett. Transactions Pathological Society, 1892, xliii, 126.
Volkmann. Deutsche Ztschr. f. Chir., 1872–73, ii, 538.
Rincheval. Arch. f. klin. Chir., 1894, xlviii, 802.
Hoffa. Orthoped. Chirurgie.
Kirmisson. Traité des mal. chir. d'origine congen., Paris, 1898.
Tyrie. Journal Anatomy and Physiology, xxvii, 4, 1894, page 411.
Walsham and Hughes. Deformity of Human Foot, page 336 and 534.
Kirmisson. Revue de Chir., 1897, 524.
Nasse. Deutsche Chirurgie, Lief. 66, i Hälfte.
Steele Transactions American Orthopedic Association, vol. ix.
McKenzie. New York Medical Journal, 1897, lxv, 241.
Rose. Cbl. f. Chirurgie, 1897, No. 12, 357.
Delanglade. Revue des mal. de l'enfance, April, 1898.
Morestin. Ibid, April, 1898.
Chance. Bodily Deformities, London, 1862.
Tubby. Deformities.
Dunn. Transactions Pathological Society, 1889, vol. xlv, 272.

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GONORRHEA IN WOMEN.[1]

BY WARREN R. GILMAN, M.D., WORCESTER, MASS.

I SHALL not attempt to discuss this subject at length, but to call to your attention some of the important points which are well worth consideration. The disease usually begins as an acute infection, but the tendency to the subacute form of inflammation, which is so characteristic of it, is sometimes seen even at the outset. I have seen very few cases during the first acute attack, and this is the experience of many men who see a larger number of cases. It may be that women are ashamed or reluctant to seek advice, and do not do so until their sufferings force them to it.

The meatus is the favorite point of attack, and following that, the cervix, the vulva and vagina. The inflammation spreads rapidly, and involves the external genitals, vagina and cervix. It is purulent in character, and the parts are bathed in pus. The mucous membrane of the lower edge of the meatus is everted and reddened; the openings of the adjacent ducts are evident as red points.

Bartholini's glands are inflamed and tender and the orifices of their ducts are pouting. Pus can usually be squeezed from these ducts and from the urethra.

The gonococci do not find such favorable conditions for growth in the vagina as they do in the glands of the labia and in the urethra.

The vagina bacillus of Döderlein, which is found here in normal conditions, produces a small amount of lactic acid. The normal acid secretion of the vagina destroys most organisms, but offers little resistance to an advancing gonorrheal inflammation.

A more serious obstacle is the character of the epithelium, which is of the type called pavement. It was contended for years that the gonococci did not grow upon such epithelium, but Mandl and Klein have proved that they do, and are able to demonstrate them in the cells.

The vaginal mucous membrane of a young, unmarried girl offers more favorable conditions for their growth than that of a multipara.

The inflammation upon the vaginal portion of the cervix and about the external os, which may be primary or the result of extension from the vagina, is purulent in character.

There is usually little difficulty in making a diagnosis of acute gonorrheal inflammation of the external genitals and vagina. The symptoms and appearances of the parts alone are sufficient, but, if one wishes absolute proof, it can be found by bacteriological examination of a drop of pus from the uretha or from the duct of one of the vulvo-vaginal glands.

By Gram's method of staining, the gonococci can be plainly demonstrated. This early stage of the disease is the time when the gonococci can be found easily, and it is also the time when treatment is the most effective.

The treatment must be prompt and painstaking. It is sometimes claimed that vigorous treatment of this stage of the disease is as unwise as it is in the acute gonorrhea of the male. I do not agree to this except as it concerns the urethra, and even then it is much less likely to do harm in women than in men.

For many years the favorite and most satisfactory remedy has been nitrate of silver. In the few acute cases I have seen I have used a solution of twenty grains to the ounce and what may be called a dry dressing. The parts should be cleansed with a solution of borax, in order to remove all pus and mucus, and to leave a clean surface upon which to apply the nitrate of silver. The silver solution is then painted upon the entire surface and allowed to dry. The vagina is lightly packed with clean gauze, and wisps of absorbent cotton placed between the opposing surfaces of the labia. The absorbent cotton may be removed every four or six hours and the surfaces, which it protects, bathed. The patient removes the gauze in twelve hours and takes a douche of bichloride of mercury, one to five thousand, or permanganate of potash, one to five thousand, every six hours. The nitrate of silver and gauze packing are reapplied every second day. Under this treatment the acute symptoms will usually begin to abate within ten days. The dry dressing gives the patient great relief. The solutions

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[1] Read before Worcester Medical Association, March 21, 1898.

of nitrate of silver, bichloride of mercury and permanganate of potash undoubtedly destroy the gonococci which they reach upon the surface, and it is probable that the silver solution destroys those that have not penetrated deep into the mucous membrane. This shows how important it is to begin the treatment early when the cocci are upon or near the surface and to apply the germicidal solution to the whole surface.

As a matter of fact one rarely has the opportunity of beginning treatment at once, and in a very few days the glands in the vestibule, labia majora and vaginal mucous membrane are affected, and the gonococci are beyond reach of treatment applied to the surface.

The invasion of one of Bartholini's glands may result in an abscess; in this case it is best to open the abscess and extirpate the gland. The more common result is a chronic form of inflammation; the gland is enlarged and tender, and a drop of pus is usually found at the mouth of the duct. This pus is a constant source of infection.

With the newer silver salts, argonin and argentamin, I have had no experience. The former in a two-per-cent. solution and the latter in a one to three thousand solution are said to penetrate the mucous membrane more deeply than nitrate of silver and to destroy the gonococci without doing any injury to the tissues. Neither one coagulates albumin as nitrate of silver does.

Protargol is highly recommended by Goldenberg. It does not coagulate albumin; its solution is clear and is not precipitated by acids or alkalies. It is said to penetrate the tissues more deeply than argonin and argentamin. It may be used as a powder. A three-per-cent. solution of lactic acid is also recommended. Its use is probably suggested by the fact that the acid is present in the normal vagina and kills most pathogenic organisms placed there for experimental purposes.

I believe that the most prompt and vigorous treatment of acute gonorrhea of the external genitals and vagina rarely if ever cures. It frequently does limit the disease to the chronic manifestations in the glands of the vestibule and labia. When the gonococci reach the mucous membrane about the external os uteri, either by extension or at the primary infection, they are almost sure to invade the endometrium.

Dudley says, "He who wishes to successfully abort a gonorrhea of the uterus must be there with his antidote before the septic intercourse takes place."

As the acute inflammation subsides the symptoms becomes less and less annoying. There is no doubt that the mucous membrane becomes more tolerant of the gonococci and that the gonococci grow less virulent in their action upon it. But even in their most quiescent stage the gonococci produce an acute inflammation if transplanted to a fresh field. A man who is infected by a woman suffering from a chronic inflammation has acute gonorrhea. The chronic form of inflammation, or perhaps more properly, the results of the acute inflammation are not very evident in the vagina. The mucous membrane is likely to be somewhat atrophied and irritable, and there is a scanty but constant leucorrhea. Frequently there is present a condition called vaginitis granularis or papulosa. In the glands about the meatus and in the labia majora the results are plainer. The gonococci linger in these glands for an indefinite period and have been found years after the primary infection. Even when no gonococci are found in the pus from the ducts, the inflammation persists.

Bartholini's glands remain a little swollen and the orifices of the ducts are quite distinct as red points.

The chronic form of inflammation of the vagina and vulva is very liable to exacerbation, especially after irritation of any kind and in this fact lies the chief source of annoyance.

These cases are the ones which are seen in such large number both by gynecologists and general practitioners. I see many in my dispensary work, and have always had great difficulty in making a positive diagnosis and treating them satisfactorily.

The routine treatment I have adopted is as follows: The vagina is washed out and then dried with absorbent cotton. Powdered borax or boracic acid is then dusted over the entire surface and dry gauze packed lightly about the cervix and in the vagina. Absorbent cotton and powder may be used between the labia if necessary. The gauze is removed in twenty-four hours and a vaginal douche taken. The powder and gauze are reapplied every second day. Astringent powders are not necessary. Aristol and dermatol are excellent but too expensive. This treatment is not curative but it keeps the parts clean and relieves the symptoms which are caused by an exacerbation of the chronic trouble.

Improvement usually begins in a few weeks and the patient is free from annoyance for several months, when there is likely to be another exacerbation.

In course of time the mucous membrane becomes so toughened and tolerant that these periodic attacks occur less frequently and are less severe. It frequently happens in this chronic stage of the disease that an abscess is developed in one of Bartholini's glands. Attempts to dilate the duct and let out the pus are not satisfactory and it is best to incise the abscess and curette out the whole gland; the cavity is packed with gauze and heals by granulation.

In a dispensary clinic it is a matter of considerable interest to decide which cases are gonorrheal. Among the poor and unclean women, leucorrhea is so common as to be of little value as a guide. A chronic inflammation of the glands of Bartholini and their ducts is a pretty sure sign of gonorrhea; but one naturally looks for an absolute test in the bacteriological examination of the vaginal discharges.

I think it has been the common belief that such an examination gives positive evidence as to the character of the inflammation. That this is not the case is shown by my own limited experience and the testimony of expert bacteriologists everywhere.

During the past year I have had under observation ten cases which I chose from a much larger number because they seemed to me to present strong clinical evidence of gonorrhea. In none of the cases were there any acute symptoms.

Bacteriological examinations of the secretions from vagina and labia were made, in most cases more than once. In no case was I able to demonstrate gonococci. In one case pus for examination was taken from an abscess of Bartholini's glands which I opened and curetted. Gram's method of staining was used in every case.

A few years after Neisser discovered the gonococcus, it was found that there were other cocci present in vaginal discharges which resembled them very closely.

It was evident that the shape of the cocci and their position in the pus cells was not proof of their character. Cocci which corresponded in every particular to the description of the gonococci were found in pus which was known not to be of gonorrheal origin. The term "pseudo-gonococcus" was frequently used.

Gram's stain settled half the problem and it is now accepted that the cocci which are decolorized by this stain are gonococci. This test is sufficient in gonorrhea in the male because there are very few other cocci present and decolorized diplococci are easily demonstrated. In the female it is far different except at the very onset of the disease in the meatus.

A cover-slip preparation of pus from the vagina shows a field crowded with bacteria. A single gentian-violet stain will show scores of diplococci in and about the cells; some of these still pass for gonococci in a few reports. When the attempt is made to decolorize with potassic-iodide solution, it is not successful and proves that the majority of cocci are not gonococci. But in such preparations, swarming with bacteria, who can say that there may not be a few gonococci? I think it is impossible to do so. This is the reason that even Gram's method is not a final test; there are so many organisms in the field that a few decolorized gonococci cannot be distinguished and one is still unable to actually prove the gonorrheal nature of the discharge. When the result of the microscopic examination is negative, as it is in the majority of cases, the only absolute test is the cultivation and isolation of the gonococci.

Martin in 1892 quoted a number of investigators who said the gonococci could be differentiated from other diplococci only by cultivation.

Brose and Neisser in 1893 found cultivation necessary in chronic urethritis in the male. Heiman in 1895 said that cultivation was the only absolute test in many cases.

The cultivation of the gonococcus calls for a great deal of technical skill and experience and must be left to the trained bacteriologist. The microscopic examination of discharges can be made by the gynecologist and if it shows gonococci, the diagnosis is assured. If it is negative, the diagnosis must be made from the clinical history and the appearances of the parts. In this way I think it is possible to make a fairly accurate diagnosis in most cases. At a recent meeting in Berlin, Behrand, who has charge of an institute for the treatment for prostitutes, said that he attached little value to the presence or absence of gonococci. They may be present in a given case at one examination and absent at the next; cases which do not show them are often contagious. Microscopical examination gives a positive result only in those cases where it is superfluous; in other cases it is unreliable. The treatment should be directed by the symptoms.

It is probable that in a large proportion of the cases of gonorrhea of the vagina and external genitals, the endometrium is attacked sooner or later. If the mucous membrane about the external os is one of the points of primary infection, the endometrium is the more quickly affected. While the normal secretion of the uterus, like that of the vagina, destroys most pathogenic bacteria, it has little effect upon the gonococci. So this organism finds the best of conditions for growth in the endometrium which is covered with ciliated cylindrical epithelium. Acute gonorrheal endometritis is not a very active form of inflammation even at the outset, but it is best to retain the term acute to distinguish it from the later and chronic form. In the uterus the gonococcus always causes an interstitial endometritis with a suppurative catarrh.

The symptoms of acute endometritis are not severe. There is likely to be some pain in the back and a sense of weight or fulness in the pelvis; only a small amount of pus is secreted by the endometrium and the discharge from the external os is chiefly glairy mucus from the cervical mucous membrane. The edges of the external os are often eroded and bleed easily; this condition is more marked when there is an old laceration of the cervix. The muco-purulent discharge has an irritating effect upon the vagina and external genitals which have already passed through the acute inflammatory stage, and in some cases when the primary infection is in the cervix, the discharge from these parts may be the cause of acute vulvitis and vaginitis.

It is quite generally admitted that local treatment of the acute inflammation either by the curette or caustics is unwise because of the danger of producing a mixed infection. The active stage of the pure gonorrheal inflammation subsides in a short time and there is less danger of violent inflammation of the tubes than is the case with a mixed infection.

The endometritis which is seen so frequently in practice is subacute and chronic in character. The gonococci penetrate the mucous membrane and muscular walls and have been found in the peritoneal covering; in this way it is possible to have a peritonitis without infection through the tubes. Abscesses have been formed in the walls of the uterus. In this connection it is only fair to state that Bumm very recently announced that he still believed the gonococcus to be a mucous-membrane parasite.

In a typical case of chronic endometritis, the mucous membrane is thickened and congested and the surface covered with a muco-purulent secretion; it bleeds easily. The muscular walls are thickened and the uterus as a whole is heavier than normal. The ultimate result of the process is a considerable atrophy; the ciliated epithelium is replaced by a smooth pavement epithelium which resembles to some extent that of the vagina and has few glands of the normal uterine type; the walls of the uterus become thinner, some of the muscular tissue being replaced by connective tissue. This change may be said to be nature's method of making the uterus an unfavorable field for the growth of the gonococcus.

In the early stage of inflammation it is not difficult to demonstrate the gonococci; but in the chronic stage the organisms are rarely found in the secretions; they must then be sought in the mucous membrane. Sänger applies the term residual gonorrhea to this stage of the disease when the gonococci cannot be found. The inflammatory process goes on long after the exciting cause has disappeared. Wiener says there are few cases on record in which gonococci have been found in the secretion three months after infection.

The treatment of chronic endometritis by the curette and caustic applications is now very generally regarded as the most effective. It removes the diseased mucous membrane and this is replaced by a new membrane which is at least more nearly normal in character. Many observations have been made to ascertain the length of time necessary for this reproduction and it appears that an entire endometrium may be reproduced in about twenty-five days. The curetting should be done thoroughly and proceed systematically from any one point over the whole surface; the object sought is the removal of the entire endometrium down to the muscular tissue. If a curette of medium size is used upon the body of the uterus, a small instrument must be used upon the cornua. Many operaters advise the use of the small curette exclusively. The denuded surface should then be painted lightly with a strong caustic, like carbolic acid. This may seem heroic treatment, but it must be nothing less in order to be effective. Packing the uterus is generally conceded to be unnecessary.

Salpingitis is almost certain to follow the endometritis and the inflammation is of the same type as that in the uterus. The shape of the tubes and their relation to the ovaries and pelvic peritoneum make the results of the inflammation complicated and dangerous. The inflammation is much less violent than that caused by the streptococcus and its progress less rapid. The closure of the abdominal opening of the tube is one of the important results of the inflammation; this is not accomplished at once but soon enough, as a rule, to prevent the escape of pus into the abdominal cavity. If the inflammation is not severe and the uterine end of the tube not obstructed at once by the swollen mucous membrane, very little pus may be shut up in the tube. In a considerable number of cases the disease goes on slowly through its regular course without ever causing much distention of the tubes; the later atrophic changes in the mucous membrane and muscular tissue leave it finally not much more than a cord-like band connecting the ovary with the uterus. While such a result is not the rule, it occurs often enough to have some weight in the consideration of treatment.

The accumulation of pus is not usually rapid enough to call for operation early, especially in a pure gonorrheal infection; but repeated chills, severe pain and increase in size of a well-defined tumor may make an operation imperative. A conservative and palliative treatment of the early or acute stage is followed by most men unless the symptoms become very urgent. Early operation is advised, however, by some men. Removal of the tube at this time is sometimes a little difficult because it is much swollen and so friable that a ligature cuts through it readily.

Stone[18] says that in the future the correct treatment of acute salpingitis will be careful irrigation of tube and return to abdominal cavity. He cites a case in which he removed the right ovary and tube and then washed out the left tube with corrosive-sublimate solution, returning it to the abdominal cavity. Recovery.

In the early stage of salpingitis, gonococci are found in the pus and in the mucous membrane. Washing the surface with corrosive sublimate cannot possibly kill them all and the reopened orifice at the fimbriated extremity leaves a clear course for their invasion of the abdominal cavity. This procedure may be comparatively safe a few months later when the contents of the tube are sterile. In certain cases when the tumor has been shut off from the general peritoneal cavity by adhesions, the abscess may be opened with safety through an incision in the vault of the vagina; in this way it may be reached and drained with success. The removal of the tube is sometimes necessary and it may be carried out either through an abdominal or a vaginal incision.

As I have said, the pus does not usually accumulate fast enough to call for early operation; much of the swelling felt on examination is in the mucous and muscular tissue of the tube and is not due to a large collection of pus. As this infiltration of the tissues subsides, the tumor may decrease in size to some extent.

Of all the palliative measures for the treatment of acute salpingitis the most important is rest, and the more complete the better.

In the chronic stage of salpingitis the inflammatory thickening of the walls is much less marked. Atrophic change in the mucous membrane and muscular tissue takes place as it did in the uterus. It may be that this change in the uterine end of the tube occasionally relieves the obstruction to the outflow of a collection of pus, and thus a pyosalpinx is discharged through the uterus.

In many cases the history of the disease, as told by the patient, points strongly to such an escape of pus; but absolute proof of it is hard to obtain. It has been very generally believed that the pus does not find an outlet in this way. A case reported by Dr. G. E. Shoemaker is of interest in this connection. The patient gave a history of several attacks of bearing-down pains, relieved in each instance by a discharge of pus from the vagina. Vaginal hysterectomy was done and while a tube which was distended with pus was being manipulated, pus began to flow from the external os. Later examination of the organs removed showed a patulous tube between the abscess and the uterine cavity.

Dr. R. T. Morris, while washing out a chronic pus-tube with peroxide of hydrogen, was able to force the fluid through the tube and out the cervix.

Within a tube closed at each end the pus gradually increases. In some instances the amount is never large enough to cause excessive pain or to threaten rupture. Such a small collection sometimes gradually changes to a hydrosalpinx with a little caseous material in the dependent part.

Many tubal abscesses grow to a considerable size; the wall of the tube becomes thinner under the increasing pressure until it finally gives way. Long before this occurs, dense adhesions have bound the tube, ovary, uterus and rectum together in a mass which is no longer within the general peritoneal cavity. The pus may break into the rectum or bladder and be discharged. A description of the conditions found in the pelvis as the result of such a perforation will not be attempted here.

Several years ago it was noticed that a few drops of pus from a chronic pus-tube escaping into the peritoneal cavity did not necessarily produce a general peritonitis. Investigations have shown that after a certain time the gonococci disappear from the pus and the pus becomes sterile. Kiefer gives the result of examining forty cases of pyosalpinx which were operated upon. In fifty to sixty per cent. of the cases the pus contained no germs. In all the cases the peritoneum was soiled during operation, but in no case was there purulent infection of the peritoneum. This shows that bacteria in an enclosed sac lose their virulence. The average time necessary for this change is nine months.

Dr. Parvin quotes statements of Dr. Ludwig Pick as follows: In one hundred and twenty-two cases of pyosalpinx, seventy-five were free from bacteria. Of the forty-seven containing bacteria, twenty-eight were gonorrheal.

While it is not advised to operate upon a pus-tube during the acute stage of inflammation, it is wise to operate, if possible, before extensive adhesions have formed.

An intact pus-tube, which is not covered and bound down by strong adhesions, may be removed with comparative ease and safety; but the operation for the removal of tube and ovary when there is a thin-walled tube full of pus or a tubo-ovarian abscess is extremely difficult. All the organs in the pelvis are bound together in a mass and we know that within there is a collection of pus. In such cases salpingo-oöphorectomy is sometimes impossible and it is necessary to remove uterus, tubes and ovaries. I will not go into the details of operation upon the pelvic viscera, but will call to your attention some of the methods.

Conservative *versus* radical pelvic surgery has been the topic of innumerable meetings and papers during the past four years. Somewhere between the two extremes will be found the majority of careful operators. The conservative treatment of pus-tubes is interesting and instructive, having as its object the preservation of the tubes and their functions. The tube is separated from its adhesions, the fimbriated extremity opened and the canal cleansed of its purulent contents. A probe is passed through the tube into the uterus and the normal passage from the ovary to the uterus restored. In chronic pus-tubes where the pus is sterile, this is comparatively free from danger.

The tube is sometimes amputated near the uterus, the mucous membrane sewed to the peritoneal coat and the stump then fixed in apposition to the ovary. Such treatment has many earnest advocates who believe in it and put it into practice.

The other extreme of treatment calls for the removal of both tubes and often of the uterus also. Men who believe in the radical treatment of gonorrheal salpingitis claim that the uterus and tubes are damaged beyond recovery and are therefore useless. So, when it is necessary to remove both tubes, it is better surgery to remove uterus and tubes and ovaries than to leave behind organs which are not only useless but liable at any time to an acute exacerbation of the old inflammatory process. Arguments for this method of treatment are well stated by Henrotin[2] and Robinson.[3]

Hysterectomy for disease of tubes and ovaries is very strongly opposed by the majority of surgeons. Chronic gonorrheal endometritis is a very doubtful source of danger after the tubes and ovaries are removed, and the fact that the uterus is no longer of use as an organ of reproduction is no argument for its removal. There are cases in which it is impossible to remove pus-tubes and adherent suppurating ovaries without removing the uterus also. In these cases there is little discussion as to the propriety of the operation.

Another matter of interest to-day in pelvic surgery is the route by which operations are to be performed. There is a growing tendency to operate through incisions in the vaginal vault. Men who operate often have acquired wonderful dexterity in this work but in their enthusiasm they often overestimate the advantages of the vaginal route and underestimate its dangers. All operations upon the pelvic viscera which are not concerned with large tumors have been done in this way and the results are extremely satisfactory.

It is claimed that there is much less shock following an operation done through the vagina than there is when the same operation is done through an abdominal incision; also, that the operation is performed much more easily and quickly.

The men who operate in this way so frequently are the ones who advise hysterectomy whenever it is necessary to remove both tubes. They claim that vaginal hysterectomy is almost a simple operation. Granting that vaginal hysterectomy is less dangerous than abdominal hysterectomy, we then ask if removal of tubes, ovaries and uterus through the vaginal incision is less dangerous than the removal of the tubes alone through an abdominal incision.

There is a wholesome reluctance on the part of most men to operate on organs out of sight when it is possible by other methods to keep them in view during operation. There is no doubt that the danger of serious and fatal hemorrhage is greater in the vaginal than in the abdominal operation.

Clinical Department.

A NOTE ON THE DURATION OF EOSINOPHILIA IN TRICHINOSIS.

BY THOMAS R. BROWN, M.D., BALTIMORE, MD.

In a comparatively recent number of the *Boston Medical and Surgical Journal*,[1] Dr. Richard C. Cabot, in discussing eosinophilia in trichinosis (the first account of which had been given by me in the *Johns Hopkins Bulletin*, April, 1897, followed by a complete report in the *Journal of Experimental Medicine*, Vol. III, No. 3, of three cases in which a marked eosinophilia, between 45 per cent. and 68 per cent. had been found in the blood, and living trichinæ in the muscle), remarked that it would be interesting to know how long the eosinophilia lasted after the cessation of the acute symptoms.

This question had also occurred to me, but unfortunately, all our three cases left the hospital and the city while still showing a marked eosinophilia, 16.8 per cent. in the first, 17.6 per cent. in the second and 34.7 per cent. in the third, with a leucocytosis of 11,000 per c. mm. in the first, and 9,000 per c. mm. in the second and third cases. Recently, by a lucky chance, the third case has again come under my observation and, as there had been no symptoms since leaving the hospital (January 22, 1898) to suggest another trichinotic infection, I took the opportunity to examine his blood to see whether any trace of the old eosinophilia remained.

The count made on July 10, 1898, was:

Leucocytes (per c. mm.)	7,000
Polymorphonuclear neutrophiles . . .	68%
Small mononuclears	23%
Large mononuclear and transitional forms .	6%
Eosinophiles	3%

That is, practically, a normal number of leucocytes per c. mm., and normal percentages of the various forms, thus showing that the eosinophilia had entirely disappeared within the five months subsequent to his leaving the hospital. This one would naturally expect if the eosinophilia is related to the acute stage of the trichinotic infection, as seems to be the case. Nevertheless, that there is an increase of the eosinophiles in the blood for a *considerable* time after the cessation of the acute symptoms, is highly probable, when we consider the very great increase in the number of these cells in the blood, and the fact that a considerable length of time must elapse after the enormous new formation has ceased, before a sufficient number has been destroyed to bring their proportion again within normal limits.

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[2] American Gynecological and Obstetrical Journal, April 1897.
[3] Loc. cit., October, 1897.

[1] December 30, 1897.

The fact that all three of our cases, leaving the hospital after their symptoms had practically ceased, had still a marked eosinophilia, shows that for a certain length of time at least, the increase is maintained, although gradually lessening.

Medical Progress.

PROGRESS IN PATHOLOGY.

BY JAMES H. WRIGHT, M.D.,
Director of the Laboratory of the Massachusetts General Hospital.

THE REPAIR OF WOUNDS OF THE BRAIN.

Tschistowitsch[1] has studied the healing of aseptic wounds of the brain tissue of animals. He finds that in the process of healing and of filling up losses of substance, the connective-tissue elements of the pia and of the blood-vessels play the chief part. The neuroglia takes a very insignificant part in the process and that consisting only in the formation of a sclerotic zone about the cicatrix or foreign body when there has been long-continued irritation. He thinks it likely by a more gradual destruction of the brain tissue than was possible in his experiments, this growth of the neuroglia may become relatively more extensive, as in progressive degenerative processes in brain disease.

No regeneration of nerve cells was observed. With regard to the regeneration of nerve fibres the author is in some doubt, but does not deny that it may occur. He found that the epithelium of the ventricles had little power of regeneration.

STREPTOCOCCUS INFECTION AND PHAGOCYTOSIS.

It is a well-known fact that some specimens of the streptococcus pyogenes are capable of inducing in animals marked inflammatory reactions, while others are not. The satisfactory explanation of this fact as well as the explanation of the general question of immunity to infection is not yet forthcoming. Some bacteriologists consider that the fluids of the body kill the bacteria, while others, and particularly the French bacteriologists, have long maintained that the bacteria are taken up and destroyed by leucocytes, or in other words, that immunity to bacterial infection depends on phagocytosis.

Marchand[2] has recently reported the results of an experimental study of the effects of the blood serum and of the leucocytes of animals upon both virulent and non-virulent forms of the streptococcus pyogenes, with the idea of determining whether any differences were to be observed between the two forms. Out of deference to the objection that any difference noted between the behavior of the virulent and non-virulent forms might be due not to difference in virulence, but to the fact that the organisms were of separate species, he used exclusively virulent and non-virulent forms which were developed from the same stock cultures. The streptococci were isolated from cases of infection in man and were primarily of a low grade of virulence. From these cultures, however, cultures having a high degree of virulence were produced by successive inoculations of rabbits, and thus for each non-virulent form there was a corresponding virulent form descended from it. One set of experiments deals with the effects of the blood serum of certain animals upon these two forms of streptococci. The organisms were sown in the serum of the rabbit, the dog and the guinea-pig, and their vitality and growth, after certain lengths of time, tested.

It was found that both forms multiplied rapidly in this fluid and no differences between them were evident in this respect, from which the author concludes that the non-virulence of the organism was not due to the destructive action of the blood serum of the animals. The behavior of the leucocytes, however, toward the non-virulent forms was found to be very different from their behavior toward the virulent forms. The methods of observing this behavior consisted essentially in the microscopical examination of the peritoneal exudate following injections of the streptococci; and also of a fluid, rich in living leucocytes, in which the streptococci were suspended.

The last-named fluid was obtained by the intrathoracic injection of a suspension of staphylococcus pyogenes aureus, which had been killed by heat. This gave rise to an exudation in the pleural cavity of a fluid containing many leucocytes and free from bacteria. Experiments with the two forms of streptococci, made as above indicated, showed that both forms exercised a considerable attractive influence upon the leucocytes, but that while the non-virulent forms were quickly taken up by the leucocytes, the virulent forms either were not taken up at all or only in very small numbers. This difference between the two forms was observed both in the experiments carried on outside the body as well as in the peritoneal cavity, and also in the case of the dead organisms.

From these experiments the author concludes that a virulent streptococcus is a streptococcus which is not taken up and destroyed by leucocytes; that it is the occurrence or non-occurrence of phagocytosis upon which immunity or susceptibility to streptococcus infection depends; and that the resistance of the animal tissues to the streptococcus is due essentially to the intervention of leucocytes.

THE ETIOLOGY OF ENDOCARDITIS.

Dessy[3] reports the results of the bacteriological examination of 36 cases of endocarditis which came to autopsy in the Pathological Institute of Professor Banti in Florence. In 34 of the 36 cases bacteria were found in the cardiac lesions. In the two negative cases the vegetations resembled more a marantic thrombosis than an inflammatory process, histologically.

Among the 34 positive cases, the pneumococcus was found in 13, the streptococcus in 12, the staphylococcus pyogenes aureus in two, the staphylococcus pyogenes albus in one, the colon bacillus in one, the pneumococcus with the staphylococcus albus in one, and the streptococcus with one or both of the pyogenic staphylococci in four cases. The lesions were of the verrucose form in 31 of the cases and of the ulcerative form in three, which latter were all among the pneumococcus cases.

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[1] Beiträge zur path. Anat. u. z. allgem. Path., Band xxiii, Heft 2.

[2] Archives de Méd. Experim. et d. Anat. Path., tome x, No. 2, 1898.

[3] Lo Sperimentale, Anno. lii, Fasc. 1, 1898.

From his observations in this series, Dessy concludes that the pneumococcus and the streptococcus are the bacteria most frequently concerned in endocarditis, and that they may occur alone or associated with other bacteria.

The pneumococcus infection was the most frequent in aortic endocarditis, and the streptococcus infection in mitral endocarditis.

THE TOXIN OF TETANUS.

Roux and Borrel[4] discuss, on the bases of their experimental studies, the nature of the tetanus intoxication. They point out that there is a marked affinity between the nerve cells and the toxin. This may be shown by the following experiment: An emulsion of the brain tissue of a guinea-pig is mixed with some tetanus toxin and centrifugalized. As a result, the mixture separates into two layers, the nerve tissue below and an opalescent liquid above. The greater part of the toxin will be found in the nerve tissue, with which it is united or combined in the manner of a coloring matter, while the supernatant fluid contains very little toxin. In the tetanus infection the same affinity of the toxin for the nerve tissue shows itself. In subcutaneous injections the toxin reached the nerve cells after some hours, travelling both by the blood stream and also directly along the nerves. This explains why, in experimental tetanus, the contractures always begin in the region near the seat of inoculation.

If, however, the toxin, instead of being injected subcutaneously, be injected directly into the tissue of the central nervous system, the combination of the toxin with the nerve cells takes place much sooner and the symptoms produced are quite characteristic. The rapid fixation of the poison in the nerve cells permits of limiting its action to small areas of the nervous system, so that the symptoms produced will depend to a certain extent upon the region of the nervous system which is intoxicated. It is suggested that the study of these localized intoxications may in future throw some light on the functions of different regions of the brain. The direct injection of the toxin into the brain of an animal is readily accomplished by trepannation and the operation of itself has no very injurious effects upon the animal.

The form of tetanus resulting may be called cerebral tetanus and is characterized by excitement, epileptiform seizures, polyuria, and disorders of motility.

It may be produced in animals thoroughly immunized against experimental tetanus from subcutaneous injection of the toxin. The explanation of this lies in the theory that the antitoxin of the immunized animal is in its blood and that the toxin, by direct injection into the brain tissue, is enabled to attack the nerve cells at once without being subjected to the neutralizing action of the antitoxin in the blood.

The antitoxin of tetanus is efficacious against the intoxication from subcutaneous injection of the toxin because the greater part of the toxin has to go through the blood to get at the nerve cells and in the blood it is neutralized by the antitoxin. The toxin, when combined with the nerve cells, however, is not affected by the antitoxin introduced into the blood. This hypothesis explains why, when tetanic symptoms have developed, the antitoxin fails to effect a cure. Any toxin in the circulating blood may be neutralized and the intoxication somewhat limited, but that which is already fixed in the nerve cells and in process of diffusion from cell to cell throughout the central nervous system cannot be attacked by loading the blood with antitoxin. The antitoxin, to be efficacious, should be injected directly into the central nervous system in those regions where the toxin is in process of combining with the nerve cells.

This idea seemed to be justified by experiments. Intracerebral injections of a few drops of antitoxin in tetanic animals were found to be much more curative in their effects than large amounts injected into the blood or beneath the skin.

The immunity to tetanus, both natural and acquired, would seem to be due to the fact that the poison does not reach the nerve cells, and not to the acquired toleration or insensibility of those cells.

THE BACTERIOLOGY OF THE SIMPLE POSTERIOR BASIC MENINGITIS OF INFANTS.

Still[5] has examined bacteriologically eight cases of this form of meningitis and in seven of them has found the diplococcus intracellularis meningitidis of Weichselbaum. The cases were all sporadic ones. This condition, which has been regarded as a special pathological entity, is, in the light of this evidence, to be considered as a sporadic form of epidemic cerebrospinal meningitis.

A distinguishing complication of the disease is an inflammation of the tissues about the capsules of joints and neighboring tendon sheaths. In one of the cases, in the thick exudate in this situation, the same diplococcus was found as in the meningeal exudate.

THE GONOCOCCUS AND ITS TOXIN.

Wassermann[6] has devised a new culture medium for the gonococcus. A mixture of hog blood serum, glycerine, pepton and water is made, to which 2 per cent. of "nutrose" (casein sodium phosphate) is added. The addition of the nutrose prevents the coagulation of the serum by heat, so that the mixture may be sterilized by steam. After sterilization this fluid may be used as a fluid culture medium, or mixed with nutrient agar to form plate cultures.

As in other special culture media for the gonococcus, the serum is the most important constituent. The special advantage of this medium is that it may be sterilized by heat and so is fairly easily prepared. With cultures of the gonococcus grown in this way Wassermann has shown that while the organism is not capable of multiplying and producing any definite infection in the usual laboratory animals, it is endowed with poisonous properties. Experimenting with mice, he found that the injection into the peritoneal cavity of a few drops of a fluid culture, the gonococci in which had been killed by heat, was fatal, while the injection of the bacteria-free filtrate of the same culture had only slight toxic effects. From this and similar experiments he concludes that the specific poison of the gonococcus is contained in the bodies of the cocci themselves.

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[4] Annales de l' Inst. Pasteur, tome xii, 1898.

[5] Journal of Pathology and Bacteriology, vol. v, No. 2, 1898.

[6] Zeitschrift f. Hygiene u. Infectionskrankh., Band xxvi, Heft 2, 1898.

The virulence of the poison was found to be variable in different cultures. The poison was resistant to heat and the action of alcohol. Subcutaneous injections of the heated cultures produced in rabbits and guinea-pigs local infiltration, which in some instances resulted in necrosis. Some of these animals died of marasmus. Injections into the anterior chamber of the eye were followed by extensive inflammations. Subcutaneous injections of the killed cultures, practised upon the author himself and two other persons, gave rise to local inflammation, with fever, and pains in the head and extremities during one or two days.

Repeated doses failed to show the development of any tolerance for the poison, and all experiments directed toward the production of an immunity were fruitless.

THE VENOMS OF SNAKES AND SCORPIONS.

The poisonous substances secreted by certain snakes resemble very much the bacterial toxins in their effects upon the animal organism. Like the latter also, they are destroyed by heating, and animals may be immunized against them, with the development of antitoxic substances in their blood serum. There are also some indications that antitoxins efficacious against bacterial poisons may also be efficacious against the poisons of snakes.

The snake poison, however, differs from the bacterial poisons and certain others, in that it acts without any definite period of incubation, it being possible with it to produce instantaneous death, if injected into the animal in sufficient quantity. Subcutaneous injections are followed by very marked inflammation at the seat of inoculation in addition to the general toxemia. Nowak[7] has recently studied the histological lesions produced by subcutaneous injections of the venoms of certain snakes and scorpions. The venoms used were first heated to 80° C., to diminish the local reaction produced by them, and were then filtered through unglazed porcelain.

The filtrate was a clear fluid, which was very poisonous. Various quantities were injected, so that the animals survived for periods ranging from a few minutes to several days. In general, the lesions observed are most marked in the liver, kidneys and lungs. If the intoxication has been of a certain duration, the liver tissue may be almost completely destroyed, partly by fatty degeneration, partly by necrosis. In the kidneys there were necroses and exudative processes, as well as fatty degeneration. The lungs, in some cases, were the seat of a marked focal inflammation, pneumonic in character. Fatty degeneration was also observed in the spleen and heart-muscle in animals in which the fatty degeneration of the liver was very marked.

The author calls attention to the very marked resemblance of the lesions to those of yellow fever.

THE BLOOD IN TRICHINOSIS.

T. R. Brown[8] has found in three cases of trichinosis a marked increase in the number of eosinophilic leucocytes of the blood, together with a decrease in the number of neutrophilic leucocytes. The total number of leucocytes was more or less increased in all three of the cases. The microscopical examination of pieces of diseased muscle tissue showed also more or less infiltration with eosinophilic leucocytes and some leucocytes which might be regarded as transitional forms between these and neutrophilic leucocytes. This suggests the possibility that the eosinophiles in the muscles may be derived directly from neutrophiles.

Brown considers that trichinosis in its sporadic form is more common than is generally supposed and that in cases manifesting indefinite intestinal, articular or muscular symptoms, an examination of the blood with reference to the number of eosinophiles should be made. An increase in the number of eosinophiles in the blood, he regards as a diagnostic sign of trichinosis.

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Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION,

Twelfth Annual Meeting, Boston, Mass.,
May 17–19, 1898.

(Concluded from No. 8, p. 199.)

THE FORCIBLE CORRECTION OF DEFORMITIES IN POTT'S DISEASE.

Dr. F. E. Peckam, present by invitation, read a paper on this subject. He said that there was rarely any pain after this operation, although the pulse-rate was usually increased. Goldthwait's method of making extension would be found an improvement.

This comparatively new method of treatment is, of course, of the greatest service in the early stages of the deformity. In cases of paraplegia it is the operation *par excellence.* In one of his cases, a girl of seven years, severe shock had lasted for two or three days after the operation, and the patient had seemed to be at the point of death. The jacket was loosened, and after a few days she recovered. The mistake in this case was in attempting to correct too much of the deformity at one sitting. The second and third operations were not followed in her case by any shock.

Dr. Henry Ling Taylor, of New York, said that the extravagant claims that had been put forward for this operation had not been fulfilled, but, on the other hand, the extravagant fears of many regarding the dangers attendant upon the treatment had also proved groundless. In all probability progress would be made along the line of gradual reduction and better support for the diseased spine.

Dr. Newton M. Shaffer, of New York, said that in disease of the lumbar region a good result could almost always be secured without surgical interference, but in the mid-dorsal region, where there is fixation of the ribs and a normal kyphosis, the forcible reduction of the deformity had a peculiar interest. It should be noted that a good deal of the apparent gain in height was really due to a modification of the compensatory curves, and not to a decided change in the bone itself. It would take at least four or five years to collect sufficient clinical material to determine exactly regarding the permanency of the result.

Dr. R. H. Sayre, said that he thought, in addition to the danger of disseminating tuberculosis after forcible correction of the spinal kyphosis, there was the danger in certain cases from rupture of abscesses and flooding the lung with pus, and also, exceptionally, of rupture of the aorta as it winds around the rigid spine. He had serious doubts as to the wisdom of using much force in the effort to reduce such deformity ; the method proposed had long ago passed out of use.

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[7] Annales de l'Inst. Pasteur, tome xii, No. 6, 1898.

[8] Journal of Experimental Medicine, vol. iii, No. 3, 1898.

Dr. C. C. Foster, of Cambridge, said that it should not be forgotten that the spine cannot throw out callus and become solid until the completion of the active tubercular process. It seemed to him that a straight bone would unite just as well, if not better, than a crooked one. It was surprising the amount of straightening of the spine that could be secured by simply utilizing the weight of the body as a means of traction, while the patient lies in bed.

Dr. Judson said that the revival of this old method of treatment would be likely to lead to one benefit — that is, that special pains would be taken to apply mechanical force properly and continuously.

Dr. A. M. Phelps, of New York, said that he believed every one of these cases would relapse except those operated upon very early, before a large kyphos had formed. Where there was a large gap in the vertebral column this space would not be filled in with bone for the reason that fibrous tissue grows over the ends of the bone and prevents bony union. For this reason he was now wiring all of the spinal processes firmly together. The operation was a very simple one, and consisted in drilling a hole through the upper vertebra above the kyphos, and then weaving this wire in and out until the entire kyphos had been firmly fastened together.

CONGENITAL DISLOCATION OF THE SHOULDER, ETC.; ETIOLOGY AND PATHOLOGY, AND AN OPERATION FOR ITS RELIEF.

Dr. A. M. Phelps, of New York City, read a paper with this title. He said that he believed that the etiology of this condition was traceable to injury occurring *in utero* or at the time of birth, having found evidences of fracture in each case on which he had operated. The joint being dislocated in a growing child, the use of the bone and of the muscles is interfered with, and hence the lack of development. The paralysis he considered to be purely accidental. The head should be exposed by an incision made along the posterior border of the deltoid muscles, curving it somewhat downward. The capsule having been incised and the head of the bone exposed, the latter is cut away and rounded off down to the epiphyseal line. Having done this, the bone is slipped back into the glenoid cavity. The new articulation which has formed should be scraped away, the redundant capsule cut off and the remainder of the capsule stitched up with catgut. He advised dressing the arm in the elevated position so as to secure the ability to raise the arm perpendicularly. These cases must not be confounded with those of obstetrical paralysis.

Dr. Charles L. Scudder, of Boston, said he had seen several instances of what he considered to be true congenital dislocation of the shoulder-joint, and indeed, the physical examination seemed to show a distinct difference in the length of the clavicle on the affected side and in the size of all the bones of the upper extremity. This seemed to be an important factor in determining whether there was congenital dislocation or simply subluxation due to paralysis.

CARIES OF THE SPINE IN ADULTS.

Dr. E. G. Brackett, of Boston, read a paper with this title. He said that hardly any age seemed to be exempt from caries of the spine. Very few cases occur after the age of forty, nevertheless quite a number are observed between the ages of thirty-five and forty years. In the adult cases that he had observed the disease had usually been in the lower dorsal or upper lumbar region. In the adult, traumatism assumes a different relation to the disease from what it bears in children. In three or four out of his twenty cases the disease seemed to follow a direct strain, and the cases had gone on to the formation of a kyphosis and of abscesses. The earlier symptoms were referred to abdomen, legs and back, most frequently to the latter region. Out of the twenty cases, nineteen complained very early of a distinct pain referred to the lumbar muscles, just above the attachment of the erector spinæ muscles. The pain is increased by activity and by twisting motion. The symptom of stooping was often absent, or not at all prominent. The early symptoms extended over periods varying from two months to two years, and were characterized by more or less distinct remissions. Six out of the twenty cases had large abscesses, two of which opened spontaneously. The question of treatment was not discussed in the paper.

Dr. Shaffer said that he had seen a large number of cases of caries of the spine occurring in persons from thirty to sixty years of age. These cases were almost always traumatic in their origin, and consequently the invasion was not so insidious as in childhood.

Dr. Ridlon said that he had seen, since he had been in Chicago, a relatively much larger number of adult cases of spinal caries than he had formerly thought possible. It was worthy of note that these adults had done better than the children.

BIVALVE PLASTIC SPLINT FOR POTT'S DISEASE.

Dr. Henry L. Taylor, of New York, read a short paper on this apparatus. He maintained that the plaster jacket is a leverage apparatus, acting essentially like an antero-posterior steel support, and urged that similar principles should be followed in its construction and application. The ordinary jacket, made strong in front and solid at the edges, is provided with strips of felting either side of the spinal processes behind, and across the inside of, at the front and top and bottom. While still fresh, the jacket is cut in the axillary line by two straight incisions into an anterior and posterior half, whose breadth is somewhat diminished by paring away the sides. The bivalve splint is then trimmed and provided with at least four straps and buckles on each side, or one side may be fastened by a leather hinge. The advantages were cleanliness, avoidance of excoriations, adjustability and precision.

SOME EXPERIMENTS WITH THE CELLULOID BANDAGE.

Dr. Augustus Thorndike, of Boston, said that in making jackets of celluloid he had used a paste made by dissolving celluloid in acetone, to paint upon gauze bandages on a cast. These jackets were satisfactory, but required to stiffen them many coats of paste, and as each coat shrank in drying the jackets were always too short, and several days were required to make one.

A SIMPLE WATER-PAD FOR THE PREVENTION OF BED-SORES.

Dr. Ansel G. Cook, of Hartford, said that a simple and inexpensive water-bed could be improvised out of four ice-bags stitched together in a cloth.

LANTERN-SLIDE DEMONSTRATION OF INSTANTANEOUS PHOTOGRAPHS OF THE GAIT OF CHILDREN IN CERTAIN FORMS OF PARALYSIS.

Dr. W. N. Bullard, of Boston, gave a lantern demonstration of the work he had done, with the assistance of Dr. G. W. Fitz. A double rotating shutter was used in making the exposure. The shutters rotated in opposite directions, and each had two apertures in it. They were operated by clock-work, and gave an exposure of one-fiftieth of a second, and an interval between the exposures of one fifth of a second. In front of these rotating shutters was placed an ordinary pneumatic shutter. A dead-black cloth was arranged as a background, and as a covering for the portion of the floor embraced in the range of the lens. The rotating shutters having been set in motion, the child was directed to walk or run across the room. When it reached the desired point the pneumatic shutter was opened, and held open until the child had reached the farther limit of the field, when it was closed and the rotating shutter stopped.

SOME OBSERVATIONS ON TUBERCULOUS JOINT DISEASE IN COLORADO.

Dr. George B. Packard, of Denver, read the paper. He said that from the fact that a large proportion of the adult population in Colorado is tuberculous one would expect tuberculous-joint disease to be very common among their offspring, but, as a matter of fact, it was much less frequently observed than in the East. The undoubted inherited tendency seemed to be checked by the climatic environment, but as quite a large proportion of the adult population in Colorado had arrested tuberculosis, it required but slight traumatism to arouse the disease to activity. Experience shows, however, that the disease runs a milder and shorter course than in the East. These favorable differences he attributed to the abundant sunshine, dry air and general climatic conditions which made it possible for the people there to spend the greater part of their time in the open air.

A NEW TRACTION APPARATUS FOR THE TREATMENT OF CLUB-FOOT.

Dr. Newton M. Shaffer, of New York, exhibited a new traction apparatus that he had devised, the essential feature of which was the placing of the centre of motion *below* the foot.

THE ANTERIOR ACHILLIS-BURSA ASSOCIATED WITH EXOSTOSIS A POSSIBLE FACTOR IN ETIOLOGY.

Dr. C. F. Painter, of Boston, present by invitation, read this paper. He said that he had seen eight of these cases, all in adults. On either side of the tendon there was a tender swelling, and walking on the bare feet was impossible. The affected area is hyperemic and the surface temperature elevated. In the two cases operated upon there was profuse capillary hemorrhage, suggesting the venous stasis of inflammation. The disease runs an essentially chronic course, and apparently has no connection with any acute infective process. The patients had been completely relieved by treatment, but had completely relapsed within a few months. The cause, therefore, seemed to be a constitutional one. In the acute stage the treatment should be rest, heat and the application of a bandage.

CONGENITAL DISLOCATION OF THE HIP-JOINT.

Dr. E. H. Bradford, of Boston, presented a paper on this subject. He said that the observation of adults with congenital dislocation of the hip had satisfied him that such a condition meant a life of disability, though not of complete helplessness. The hips can be replaced under the age of five years, but they show a strong tendency to slip out of position within a few months. By exploratory incisions in these cases of relapse it had been determined that failure in treatment was due to the falling in of the capsule, or by the cotyloid ring being too small for the neck. The difficulty with the bloodless operation was that it was not a certain one. With the cutting operation there was always a certain amount of danger of infection, because the wound was necessarily large, and the drainage imperfect. The wound should therefore be made as small as possible and every possible precaution taken against infection.

Dr. Whitman said that before the introduction of the bloodless method he had found great difficulty in securing consent to operate, and that now as the bloodless method enabled him to operate upon children as early as fifteen months of age, he would certainly prefer this method as the first step in the treatment. He did not believe that the obstacles mentioned in the paper really existed.

THIRD DAY.

AN OPERATION FOR THE CORRECTION OF WEB-FINGERS.

Dr. G. G. Davis, of Philadelphia, with the aid of diagrams, described a new method in making the flaps in operating upon web-fingers.

Dr. Gibney said that he had found the most satisfactory operation is that in which an incision is made along the dorsum and palmar aspects of the adjoining finger and the flaps brought around and united.

Dr. Goldthwait recommended cutting a sufficient flap from any convenient place, and then covering the raw surface with Thiersch grafts. This entirely prevented the formation of the disagreeable cicatrix.

ADENOIDS AS A CAUSAL FACTOR IN DEFORMITY.

Dr. F. S. Coolidge, of Chicago, presented a very suggestive paper on this subject, chiefly from the standpoint of prophylaxis. He took the position that adenoids were probably the cause of tubercular infection in some cases of joint disease.

Dr. Henry L. Taylor alluded to the relation between the absorption of poisons by the throat and the development of acute torticollis.

Dr. Shaffer spoke of a case of *petit mal* in which the seizures had been very markedly influenced by the removal of the adenoids.

GROWTH IN SPONDYLITICS.

Dr. Henry L. Taylor, of New York, said that a striking result of Pott's disease was its dwarfing effect. Growth in height is diminished by loss of substance, deformity and malnutrition. The degree of retardation will depend in a given individual on the age of invasion, the location, amount, severity and duration of the disease, and the hygienic and surgical management of the case. The ultimate result is usually a height and weight considerably below the normal. In early cases of average severity and duration, growth is much retarded up to the fourteenth year, from an inch and a quarter to an inch and a half being a fair rate, instead of the normal two inches and upward. As the rate of increase in stature and weight afford valuable information in regard to the condition and progress, and practical aid in the treatment of these cases, it was suggested that measurements of the standing and sitting heights (and weights) of spondylitics should be recorded from two to four times yearly. Such measurements, covering a series of years, would be particularly useful in enabling one to judge of new methods of treatment as, for example, the method of forcible reduction.

VENEREAL ARTHROPATHIES.

Dr. Stewart L. McCurdy, of Pittsburgh, read a paper with this title.

AN OPERATION FOR UNUNITED FRACTURES OF THE NECK OF THE FEMUR.

Dr. Arthur J. Gillette, of St. Paul, read a paper on this subject. The paper contained a report of three successfully treated cases of ununited fracture of the neck of the femur, in which the ends of the fracture were denuded and the bones placed in apposition and held in position with bone pegs.

ELONGATION OF THE LIGAMENTUM PATELLÆ AS A FACTOR IN THE PRODUCTION OF HEY'S INTERNAL DERANGEMENT OF THE KNEE-JOINT.

Dr. N. M. Shaffer said that there could be an elongated ligamentum patellæ without subluxation of the semilunar cartilage, provided there was not much lateral mobility. In these cases the tubercle of the tibia is often situated considerably to the outside of its usual position. The object of his treatment had been to allow only of antero-posterior motion, and it had succeeded admirably.

VOLUNTARY LATERAL DISLOCATION OF THE KNEE IN INFANTS.

Dr. Augustus Thorndike, of Boston, described two cases in infants, about one year old, in which the ligament allowed considerable lateral and rotary motion in the straight knee. When the knee was flexed from 20° to 45° the voluntary lateral dislocation could be produced with an audible snap. The dislocation could be produced by flexing to a right angle or extending the knee. The treatment by a simple hinge-splint had yielded well in one case after three years.

A REPORT OF A CASE OF SPONTANEOUS DISLOCATION OF THE HIP DURING TYPHOID FEVER.

Dr. L. A. Weigel, of Rochester, reported such a case occurring in a girl of eight years, in the sixth week of typhoid fever.

BED-POSITION AS AN ETIOLOGICAL FACTOR IN SPINAL CURVATURE.

Dr. G. W. Fitz, of Boston, discussed the subject briefly with the aid of lantern slides. He said that sleeping upon the same side habitually tends to fix a curve of the spine by favoring the growth of the bone and ligaments on one side, and retarding the growth on the other.

Dr. W. R. Townsend, of New York, was elected President, and Dr. John Ridlon, of Chicago, Secretary of the Association for the ensuing year.

THE BOSTON

Medical and Surgical Journal.

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THE ARRIVAL OF THE "BAY STATE."

The hospital ship *Bay State* reached Boston August 30th, from Santiago, having on board forty men from the Second and sixty-one from the Ninth Massachusetts Regiments. There were but three deaths, all from the Ninth Regiment, one from dysentery before the vessel left Santiago harbor, and the other two from typhoid fever on the first day out. Dr. Herbert L. Burrell, the surgeon in charge, to whom we are indebted for the following details, said that all the men taken on board at Santiago were in a pitiable condition, many of them delirious from exhaustion and fever. Thirty-two of the number were regarded as dangerously ill, but all improved marvellously on the journey, as a result of the more salubrious air and unremitting attention of the medical and nursing staffs. Owing to the wretched condition of the patients, it was thought that many would succumb on the voyage, an anticipation which, fortunately, was not realized. The soldiers suffered mainly with typhoid and a pernicious form of malaria, which was not infrequently accompanied with cerebral symptoms, such as aphasia and paralysis. There was no yellow fever, contrary to certain rumors which had spread before the arrival of the ship.

Although much prostrated by the great heat and unusual climatic conditions in Cuba, there was, fortunately, no serious illness among the physicians and nurses. Had they been obliged to stay another week, however, Dr. Burrell felt sure that many of them would have broken down, so great was the strain upon persons unaccustomed to the climate. A panic among the sailors was narrowly averted on the homeward voyage, due to the fear of yellow fever, which was aggravated by the prevalence of diarrhea. Vigorous measures and active treatment, combined with cooler weather, prevented what, under other circumstances, might have been an exceedingly unpleasant, if not actually disastrous, occurrence.

Dr. Burrell brings back a report of the condition of things at Santiago, which forces one to think that the daily press has in this, at least, not been led into any over-extravagant statement. The town is practically in a state of panic, and the fear of yellow fever is extreme. As a matter of fact there are comparatively few cases in the city proper, though it is prevalent at Siboney, in spite of General Miles's precautions. Some of the outlying Spanish camps are also said to be infected. Means of communication are exceedingly imperfect in the city and must interfere greatly with its adequate government and the proper embarkation of the sick. It was twenty-four hours before Dr. Burrell could get word to the palace (headquarters of the provisional government) that he was ready for the reception of the sick soldiers.

On the arrival at the wharf in Boston admirable preliminary arrangements made the work of disembarkation easy, and the soldiers, though still feeble and many of them unable to walk, were quickly and comfortably sent to the City and Massachusetts General Hospitals. The soldiers are warm in their praise of the treatment accorded them on the trip, and we learn with pleasure that their general condition bears ample testimony to the care they have received.

It is a source of the heartiest congratulation that the *Bay State* has more than justified the pains taken in her equipment, and demonstrated conclusively what may be done in the transportation of the sick, with skilled medical direction and careful nursing.

◆

THE RESPONSIBILITY FOR THE CONDITION OF OUR SOLDIERS.

The American people, having undertaken a war known to involve great losses of life from climatic conditions, and finding that the natural result has occurred, and that great mortality has resulted among the troops, is naturally overwhelmed by an immense wave of sympathy for the soldiers and demands a strict accounting from any of the officials who may have been responsible for any unnecessary sickness, suffering and death.

There is now no question that a Congressional investigation of the conduct of the war will take place, and it is well that the investigation should be held by Congress, as an investigation by a board appointed by the Secretary of War might be open to suspicion of unduly favoring that official.

In such a procedure as this, the American people should not forget the fact that the country itself, as represented by Congress, may be found guilty of a not inconsiderable share of the responsibility for the evils which have occurred. As recently noted editorially in the *Boston Transcript*, "Surgeon-General Sternberg in a letter to the *Army and Navy Journal*, published recently, stated that he begged and implored Congress to give him power to increase the medical corps of the army to a real war footing, and that one of the last acts of that body previous to its adjournment was to reject the project he had drawn up with great care. Had he been given the power he asked for, he believes he could have made such an expansion of the medical service of the army that much suffering and great expenditures would have been prevented. Commissary General Eagan points out to a critic of his department that the army ration is regulated by Congress, that it is in the law of the land which neither he nor any other officer has a right to alter, however much they may think the dietary of the soldier unfitted to a peculiar service.

To quote the apt phrase of the editor, "It is as important to get at the truth as to get at Alger."

The policy which has been for thirty years persisted in by Congress, of maintaining the army on the smallest possible footing, and grudging the expenditure of a dollar to increase its numbers or efficiency, will, we suspect, be found to be largely responsible for the present unfortunate conditions. The machinery for taking care of a few scattered regiments of regulars doing police duty on our western frontier cannot be expanded in a few weeks so as to adequately provide for an army of 200,000 men. Nor can such an army, hastily recruited of undisciplined volunteers, have one-half the efficiency of regular troops. If this war has demonstrated any one thing, it is that it is the regular troops upon which we must depend to fight the battles of the nation.

It is the discipline of the men who know their business, who have been trained to fighting, and what is not less important, to camp life, upon whom the brunt of the campaign has fallen. It is largely to the lack of knowledge of the principles of camp sanitation, or at least the lack of enforcement of these principles by the volunteer officers, that the spread of typhoid in our camps has been due.

There is food for reflection in the fact that it is the regulars who win our battles, and the volunteers who bring sickness into the camps by poor discipline and careless living, which fact, however, does not prevent the volunteers from coming in for the lion's share of glory and public sympathy.

Our national policy of continuing in time of peace as if we were never going to need an army has, it is to be hoped, received its death blow. Unless we can feel assured that we as a nation shall in future have to undertake no further wars of humanity it would be well for us to remember in time of peace to prepare for war. Then if war again becomes inevitable, we shall have a war department adequate to the care of large bodies of troops, one to which problems of transportation, supplies and medical care shall be comparatively simple, and by which sanitation as applied to large bodies of troops is thoroughly understood. We shall also have an army equipped and disciplined for immediate effective service, and not be compelled to resort to the hasty, ineffectual, expensive and fatal necessity of hastily equipping and organizing volunteers.

MEDICAL NOTES.

A Monument to Charcot.— The monument to Charcot will be formally unveiled in the Saltpêtrière in Paris on October 23d.

Professor Mosso Honored.— Professor Mosso, of Turin, has been elected a correspondent of the Paris Academy of Sciences in the section of medicine and surgery.

Appointment of Dr. Zograf.— Dr. Zograf has been elected extraordinary professor of zoölogy, and Dr. Mrensbier, extraordinary professor of comparative anatomy in the University of Moscow.

Plague in Bombay. — It is reported that there were 2,300 deaths from the plague last week in the Bombay presidency. The epidemic is spreading and there has been a fresh outbreak in the State of Hyderabad.

A Gift to the Hospital Saint-Louis.— Madame Péan, in accordance with the wishes of her husband, has presented to the Hôpital Saint-Louis, Paris, his valuable collection of anatomical and pathological casts.

Waldeyer and Leyden Appointed — Waldeyer, professor of anatomy in Berlin, has been made rector of the University for the year 1898–99. Professor Leyden has been appointed dean of the medical faculty.

A Monument to Professor Meyer. — The monument to Prof. Wilhelm Meyer, the discoverer of post-nasal vegetations, will be unveiled in Copenhagen during October. An address will be made by Sir Felix Simon.

Growth of the British Medical Association. — The report of the Council of the British Medical Association shows that the number of members is 17,746, an increase of 791 since last year. The number of new members, 1,473, is the largest recorded in any one year since the Association was founded.

A Loss to the Pepper Laboratory. — By a recent codicil to the will of the late Dr. Pepper, a bequest of $75,000, as an endowment of the William Pepper Laboratory, of the University of Pennsylvania, was revoked, and the amount given to the department of archeology and paleontology of the same university, for the purposes of the university museum.

Leprosy in Russia — We learn from the *Philadelphia Medical Journal* that a commission recently sent by the Prussian Government to report on leprosy in Eastern Russia reports the number of cases to be about 5,000. The disease has been prevalent for about 100 years and seems to be confined to the southern and eastern parts of the country. The treatment of the disease in isolation hospitals has proved most successful.

Cosmopolitan Osteopathy.—The so-called "Cosmopolitan Osteopath" makes the following statement: "Osteopathy has no war with surgery. Surgery is an established science, and we believe that surgery and osteopathy should go hand in hand, and that the two can safely master every curable disease known to mankind. Surgery and osteopathy is a grand combination, and the osteopath and the surgeon combined can conquer all forms of disease."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, August 31, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 15, scarlet fever 11, measles 9, typhoid fever 21.

A Fatal Rattlesnake Bite.— A young woman, whose employment was that of a so-called "snake-charmer," was bitten in the hand August 28th, at noon, by a rattlesnake which she was handling. She was taken to the City Hospital, but all attempts to save her life were unavailing, and she died at 11.15 in the evening of the same day. She was very much prostrated when she reached the hospital.

The Hospital Ship "Olivette." — A visit to the hospital ship *Olivette*, on her arrival in Boston last week, showed that every possible arrangement had been made for the care and comfort of the sick soldiers, whose quarters were clean, comfortable and in excellent condition. To Major Appel of the Army Medical Service, who was in charge of the ship during the trip, is due the credit for the good care received by the soldiers on the trip. He was hampered in his work by inability to procure a sufficient number of competent male nurses. The *Olivette* sailed for Fernandina, Fla., on August 25th, having been fitted out with supplies while at this port, by the Massachusetts Volunteer Aid Association.

Dr. H. P. Bowditch at Edinburgh.— On the occasion of the conferring of honorary degrees at Edinburgh, at the recent meeting of the British Medical Association, the Dean of the Faculty of Law, introducing Prof. Henry P. Bowditch, said: "The Metropolitan University of Scotland rejoices to offer her degree to one who is justly regarded as a pioneer and leader of scientific enterprise in the United States of America. The researches which the distinguished tenant of the chair of physiology in Harvard University has himself prosecuted have added not a little to the advancement of that science, notably those into the laws regulating the growth of children, the force of ciliary motion, and the innervation of the vascular system. But, more than this, he has stimulated others to carry on research, and has so efficiently trained his countrymen in the most approved methods that we are justified in largely attributing to his influence the present position of the American school of physiologists. I now beg you to confer upon the distinguished American the Honorary Degree of Doctor of Laws."

Danger of Typhoid at Camp Wikoff. — Dr. Nicholas Senn is reported as stating that there is great danger of an outbreak of typhoid at Camp Wikoff unless the troops are soon removed to other encampments. The danger is due to an inevitable pollution of the water-supply.

A New Hampshire Hospital Train. — A hospital train is to be fitted out by the New Hampshire Soldiers' Aid Society, and to start at once for Chickamauga to bring back the fifty New Hampshire soldiers who are said to be at the division hospital there.

NEW YORK.

Deaths from Heat. — On August 25th there were eleven deaths directly attributable to the excessive heat and humidity. The effects of the long-continued hot wave are seen in the augmented mortality of the city. In the Boroughs of Manhattan and the Bronx the number of deaths reported increased from 96 on August 20th, to 150 on August 25th.

Deaths in New York State in July. — The report of the State Board of Health for the month of July, just made public, shows that during the month there were 11,441 deaths in the State. Following the month of almost the lowest mortality, the bulletin says, July is always the month of largest mortality of the year. The present reported mortality is 2,800 in excess of that of the month preceding. This increase is chiefly in deaths from diarrheal diseases, from which 2,000 more deaths occurred than in June, and in deaths credited to other diseases of the digestive organs. The mortality of early life upon which these diseases chiefly fall was double that of June. The relative zymotic mortality is likewise doubled, but in diseases other than diarrheal there is no variation. Compared with the month of July of former years, there were 200 more deaths than in that month in 1897, which owing to the comparatively low temperature prevailing, was an unusually healthy July, but the deaths occurring this month are fewer than the average of the past ten years. The diarrheal mortality is less even than last year, and the increase has been in deaths from local diseases. Diphtheria caused 150 deaths, or about one-half the normal average for this month and outside the metropolis there were only 36 deaths from it. Small-pox has occurred, one case in the town of Livonia and four or five in the town of Waverly, possibly traceable to sources heretofore reported in the central part of the State. All have the mildness characteristic of other cases reported. The total number of deaths in New York City during the month were 6,858, of which 3,609 occurred in Manhattan Borough, 2,441 in Brooklyn, 332 in the Bronx, 318 in Queens, and 158 in Richmond.

Opening of First Free Gymnasium. — The formal opening of the first free gymnasium in the city of New York, which is to be known as the Hudson-bank Gymnasium and Playground, took place on August 27th under the auspices of the Out-door Recreation League, who fitted up the grounds. A large and appreciative crowd was present, and athletes who took part in the exercises were furnished by a number of clubs. The gymnasium is situated on the old Stryker estate at Eleventh Avenue and 53d Street, and running back to the Hudson River. The superintendent is F. J. Cartwright, formerly connected with the gymnasium of Yale University, and the kindergarten department is under the charge of an experienced teacher. It is hoped and expected that the city, in worthy imitation of the Boston authorities, will eventually take charge of the gymnasium and playground, and also provide facilities for ocean bathing to the poor.

A Public Recreation Pier. — The third public recreation pier on the East River was opened, with a band of music in attendance, on August 27th, at the foot of East 112th Street. It is 205 feet long, 32 feet wide, and cost $30,000. The district adjoining the pier is principally inhabited by poor Italians.

Miss Helen Gould's Gift. — Miss Helen Gould, daughter of the late Jay Gould, has given $5,000 to the Manhattan Eye and Ear Hospital for the endowment of a free bed.

Help for Sick Soldiers. — The public mind seems to be thoroughly stirred up by the sufferings of our sick and wounded soldiers, and each day develops some new effort for their relief. Miss Gould, after having made two personal visits to the camp at Montauk Point, recently made a donation of $25,000, to be employed by the Women's National War Relief Association, and Mr. H. M. Flagler has given $5,000 to the National Red Cross Relief Committee. On August 27th the steamer *John Lenox* was sent to Camp Wikoff with an assorted cargo of hospital supplies by the Merchants' Association of New York, and on the 29th, Col. John Jacob Astor's large yacht Nourmahal arrived with supplies provided by the summer residents of Newport.

A New Hospital for the Troops. — In view of the proposed transfer of sick New York troops to Fire Island, which it will be remembered was purchased by the State at the time of the cholera scare a few years ago, Dr. Doty, Health Officer of the Port, has sent word to Governor Black that he can prepare the hotel, cottages and grounds on the island for the reception of five or six hundred convalescent and sick soldiers, and provide a sufficient corps of nurses within one week. He also offers to attend to the sanitary arrangements, water-supply, etc., and keep the camp under his personal observation, inasmuch as the State property at Fire Island is within the jurisdiction of the Health Officer.

Poisoning by Ice Cream. — Three deaths and thirty-two serious cases of illness, were recently caused by ice cream at a summer boarding-house at Greenfield, in Ulster County. An investigation is in progress, but it has not yet been determined whether the trouble was caused by ptomaines or by poisonous matter in the lemon extract with which the ice-cream was flavored. It is stated that the extract was purchased from a strolling peddler.

METEOROLOGICAL RECORD

For the week ending August 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...14	30.24	67	74	61	63	68	66	N.W.	S.E.	8	3	O.	C.	
M..15	30.23	71	76	66	79	74	76	N E.	S.	3	9	O.	C.	
T...16	30 08	74	85	62	77	82	80	S.E.	S.W.	7	14	C.	O.	
W..17	29.95	78	89	67	78	86	82	S.W.	S.W.	12	5	O.	O.	
T...18	29 97	76	85	67	78	78	78	N.W.	S.W.	10	5	C.	O.	1.03
F...19	29.93	70	74	65	95	90	92	W.	N.	3	9	R.	O.	
S...20	30.01	68	75	61	77	63	70	N.W.	W.	9	6	C.	C.	.99
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 20, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Whooping-cough.
New York . .	3,438,899	1341	684	25.20	9.24	20.30	1.26	1.19
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	276	177	5.04	5.04	—	72	.36
Boston . . .	517,732	282	149	28.00	7.60	24 15	1.75	.35
Cincinnati . .	405,000	64	—	7.80	7.80	3.12	1.56	—
Cleveland . .	350,000	—	—	—	—	—	1.04	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	112	40	20.47	12.40	8.02	8.90	2.67
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	69	36	46.40	8.70	36.25	2.90	4.35
Nashville . .	87,754	21	6	9.52	4.76	4.76	4.76	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	105,050	45	26	46.62	2.22	31.08	—	8.88
Fall River . .	95,919	54	40	62.90	9.25	61.05	—	—
Lowell . . .	87,193	44	27	38.57	15.89	29.51	—	4.54
Cambridge . .	86,812	36	23	45.24	15.08	30.47	—	2.77
Lynn	65,220	—	—	—	—	—	—	—
New Bedford .	62,416	36	25	41.55	5.54	34.78	—	2.77
Somerville . .	57,977	30	22	63.27	—	46.62	3.33	3.33
Lawrence . .	55,510	38	20	57.86	5.26	49.97	2.63	—
Springfield .	54,790	15	8	39.99	16.66	26.66	—	6.66
Holyoke . . .	42,364	20	11	55.00	10.00	35.00	5.00	—
Salem	36,062	12	7	25.00	16.66	25 00	—	—
Brockton . .	35,353	5	4	40.00	—	40.00	—	—
Malden . . .	32,891	15	8	52.22	26.66	52.22	—	—
Chelsea . . .	32,716	11	4	—	9.09	—	—	—
Haverhill . .	31,406	13	6	35.70	14.28	28 56	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	11	4	27.27	—	27.27	—	—
Fitchburg . .	28,392	6	4	16.66	—	16.66	—	—
Taunton . . .	27,812	19	9	26.30	5.26	26.30	—	—
Quincy . . .	22,562	7	3	42.84	14.28	42.84	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	6	3	16.66	33.33	16.66	—	—
Everett . .	21,575	4	1	—	—	—	—	—
North Adams .	19,135	7	5	42.84	28.56	42.84	—	—
Chicopee . .	17,368	7	5	28.56	—	28.56	—	—
Medford . . .	15,832	5	3	60.00	—	60.00	—	—
Newburyport .	14,794	5	2	—	—	—	—	—
Melrose . . .	11,965	5	3	60.00		60.00	—	—

Deaths reported 2,537: under five years of age 1,373; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 736, consumption 232, acute lung diseases 127, diarrheal diseases 587, typhoid fever 43, whooping-cough 34, diphtheria and croup 33, cerebro-spinal meningitis 17, scarlet fever 10, measles 7, erysipelas 5.

From diphtheria and croup New York 13, Baltimore 8, Boston and Cincinnati 2 each, Washington, Providence, Lowell, Somerville, Lawrence, Springfield, Holyoke and Haverhill 1 each. From cerebro-spinal meningitis New York 6, Worcester 3, Somerville and Holyoke 2 each, Baltimore, Boston, Providence and Lowell 1 each. From scarlet fever New York 5, Boston 2, Baltimore, Fall River and Lawrence 1 each. From measles New York 6, Baltimore 1. From erysipelas New York 5.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending August 13th, the death-rate was 20.5. Deaths reported 4,410; acute diseases of the respiratory organs (London) 171, diarrhea 902, measles 74, whooping-cough 67, diphtheria 43, scarlet fever 25, fever 16.

The death-rates ranged from 13.7 in Blackburn to 29.1 in Preston; Birmingham 21.6, Bradford 7.2, Cardiff 15.0, Gateshead 14.6, Hull 18.4, Leeds 22.2, Liverpool 27.7, London 20.5, Manchester 21.0, Nottingham 15.5, Portsmouth 21.8, Sheffield 24.9.

TREASURY DEPARTMENT, OFFICE SUPERVISING SURGEON-GENERAL, MARINE HOSPITAL SERVICE.

Washington, D. C., August 25, 1898.

A board of officers will be convened at Washington, Wednesday, November 9, 1898, for the purpose of examining candidates for admission to the grade of assistant surgeon in the U. S. Marine-Hospital Service. It is desired that applications for this examination be made before November 1st.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: (1) physical, (2) written, (3) oral, (4) clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service assistant surgeons are entitled to examinations for promotions to the grade of passed assistant surgeon.

Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive sixteen hundred dollars, passed assistant surgeons two thousand dollars, and surgeons twenty-five hundred dollars per year. When quarters are not provided commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers travelling under orders are allowed actual expenses. For further information or for invitation to appear before the Board of Examiners, address

Supervising Surgeon-General,
U. S. Marine-Hospital Service.

ANOTHER CORRECTION.

Our attention is called to the fact that the Children's Hospital published, in 1895, an elaborate report on the general plan of those of the Boston City Hospital. Our note was, however, correct, inasmuch as it referred to the publication of annual reports, which so far have been issued only by the hospitals named.

RECENT DEATH.

Henry C. Bowen, M.D., M.M.S.S., surgeon of the Second Massachusetts Volunteers, whose death has been reported at Santiago, was a resident of Springfield for the four years previous to his enlistment with the Second Regiment. He was born in Castle Creek, N. Y., in 1868. He entered the University of New York and graduated with honors in 1892. He entered Bellevue Hospital in New York as house-surgeon. He was also connected with the Broome Street Lying-in Hospital in New York. While in that city he was a member of the Board of Health. Dr. Bowen went to Springfield about four years ago and had devoted himself with ability and success to surgical work. He was a member of the active staff of surgeons at the House of Mercy Hospital and of the Hampden District Medical Association. He leaves a father and mother and one sister, all living in Westfield.

Lecture.

TALKS ON THE HISTORY OF MEDICINE.[1]

No III. — Anatomy: Vesalius.

BY DAVID HUNT, M.D., BOSTON.

In our previous talks we have seen that medicine was among the ancients and through the Middle Ages simply a branch of general philosophy; we have described this condition as existing all through the sixteenth century, at least as far as physiology is concerned. We propose in this present session to describe another movement, which, it is commonly stated, began with Galen. At the beginning we must differ from these prevailing views. Galen was in no proper sense the founder of anatomy, any more than Paracelsus was the founder of physiology. Galen began the study of anatomy not as an observer but as holding certain preconceived notions, some his own, but mostly borrowed from the ancients who had preceded him. Aristotle and Herophilus furnished him much material, but his views were made up chiefly of a mixture of the ideas of Aristotle and the new thoughts which the Alexandrians had evolved, principally from the current notions of their great leader, Plato.

The rough attempts of the scholars of Salerno on pigs and the later attempts of Mundinus upon his scant human material were wholly in the spirit and manner of Galen. Many misunderstandings have resulted from the attempts to regard Mundinus as the restorer of real anatomy; these we shall have occasion to notice farther on, and we can then also pay more attention to the causes of the persistence of these notions up to our own time. We shall be able here, as in the history of the sixteenth-century physiology, to confine our attention mostly to Padua. Without going beyond the bounds which limit us here, we would refer to the works of Symonds upon the period of the Renascence for a detailed account of the manner in which the liberalism of the Court of Frederic II was made the spirit of northeastern Italy. We have only to consider the fact that Padua was the intellectual capital of the district, although in many material aspects it was simply a dependency or suburb of Venice. We may recall the fact that Frederic was the author of the edict which required of all physicians and surgeons a study of human anatomy. Mundinus was a creature of this influence, although fate determined that his beginnings should be made in the neighboring school of Bologna. Montagnana, in 1444, speaks of a number of dissections which he had witnessed at Padua. Mundinus had by this time become a classic in Italy, as Guy de Chauliac, of Montpelier, had in France; each became media, in their respective spheres of influence, through which the physicians and surgeons viewed Galen. In the further development of anatomy in Italy by Barengarius de Carpi, the spirit of the work of Galen was as dominant; no error striking enough to cause any weakening of the influence of Galen was discovered. It was the same with Achillini, famous as a disputant (*aut diabolus aut magnus Achillini* was a tribute to his powers in disputation); he brought no change in method. Alexander Benedictus, of Padua, marks a higher tide of the Galenical study of man's organism in his "Historia Corporis Humani." His quotations are more classical; he makes a more select mention of philosophers and poets and, as a whole, his text shows something of the formal development of taste, just as the plates of Johann de Ketham exhibit the same influence in the department of pictorial art. The humanistic movement was in full swing and these were its manifestations in anatomy; it touched the outside — the form of medicine — it did not work in it a "new spirit." It strengthened the worship of Galen, it exhibited him in a new light as a "classic." Learning found a new delight in rescuing him and the rest of the ancients from the "barbarism" of the Arabic and scholastic commentators. An exactly similar movement was going on in Paris, the great rival of the Paduan school. William Cope and the two teachers of Vesalius, John Guinterius and Jacob Sylvius, were, with the formal polish of the time added, types of the same slavery to Galen as that which held Mundinus and Guy de Chauliac.

Vesalius is the founder of modern anatomy; he was the first man who formed an idea of the full meaning of a knowledge of the structure of man's body and had courage, strength and patience to convert this idea into a reality. In view of the fact that the worthiest notice of Vesalius, in English, is by laymen — men who with all their scholarship wrote with only the deceptive annals of copyists for sources, and without the technical interest which practice of our art alone can furnish — I make no apology for a considerable compend from the recent biography of Vesalius by Professor Roth of Basle.

Vesalius was born in Brussels, capital of Brabant, on the 31st of December, 1514, or January 1, 1515. His family were originally named Witing and were located at Wesel in Cleve; later they settled at Nymwegen and changed their name, thinking of their old home, to Vesalius. The three weasels (Flemish Wesel) in the arms of Vesalius is a play upon this circumstance.

Vesalius came from a generation of doctors; his great-great-grandfather Peter wrote a comment upon the fourth Feniculus of Avicenna; he caused copies to be made at great expense of many celebrated medical manuscripts. *His* son John was physician to Maria of Burgundy, wife of Maximilian First, and taught medicine at Louvain. The Vesalius family remained connected with the Austrio-Burgundian rulers. Eberhard followed his father, John, in his place of physician to Maria of Burgundy, but he died as a young man. Eberhard, grandfather of Vesalius, wrote famous commentaries on Rhazes and on portions of the "Aphorisms" of Hippocrates; besides he was an excellent mathematician and wrote much upon mathematical subjects. Andreas Vesalius, the father of the great Vesalius, was body physician to Charles V and accompanied him in many travels and campaigns. During the truce at Nizza in 1538 he laid some of his son's first anatomical plates before the emperor and thus began to prepare the son's way to the court.. The father appears to have made the French-Guelder campaign with the emperor during the years 1542–1544; at any event, he was royal apothecary. He died, at the latest, in 1546, leaving his widow, Isabel, to aid Vesalius, in obtaining for him the privilege for printing his great work; this she sent to him, at Basle, in 1543.

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[1] A course of four lectures delivered by invitation before the Harvard Medical Alumni Association, February, 1898.

Little is known of the youth of Vesalius; he himself tells how, in learning to swim, he noticed the arrangement of the fibres in the coats of the bladders which he used. He attended school at Louvain, and later he speaks with scorn of his theological teacher, who dosed him, *ad nauseam*, with superstitions which he illustrated by the use of the plates of the "Margerita Philosophica" when attempting to teach him of Aristotle's "De Anima." When he was fourteen he attempted to get an idea of human anatomy by reading Albertus Magnus and Michael Scotus; and he dissected mice, moles, rats, dogs and cats. In 1533 he went to Paris, where the young men of Europe were flocking to study under the great Jacob Sylvius. As many as four hundred scholars congregated at a session; Johannes Guinterius of Andernach also taught him at Paris. Jacob Sylvius, of Amiens, was an excellent scholar in Latin, Greek and Hebrew; he was author of a French grammar. When he began his medical lectures in Paris he was over fifty years old and he considered his Galen infallible; to him Galen's "De Usu Partium" was God-like, and progress beyond the limits which Galen had established was simply impossible.

Guinterius, of Andernach, began his life in Paris in 1527; he at first lived from the proceeds of his translations of various Grecian writers. Vesalius, at a later period, embittered by the attacks of his old teacher, says that he never saw him with a knife in his hand except at the table.

At that time the public dissections in Paris, and it was much the same in Italy, lasted three days. The dissecting was performed mostly by barbers. No muscles excepting those of the abdomen were shown; there was no osteology; no arteries, veins or nerves were demonstrated. In the midst of these conditions Vesalius, fired by the curiosity which he had felt in his boyhood, with dim conceptions wakened, no doubt, in the "doctor" surroundings and traditions of his home, found himself thwarted on every hand by lack of material and by the pedantry of his teachers. Under these circumstances Vesalius swore that human anatomy should become the work of his life and that he would comprehend it. It was at this period that he nearly lost his life in his struggle with the dogs who fought him for the bones which he attempted to collect at Mountfacon. In 1536 Guinterius published a neat little sketch of anatomy, in which he gave a concise account of the facts which Galen had enumerated. The students had up to this time been referred to Mundinus, Guy de Chauliac, Alexander Benedictus and Barengarius. Several of these writers, following accounts of uncertain authorities, had described two of the auditory ossicles, the hammer and anvil, but Guinterius, a good type of the classical revival or Renascence in medicine, would have none of them; his classic text did not mention them.

"Who praises my work," says Guinterius, "in the opinion that all is Galen's, him I tell it is not Galen's, it is mine own; who despises the work as coming from me, he may know that all belongs to Galen and with me he will also despise Galen." In a later edition of his work, 1539, he acknowledges the assistance of Vesalius.

In 1536, Vesalius, having received his certificate in Paris, returned to Louvain, where he made a public dissection; this was the first which had been made there for eighteen years. This was the time and place of his exploit in robbing the gallows of the body of an executed robber for the purpose of making a skeleton. Here it was also that Vesalius received another lesson which was of use to him afterwards. In a discussion concerning blood-letting he took a modern view, as against ancient traditions upheld by Professor Thriverius. The latter was an old-fashioned Arabian in doctrine, with a thorough contempt of the new-fangled classic notions of such men as Manardus, Fuchs, Curtius and Brissot. He knew that Guinterius, Vesalius's old teacher in Paris, was a Protestant, that some of his friends, Rescius, the printer, and Sturm, were also of the despised sect. Inflamed by this knowledge, and by the opposition, he launched at Vesalius and his friend the dreaded name of medical "Lutherans." It was dangerous business at Louvain and Vesalius courted no more such dangers; he always played fair to the church. At Louvain he edited the ninth book of Almansor of Rhazes, and in this same year, 1537, he went to Venice. Here at the head of one of the church orders was John Peter Caraffa, later Pope Paul IV, and with him was Ignatius Loyola. Later, in 1543, the year of the publication of Vesalius's great work, the Jesuits were fully recognized by the Pope. When Vesalius met these future powers at Venice, their zeal was being expended in the care of the leprous. The spirit which the Council of Trent was destined to turn to other ends was the same as that exhibited in the works of charity. At Venice it was steam in the tea-kettle; the engines devised later to harness and direct the power were the causes of most of the struggles which resulted. Here also Vesalius met Johan Stephan, of Calcar, with whose aid in a few months he published his first anatomical plate. Soon Vesalius proceeded to Padua where, on the 6th of December, 1537, he began life as professor of anatomy in his twenty-third year. For the first time in the history of medicine a real professorship of anatomy was established. There were no barbers employed under the direction of a learned pedant, to endeavor under his lead to show what Galen or some other master had said should be seen, but an earnest, honest, capable man, fired by the conjoined elements of intellect and feeling, bursting all the shackles of formalism for a grand struggle with Nature herself, for the sake of humanity. Vesalius dissected and demonstrated himself. In 1538 came the first fruit, his anatomical plates drawn by Calcar and by himself, and in the same year he published his edition of Guinterius's "Institute," also his own tract on blood-letting, standing for the same ideas which he had upheld in his debate with Professor Thriverius. It is a subject of considerable medico-historical interest but it need not detain us now.

In his work at Padua Vesalius in a multitude of ways shows that he was an active, broad observer and thinker. His similes and illustrations are drawn from every department of human activity; the carpenter, the mason, the iron-worker and the glass-blower all seem to be sympathetically known by him. In his account of the heart he uses the comparison of a bundle of rushes fastened by their lower parts, at equal distances from each other, around a willow ring and gathered above in a knot. A string fastened to this knot and hanging down through the ring below enables him to imitate the action of the muscles of the septum; pull the string and you mimic the dilatation; press the rushes together with your hands in the middle and you imitate the contraction of the heart.

In 1540, while at work upon the anatomical portion of the great "Junta" edition of the works of Galen (1541), he finally broke altogether with the ancients. He was engaged in setting up two skeletons, one human and one of a monkey, when he found a process of the lumbar vertebræ in the monkey, never seen in man, but described as existing by Galen. In a flash it struck him "Galen had never dissected a man." "I cannot," he says, "wonder enough at my stupidity and trust in Galen which prevented me from seeing this before." He at once began the text of his immortal work. But this, his anatomical lectures, his studies of the text of Galen were not enough; during all these labors we find him studying Hebraic translations of Avicenna, and others, with the aid of a learned Jew, Lazarus de Frigeis. It was at this period that John Caius, the future president of the English College of Physicians and founder of the college bearing his name, lived in the same house with Vesalius. His professional activity as a fighter of irregulars brought down upon him the satire of Shakespeare, who gives his name to the apothecary in the "Merry Wives of Windsor." But no satire of Shakespeare's, even, is as biting as the plain fact that he lived at Padua, in contact with this grand beginning, and went back to England to spend his life in promoting the worship of Galen and the ancients; he lived at Padua in the full light of liberty and truth, he went home a practical Englishman to spend his life in a struggle for "privilege." Vesalius's friends were John Montanus, a really learned linguist, and the best scholar of the time in medical literature, the occupant of the chair of practical medicine at Padua, where he really founded clinical instruction, and Marcus Antonius Genua, the professor of philosophy than whom no more honored professor existed in Italy.

For a time we lose sight of Vesalius to find him again at Basle in the beginning of 1543 attending to the printing of the "Fabrica" and "Epitome." During this period he prepared the famous Basle skeleton. He may have left the city in 1543 for the campaign in Gueldres; we have little but his mention of the campaign to guide us. It is sure that he shortly returned to Italy for his anatomical lectures of the year, but in 1544 he went to Pisa. At this time Cosimo de Medici was attempting to revive the university there and he made a very liberal offer to Vesalius of the professorship of Anatomy, but the call to be physician to the emperor was already accepted. The grand period in his beloved Italy was finished; the peaceful, joyous life of the investigator was to be exchanged for the cares and vexations of Court and practice. Of the next two years there is but little known; he was married in 1544 or 1545; he wrote a practical tract on the China root, and he mentioned Cardanus for the position of physician to the King of Denmark, a place which Cardanus did not accept. Vesalius was at Augsburg with the emperor for a while, as we find from some details of his practice. In October, 1548, he was back again at Brussels; in 1550 again at Augsburg (July 8th), at a meeting of the Reichsrath, in attendance on the emperor. His chief labor at this period was the preparation of the second edition of the "Fabrica," which, dated 1555, was for the greater part published in 1552.

The emperor's plan to become the head of Christendom failed. In 1552 he was obliged to retreat over the Tyrol; the next winter he could not maintain his siege of Metz, and, defeated, he retired to Brussels. We know nothing of Vesalius during the winter of the siege of Metz, 1553, but he was with the emperor at Brussels. In 1555 we have an account of his diagnosing an aneurism of the aorta at Augsburg, but his fate was changed suddenly in 1555 by Charles's abdication of the crown of the Netherlands. The next year he resigned that of Spain and Vesalius was free again (1556). For two years more we have only scanty memoranda of his practice; then in 1559 we hear of him as sent by his new master, Philip II, to Henry II of France on a fruitless effort to save him from a dangerous wound. In 1559 he went to Madrid with Philip's court, taking his wife, who occupied probably some subordinate position in the establishment. Vesalius himself was physician to the embassy of the Netherlands. At the close of 1561 he wrote his review of the "Observations of Fallopius" his last book. The next year (1562) occurred the celebrated case of Don Carlos, the epileptic son of Philip II. The quarrels and traditions connected with this are not important for us and not half as suggestive as his rational treatment of a thoracic fistula in the case of the Duke of Terranovae. A few letters of consultation comprise all that we know until we find him at Venice, in 1564, on his way to Jerusalem; from the time of departure from Venice till his death during the return trip all is conjecture; there are three or four stories of his death, the oldest and probably the most reliable of which is that he died from a catarrhal attack in some city of Greece, and that pilgrims cared for him and brought the news of his death to his widow at Brussels.

The great works of Vesalius were the "De Humani Corporis Fabrica," Basle, 1543, and the "Epitome" of the same date. The first was intended for the scientific, professional student; it contains over seven hundred folio pages, more than three hundred wood engravings, of which about thirty are diagrammatic, the rest carefully drawn from nature; the text describing the human body, the plates, and the instructions in the art of dissection form an organic whole. The "Epitome" is important in connection with the main work. Vesalius in this gave more than he promised, for it is not a compend; in some important particulars it supplements the main work.

Vesalius's first effort, in his great work, was to demonstrate to an unwilling profession that Galen, their idol, in his "De Usu Partium," and in his anatomical observations, had mingled what he read in ancient authors, what he had observed in dissecting monkeys, and what little of human osteology and anatomy he picked up at Alexandria, in an unreliable and unnatural account of the structure of man; further, that he had dodged all difficulties which he found in his way and that, most important of all, he had not gone straightforwardly to nature for answers to direct, plain questions, but sought chiefly, in his observations, support for his preconceived notions. Vesalius merely told his experience; for instance, he followed Galen in illustrating a muscle extending from the neck down on to the breast, but in the text he explains that when the illustration was made he would have sworn that Galen was right, and that this "breast mover" of Galen existed in man as well as in dogs and monkeys, later he saw his error and he corrects it. It was not that he wished to belittle Galen or the ancients; he found mistakes made by Aristotle, but he follows him in deriving the origin of the veins from the heart; he finds Oribasius's compilation a valuable source for correcting some deficiencies in Galen's work; he finds that Avicenna copied from Oribasius, and in general he says the Arabians added something to the ancients. He does not accept Barengar's excuse, common at the time, that man's structure had changed since the ancients wrote their descriptions; he laughs at Dryander, who pictures a saw which could not be used, and, while Guinterius was his old teacher and friend, he could not say otherwise than that he knew little anatomy and was a complete slave to Galen. His other teacher, the great Sylvius, had warned him, having heard something of his doings, and seen his first anatomical plates, to have nothing to do with such plates and by all things not to criticise Galen. He answers by vindicating the use of anatomical illustrations and by publishing his great work; he adds much of physiology in his anatomy; he particularly mentions contractility as an imminent property of muscular tissue; he describes the method of artificial respiration, but he touches lightly upon the functions of the various organs. He mentions the magnifying power of the crystaline lens and is dissatisfied with the prevailing theory of vision; he finds no hole in the heart's septum but he does not totally reject Galen's notions upon this point, though he wonders how the blood can pass from ventricle to ventricle through the septum,— Sprengel follows Haller in mistaking Vesalius's position here. Cheiromancy he ridicules and refers the lines of the hand to the anatomical grouping of the soft parts; whatever may have been the case with Adam he finds that the male skeleton showed no lack of ribs as compared to the female; as he was writing his account of the teeth he had occasion to observe the eruption of one of his own wisdom teeth.

As to the plates, Roth finds that the full-length figures are based upon the average height of man in such proportion that those of the "Fabrica" are one-fifth, those of the "Epitome" one-fourth of the natural size. Vesalius was the first who noticed that the upper border of the symphysis pubis is the middle point of the human body. The wood-cuts were finished in Italy and sent to Basle about the end of August, 1542; the portrait of Vesalius bears the date of 1542, so that the cuts were made between 1538 and the latter date; most of them however during 1539 and the early part of 1540; the work was finished, as to text, August 1, 1542; the illustrations of the "Fabrica" before the rupture with Galen, those of the "Epitome" after that event, as was the text. Stirling-Maxwell says that Dr. Mead left a volume of the original drawings for the work and that they were sold at auction in 1755; where they are, if they exist, is unknown. In opposition to the prevailing opinion Roth thinks that Vesalius made many of the drawings himself although Vasari makes the statement that Calcar furnished eleven of the plates; the initial letters are made up of scenes idealized from the youthful life of Vesalius.

I have made a long list of the anatomical discoveries of Vesalius and of the additions and corrections made by Fallopius, Columbus, Fabricius ab Aquapendente and Casserius, all Paduans; also of the emendations of Varolius and Eustachius at Rome. After having made up the manuscript it seemed to me more in accordance with the purpose of these talks to omit these long details and keep to the idea of throwing out suggestions as to historical relations: the details are accessible to every one, the facts cannot be misinterpreted. Not so with the fame of the man himself; this has suffered and one of the greatest and most useful lessons which our profession can learn to-day is the cause of this injustice to the greatest benefactor of our profession who has ever lived. This statement will, of course, recall the name of Harvey, the immortal discover of the circulation, who himself speaks of the "great Vesalius" in correcting his notions of the movements of the heart; it is not necessary to belittle Harvey; his fame is secure and no greater than it should be; the discovery of the pulmonary circulation by Servetus, of the valves of the veins by Fabricius ab Aquependente, the near approach of Cesalpinus to a full conception of the meaning of the word "circulation" which he uses — all this in no way detracts from the grand merits of Harvey. The careful study by Flourens (1854) of these points have resulted in no suspicion on the part of any one that we of the English race have inflated the reputation which the careful researches and observations of Harvey have merited. They are, however, in every detail, splendid fruits of the tree which Vesalius planted.

In passing, it may be of interest to remark that the names of Vesalius and Servetus were associated in the work of their teacher Guinterius in 1539. The fact that Servetus was a medical man has been generally neglected on account of the title of his work (published 1553) and also perhaps on account of the theological shadow which Calvin's persecution of Servetus has thrown upon the matter. How then has it happened that Harvey having had full justice done him, we have been so tardy in our appreciation of the full merits of Vesalius? There is but one answer, we have left one great subject where the eighteenth century placed it; we have not developed a scientific medical history.

Every tyro in medical history knows the name and the history of most of the great discoverers of single striking facts, Harvey, Asselli, Pequet, and most of the great anatomical discoverers of facts are known either by the striking physiological importance of the new facts in practical medicine or by the association of their names with the parts described in anatomical literature, — but this condition is something like the old relations in history where the names of great dignitaries preserve the fames of wise men and little men indiscriminately, while the really great men and the really great movements are barely mentioned, or at least not displayed in true historical perspective; for instance, Niebuhr found occasion to notice the new conception of history produced by the American Revolution; Lecky to furnish an account of the origin and rise of Methodism; McCarty of English chartism. These and numerous other illustrations, which might include Bancroft and McMasters, are instances of philosophical conceptions of history common to our time, but of which few traces exist in medical history outside of Germany, and there, indeed, not in excess. The words of John Stuart Mill in reviewing Guizot are suggestive in this connection: "History with us (English) has not passed that stage in which its cultivation is an affair of mere literature or of erudition, not of science. It is studied for the facts, not for the explanation of facts. It excites an imaginative, or a biographical, or an antiquarian, but not a philosophical, interest. Historical facts are hardly yet felt to be, like other natural phenomena, amenable to scientific laws. The characteristic distrust of our countrymen for all ambitious efforts of intellect, of which the success does not admit of being instantly tested by a decisive application to practice, causes all widely extended views on the explanation of history to be looked upon with a suspicion surpassing the bounds of reasonable caution, and of which the natural result is indifference."

When Vesalius left Italy in 1543, Columbus took up his work at Padua; he was energetic and scholarly, and as the beautiful printing and beautiful woodcut frontispiece of his anatomy suggests, a man of elegant taste. His character, however, presents a less pleasing picture; he hated and envied his glorious teacher. Fallopius, greater in every way, patronized the reputation of the man who had broken the way for him and in spite of his other acquirements, was common in his lack of appreciation of real greatness. Ingrassius turned against Vesalius. In Germany Casper Bauhin and Felix Plater sought their idol among the ancients, while in France the active hatred of Sylvius and Guinterius came to a head in the younger Riolan, who belittled Vesalius in every way, at the same time attempting to elevate the French teachers of Vesalius and his predecessors in Italy as the real founders of anatomy. The efforts of every individual detractor were aided by the repressive efforts of the Church, and by the forces of Loyola, not that they attacked the man, they simply poisoned the air in which all who would or could have done justice to his merits lived; they did this by indirect encouragement of all the reactionary forces contained in sixteenth and seventeenth century medicine. The effect of all this is indicated in the different fates of Copernicus and Gallileo; the former put forth ideas as revolutionary as the latter; the heliocentric theory of the universe was perhaps more revolutionary than Gallileo's developments of the laws of motion, yet one died in the anti-Jesuit period a peaceful death as a priest, while the latter in the early part of the seventeenth century barely escaped the fate of Bruno. We have seen that Cusa, the Cardinal, published in the fifteenth century the same views, for publishing which Bruno was burned in the beginning of the seventeenth; we have seen that Calvin on his side was as zealous, as honest, and as cruel. All these forces were at their height in Italy and France, and the seventeenth century was quite young when Germany developed a horrible excuse, in the Thirty Years' War, for all literary and philosophical shortcomings.

The world, the flesh and the devil by their servants, the churches, and the churches again by their servants, the philosphers, were busy with other matters than science, truth and progress. In spite of the great anatomical and physiological achievements available, the profession seems to have made no progress for centuries. Fortunately the freedom which the Netherlands had conquered, in 1575, left a home for the student of nature; the University of Leyden was founded and Peter Pauw began the professorship in which after a while he was succeeded by Boerhaave and Albinus, under whose teachings Haller was formed. They were ably seconded by the labors of Morgagni in Padua and Winslow in Paris; with such leaders of medical thought it might seem that the reputation of Vesalius would receive justice; medical bibliography, medical history, in form at least, did revive, Eustachius was resuscitated. At the wish of Boerhaave, Lancisi published the plates of Eustachius; they were republished in a manner that has made it the first old anatomy which rewards the zeal of the embryonic collector; in fact, among the great medical scholars few failed to edit a comment on Eustachius.

Vesalius was also republished but not to such an extent as Eustachius; the artistic merits of the sixteenth-century wood-cuts were not reproduced in the apparently more finished but stiff copperplates of the Leyden edition; so the rugged vitality of Vesalius's genius, reminding one, instinctively, of Michael Angelo, was not appreciated by the formal erudition of the eighteenth-century editors. Our lack of appreciation of Vesalius seems stranger perhaps than it really is. The same phenomenon is not uncommon in general literature and art. The history of Chaucer, Spencer, Shakespeare and of many of our greatest artists, shows the same lack of appreciation of original genius.

Medical learning became as strictly conventional as it was in the sixteenth century; it was multifarious and pedantic; it had many excuses; there was a huge collection of material brought together with infinite labor and pains, but in the mass of details the relations of things were lost sight of or badly stated. Thus Haller, in writing of the irritability of muscular fibre, traces the doctrine back to Fernelius, and even to a certain extent to Galen, but he makes no mention of Vesalius.

Eighteenth-century medical thought in relation to science was very much like eighteenth-century religious thought in England in relation to ethics and to humanity. We all know how the church and the universities in England maintained a stolid conservatism against the efforts of the anti-slavery agitators, and how they left to the Wesleys all care of the religious needs of the masses; it was the same with eighteenth-century medicine until Senac and Bordeu began a movement which Haller's writings, particularly those on irritability, strengthened. A movement which produced in France Desault, Corvisart, and Xavier Bichat. In England the extra academic movement was to a great extent embodied in the work of John Hunter and the anatomists whom he trained. Then came the great historical facts of the American and French revolutions which opened up an entirely new view of history; the discussions which they caused fertilized the thoughts which the philosophers, the archeologists, and the poets, Goethe for example, had originated, — the heart and the brain of mankind were touched; everything promised the realization of the golden dreams of the idealists. The reaction which followed the downfall of the French republic brings us to the beginning of our own era: up to that time Europe lived under the stupid, selfish conservatism whose deeds need only be known to be abhorred. It remains for some American historian of thought and philosophy to show the deleterious effect of the narrow conservatism which ruled European thought, up to our epoch, upon the higher thought and learning in America.

To return to medicine, Portal in his "History of Anatomy" did attempt to do justice to Vesalius; he names him as one of the greatest men who ever lived, and he supports his statement by many strong arguments. Sprengel's great history, really pragmatic in the German sense, made a grand beginning towards a philosophy of medical history; unfortunately for us, the work has been used more as a mine for senseless compilers than as a stepping-stone to a scientific medical history. We in America are in a difficult position as to material, as far as rivalling the Europeans in this line is concerned; but in many ways we are fortunately situated as to the development of the philosophy of medical history; we are free, to a great extent from national prejudices, all our institutions favor liberal, honest, broad thinking: generally speaking, the profession is no where in the world so free from university and academic traditions. All these conditions mean, in spite of some apparent, superficial obstacles, a favorable course for development under the influence of the great laws of evolution.

There are numerous questions in medical history which need to be treated in the spirit of our own times; there is much material rejected or neglected by former historians which needs to be thoroughly worked over. Other reputations than that of Vesalius need vindication and as many need to be relegated to more subordinate positions. These, however, are simply first steps toward a better judgment of great professional movements which, initiated to a great extent during the last four centuries, are now in progress, and one is tempted to say as little understood, at least in England and America, as they were a hundred years ago. We shall be less scandalized by the tyranny of fleeting medical fashions, when we are made conscious, by a study of the evolution of modern medicine, of the origin, the present relations, and the future trend of professional thought and methods.

The fact that medical history is more developed in Germany and France than in England and America is no accident; but scientific medical history, a history that shall consist not merely in the statement of facts but in a study of the causes and relations of the facts, or as Mill has said, a study of these facts as we study other natural phenomena, is yet in its infancy. The increased number of medical histories in the last few years is an expression of the instinctive feeling of the profession; never in the history of our country was the profession as active, as full of the spirit of research, hence never has it so much needed the higher professional culture which shall enable it to deal with the increased production wisely. In the impossibility of mastering all the details which we are so industriously gathering we need a careful culture of that judgment by which we shall select for our needs and by which we shall correlate our selections with the great body of professional thoughts and acquirements. It needs no argument to prove that medical history, in the true sense, is the most promising means of cultivating the faculties needed.

Much of the latent force of the Continental professor lies in his knowledge, if only traditional, of the higher relations of medical thought to the thought of the day, of a better appreciation of the bearing of the results of latest research upon daily practice; this in turn is the best antidote to that medical philistinism which in England and America has been a principal obstacle to the development of sentiments favorable to research. In proportion as this antidote is employed the name and memory of Vesalius will become greater and greater, for he more than any individual was the founder of modern medicine.

Much of all that we have reiterated, perhaps at too great length, as to the importance of culture in medical history was felt by Thomas Jefferson when as rector of the University of Virginia he requested that a lectureship of medical history should be established in that institution. In the light of all that we have claimed for the beneficent effect of a study of the subject it remains to notice the dismal failure of this beginning. The cause is not difficult of discovery, Dunglison killed the thought of the philosopher by eighteenth-century, dry-as-dust methods; with no historical sense, no conception of the general movements of the time, he furnished a lifeless compend from Le Clerc which simply bored without enlightening his hearers. No later edition has mended the matter and our conceptions of medical history, founded upon this and similar compends, have served simply to gratify a mild curiosity as to a few dates and facts.

But a brighter day has dawned. Thanks to Auguste Comte and Herbert Spencer philosophy has become positive and scientific; sociology and biology are making anatomy and physiology philosophical with irresistible force; psychology is being founded more and more upon an anatomical and physiological foundation; the grandest dreams of Vesalius are becoming everyday facts; preventive medicine is engaging the attention of statesmen, — it lies with us by a broader and deeper study of our own history to make ourselves conscious partakers of the new scientific liberalism and progress; to broaden and balance our medical culture that we may be natural partakers with all who make the advance of humanity and sound culture their aim.

In the next talk the subject will be Thomas Sydenham and practical medicine.

Original Articles.

SEPTIC PERITONITIS AND ITS SURGICAL TREATMENT, INCLUDING REPORTS OF THREE SUCCESSFUL AND FOUR FATAL CASES.[1]

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IN this paper it is my desire to study general peritoneal infection and its surgical treatment, to determine, if possible, in what class of cases intervention is contraindicated, and briefly to report three successful and four fatal cases of my own, operated upon in the last year and a half.

Operation in many cases of general septic peritonitis is far too often regarded as hopeless interference, and there are in this neighborhood and elsewhere varying opinions in regard to the methods of operating and after-treatment. A study of the pathology and bacteriology, including the animal experimentation on the subject, should show plainly that the surgical treatment of septic peritonitis in most cases is *obligatory*, and also that there can be consistently only one method of combating the infection by operation.

Peritonitis is always caused by bacterial invasion. It may be suspected that there are cases of peritonitis the causative organisms of which cannot be isolated by our present culture methods, and there is no question that some peritoneal infections are so virulent that death results so promptly that none of the usual signs of peritonitis are evident post-mortem.

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[1] Read at Boston Society for Medical Improvement, April 18, 1898.

Reichel ascribes many sudden deaths after abdominal operations to such virulent infection. He cites two cases of his in which he made a post-mortem one hour after death, and found no signs of peritonitis, but cultures from the shining peritoneal surfaces gave active bacterial growth.

All the forms of pyogenic cocci have been found in the exudation of general peritonitis. The streptococcus is the organism most to be dreaded, although under certain conditions, the colon bacillus may be possessed of equal primary virulence. The staphylococcus albus is least virulent, and this organism, as also the citreus and the aureus, are often found in association with colon bacilli or streptococci. At times the aureus can cause a very virulent peritonitis.

The colon bacillus and its kindred, the bacillus lactis ærogenes and the bacillus fetidus (for these two are admitted to be practically identical with the colon bacillus) are not as yet entirely beyond dispute as causative agents of peritonitis.

It may be that the colon bacillus is the vigorous, highly resistant organism that overgrows the causative germs, the absorption of which is already causing toxemia. In general peritonitis from perforation of a typhoid ulcer the typhoid bacillus has never been found, but in most of the cases colon bacilli have predominated and in others pyogenic cocci. Klein found typhoid bacilli in the pus of a localized peritonitis after typhoid. Körte found typhoid bacilli in a case of general peritonitis originating from a suppurating mesenteric gland in the course of typhoid fever, but not from intestinal perforation. This is of certain significance as supporting the theory that in peritonitis from intestinal perforation the causative germs may be overgrown by the other bacteria of the intestinal canal. Recent observers, however, are united in deciding that in many cases the colon bacillus is possessed of great primary virulence.

Elting and Calvert, in a study of perforative peritonitis in dogs, found that the intense hemorrhagic peritonitis present in all cases gave definite bacteriological results in twenty cases out of twenty-two. In eighteen cases members of the colon group were found, four times alone, and fourteen times in association, streptococci once alone, and seven times in association. Staphlyococcus albus was found in five cases, but never alone; staphylococcus aureus once alone and three times in combination. In these cases cultures were made in from six to twenty hours after perforation, and the colon bacillus was the predominant organism.

Orlowski, of St. Petersburg, has furnished the most recent work on this bacillus. He isolated eleven varieties, and found the most virulent to be what he calls the "ground type," farthest from the typhoid bacillus in its characteristics. He found a constant relation between the virulence of these varieties, experimentally, and their power of milk coagulation. Injections of the sterilized toxins always caused prostration and diarrhea — not always death. Injections of living cultures, as well as the sterile toxins, into the peritoneal cavity of dogs or guinea-pigs always caused peritonitis.

The pneumococcus can cause peritonitis. This infection may occur without the association of pneumonia. It is undoubtedly a rare infection but may be extremely virulent.

Morisse collected eight cases in which it was the only organism found. Rosthorn, in 1894, reported three cases. Hartman and Morax report two cases. Reymond, in 1895, collected six cases. Flexner reports two cases, both fatal. Cases have been reported by Barbacci, Frankel, Sevestre, Netter, Gaillard, Wright and Stokes.

The bacillus pyocyaneus is not infrequently found in association with other bacteria. It may increase the virulence of a mixed infection from intestinal perforation.

Gonococci alone are incapable of causing peritonitis. There is now little difference of opinion on this point. However, we meet with the term "gonorrheal peritonitis." McCosh reported a case of so-called gonorrheal peritonitis in the male, in which the cause was the rupture of a peri-prostatic abscess. In this article he collected eight additional cases of gonorrheal peritonitis from literature. In these cases there are no bacteriological examinations reported, and we must infer that the cause of the peritonitis was due to mixed infection with pyogenic organisms. Von Winckel speaks of gonorrheal peritonitis, but does not show any cases of peritoneal infection with gonococci.

The weight of evidence goes to show that gonococci alone are harmless to the peritoneum, and that "gonorrheal peritonitis" is a misleading expression. The bacillus ærogenes capsulatus has been found in a few cases of perforative peritonitis. It is not pyogenic alone, but in the presence of pyogenic organisms may be the main cause of death.

A very rare cause of peritonitis is infection by the bacillus proteus vulgaris. Only one case has been found, that reported by Flexner of Johns Hopkins. This is the putrefactive organism found post-mortem in great numbers, and under normal conditions is not pathogenic to man. This case was most carefully studied by Flexner, and he seems to prove beyond reasonable doubt that the infection was primary and not a post-mortem invasion.

Infection with any of the enumerated organisms will cause peritonitis of varying intensity and character. The anatomico-pathological varieties have been best classified by Pawlowsky:

(1) An extremely toxic variety, the "mycotica," in which death may occur before reactive inflammation takes place on the peritoneal surfaces. In some cases the peritoneum may be covered with a slimy fluid containing a few blood corpuscles, small flakes of fibrin and many bacteria. There is no doubt that cases of such virulent infection occur that death results in a few hours with all the symptoms of shock.

(2) An infection of great virulence is also manifest in the hemorrhagic form, characterized by hemorrhagic extravasations and ecchymoses on the peritoneal surfaces of varying extent — with the intestinal coils markedly injected and distended — by a thin, brownish fluid exudation in which are pus corpuscles and masses of bacteria and fibrin, by fibrin flakes on the peritoneum. This is the common form met with in intestinal perforation.

(3) Fibrino-purulent and sero-purulent peritonitis, characterized by a thin, sero-purulent exudation with flakes of fibrin floating through it, and masses of fibrin on the peritoneal surfaces. This form is the first stage

(according to Pawlowsky) of purulent peritonitis — the sero-purulent fluid is made up chiefly of pus corpuscles and bacteria.

(4) Purulent peritonitis — a form characterized by an abundant purulent exudation of varying consistence.

These forms must run together to a great extent, no sharp division is possible. The kind of peritonitis met with will depend upon the kind of infection, its amount and virulence, and upon the intraperitoneal and systemic conditions in each case.

The less serious forms of peritonitis are the fibrino-purulent and the purulent, the most virulent the hemorrhagic forms. The purulent forms are of longer duration and may be caused by less virulent organisms or by smaller amounts of infection.

Streptococci, colon bacilli and pneumococci are the organisms usually causing the rapidly fatal and hemorrhagic forms, but they may under certain conditions of virulence, amount, or tissue resistance, cause the less fulminating and slower forms. Conversely, while under usual conditions staphylococci may be expected to cause the less fulminating variety, they may, and especially the aureus, under changed conditions cause the rapidly fatal types.

Under abnormal conditions bacteria possessed of little or no pathogenic power may cause a rapidly fatal peritonitis. In any condition where the fluids of the body depart from normal, where the vital resistance of the tissues is lessened and the peritoneum damaged, an infection usually of lesser moment may cause the gravest clinical picture. Such conditions are especially chronic renal or hepatic disease with or without ascites.

Perforation of the intestine is the commonest cause of the rapidly fatal hemorrhagic forms of peritonitis, yet in intestinal perforation any form of peritonitis may be found.

The sero-fibrinous, fibrino-purulent and purulent forms are different stages of a milder infection. In these forms operation is most favorable, for the fatal issue from toxemia is delayed. In some of these cases the fluid exudation will be found sterile at the time of the operation. This does not mean that the process was an aseptic one from the start. The life of bacteria in the fluid exudation is frequently self-limited and active organisms have been found in the fibrin masses on the parietal peritoneum when cultures from the fluid exudation gave no growth. The fact that no culture growth can be obtained is no proof that the individual may not have received previously enough sepsis to cause death. Sterile cultures are favorable prognostically, but they do not alter the fact that bacterial infection existed, neither do they influence methods of operation.

A knowledge of the histology of the normal peritoneum and how fluids and solid particles are taken into the lymph and blood systems is of the utmost importance to the abdominal surgeon, and a clear understanding of the changed conditions in a more or less general peritoneal infection is of the greatest moment in the surgical treatment of peritonitis. The scope of this paper will permit me only to touch upon the most recent investigations.

Muscatello in 1895 reviewed all preceding study of the normal peritoneum and its absorptive channels and his work has been of extreme service to abdominal surgeons, because the practical points were seized upon by Clark of Johns Hopkins. Muscatello's careful experiments can hardly be confuted, although Byron Robinson, of Chicago, in 1897 takes issue with him as to the presence of stomata between the endothelial cells.

There is controversy at present only as to these stomata. All careful investigators are agreed upon the following points which I can only summarize:

(1) The absorption of fluids by the peritoneum is enormous. In an hour it will take up from three to eight per cent. of the body weight, but under the influence of toxic or irritant substances an equal transudation into the peritoneal cavity may take place.

(2) Over the centrum tendinosum of the diaphragm, between the connective-tissue fibres in the diaphragmatic peritoneum, open spaces are situated measuring from four to sixteen millimetres in diameter and grouped in collections of fifty to sixty. These lymph spaces exist nowhere else in the peritoneum and through these the greatest absorption of both fluids and solid particles takes place. Fluids may pass through the endothelium in many places, but the solid particles are absorbed only by these lymph spaces in the diaphragm.

(3) Minute solid particles are carried from the peritoneal cavity through the diaphragm into the mediastinal lymph vessels and glands and thence into the blood circulation by which they are distributed to the abdominal organs to appear later in the collecting lymph glands of these organs. Larger sterile solid bodies are partly absorbed and the remainder encapsulated.

(4) The leucocytes are very largely the bearers of foreign bodies from the peritoneal cavity into the mediastinal lymph glands.

(5) There is normally a force or current in the peritoneal cavity which carries fluids and foreign particles from the pelvis toward the diaphragm, regardless of the posture of the animal (though gravity can favor or retard the current greatly).

Muscatello used carmine granules suspended in solution in his experiments and his work proves that bacteria and all solid particles gain entrance to the system only through the lymph channels of the diaphragm and the mediastinal glands.

This absorption by the normal peritoneum is nature's safeguard against septic peritonitis. Colonies of bacteria are foreign particles that are absorbed by these lymph spaces, just as the carmine particles in Muscatello's experiments, — but the absorption of bacteria has definite limits, as will be seen.

It is well known that certain amounts of bacteria will be taken care of by the peritoneum without peritonitis, if it is normal structurally when the infection is introduced. The ability to remove bacteria and their products depends upon the kind and amount of infection, upon the systemic condition of the individual, upon the integrity of the peritoneum, upon the unobstructed condition of the diaphragmatic openings and upon the presence or absence of culture media in the peritoneal cavity.

The experimental work of Wegner, Grawitz, Pawlowsky and Reichel, of Orth, Waterhouse and of Halstead from 1876 to 1892 is practically harmonious in these conclusions, and is of great interest.

The early experiments deal exclusively with less virulent germs, the staphylococcus group, especially the aureus. In 1895 Cobbett and Melsome did some interesting and valuable intraperitoneal experiments with streptococci.

Washburn in 1895 experimented with the pneumococcus. One of his important points is, that death may result from toxemia after intra-peritoneal injections and yet but slight signs of peritonitis be present.

Askanazy in 1897 experimented on the introduction of the contents of the intestinal canal, and Orlowski on the injections of colon bacilli, as has been noted.

A study of the work of these men is very interesting, but the conclusions of all can be thus briefly stated:

(1) Normally the peritoneum can dispose of bacteria in varying amounts, depending on the virulence of the organism without producing peritonitis, and the less the absorption from the peritoneal cavity the greater the danger of infection.

(2) Death may result from general septicemia and not peritonitis where large quantities of bacteria or bacteria of special virulence are taken up by the lymph channels.

(3) Irritant material or trauma which destroys or injures the peritoneal surface, even in limited area, prepares a place for lodgment of germs which may be the starting-point of peritonitis.

(4) Stagnation of degenerated fluid in dead spaces favors the growth of organisms, and the presence of infected blood-clots is specially liable to cause a virulent peritonitis.

(5) Injury to the abdominal viscera, as strangulation of an intestine, constriction and ligation of larger areas of tissue in the presence of pyogenic organisms, will almost certainly be followed by peritonitis.

It has therefore been proved beyond question that the normal peritoneum when unhampered by artificial conditions (as blood-clots, irritants and trauma) can safely dispose of certain amounts of pyogenic infection — but in *direct opposition* is the abnormal condition of the peritoneum in general septic peritonitis, or in severe local peritonitis.

In general peritonitis or severe inflammatory conditions of the peritoneum, the lymph channels of the diaphragm are completely choked by masses of bacteria, free, and enclosed in leucocytes; these, by their mechanical obstruction, and also by setting up inflammation in surrounding tissues, thoroughly prevent absorption.

Pawlowsky has showed that this obstructed condition of the lymph channels always occurs, and has illustrated it very beautifully in a series of plates. Just as in Muscatello's experiments the absorbing channels of the peritoneum were filled with carmine granules, so in Pawlowsky's they were choked with bacteria and *débris.*

This obstructed condition of these all-important absorbing channels occurs very early.

Clark, of Johns Hopkins, accepting the facts of absorption and disposal of small amounts of infection by the normal peritoneum, reasoned that slight infection occurring in the course of abdominal operations, such as contamination with pus, or blood, or septic fluids, would be taken care of by the absorptive channels of the peritoneum better than by intra-peritoneal drainage. He maintained that drainage was used far too often, and that the normal peritoneum could take care of moderate contamination, if given favorable conditions, without drainage.

The method advised by him for operations in which there had been septic contamination of a previously normal peritoneum, or where raw and oozing surfaces were to be left, was to wash out the abdominal cavity thoroughly with gallons of hot salt solution, leave in the peritoneal cavity 500 to 1,000 c. c. and close the abdominal wound without drainage, and place the patient for twenty-four hours in a position with the pelvis elevated. By this technique he washed out most of the infection, and by filling the abdomen with salt solution and elevating the foot of the bed, he followed the known facts of Muscatello's experiments, namely, that there are currents in the intra-peritoneal cavity carrying particles to the lymph spaces in the diaphragm, which currents are best favored by gravity. This method Clark called "postural drainage."

This method has been proven valuable, but I am convinced that it is often overdone. Clark's article has been misunderstood by many, and in so far as misunderstood has done great harm. Several men, here and elsewhere, have used his method in extensive local septic conditions and also in general septic peritonitis.

It is distinctly stated by Clark, and also by Finney, that this method must not be used in septic peritonitis, but that in such conditions free drainage is demanded.

I want to emphasize the point that in septic peritonitis there must be drainage. All experimental evidence proves that in a very few hours the absorbing channels of the diaphragm are clogged with *débris* and bacteria, — they have already taken to the glandular system as much infection as the individual can withstand, and their function will be only to slowly add to this by small amounts as the hours go on. They are no longer the open ways through which a small infection can be rushed into the glandular and blood systems and be rendered harmless.

The keynote of the treatment of general septic peritonitis must be the relief of the peritoneum and these obstructed lymph channels, and this can only be done by removal of the septic exudation and subsequent drainage.

And there can be no doubt that in many cases of localized peritonitis the integrity of the peritoneum is so damaged that it would not be safe to abandon drainage. The absorbing channels have become so clogged that any fresh infection during an operation on localized peritonitis could not reasonably be disposed of by them.

A statistical study of the operative treatment of peritonitis is almost worthless, because of the confusion in the reported cases between general and localized peritonitis, because of the lack of evidence in regard to the kind of general peritonitis found, and the absence of bacteriological reports. Early in the present decade some absurd percentages of recovery were published by numerous surgeons. Stuehlen reported seventy-eight cases with fifty recoveries, and surgical literature from 1890 to 1892 abounds in equally glowing statistics. These reports were false in that the operations were mainly done upon localized pus collections in the course of appendicitis. Such percentages of recovery are yet beyond all bounds of possibility.

There are infections so virulent and rapid that the profound toxemia, even at the outset of the disease, must always forbid operative interference.

Acute puerperal sepsis with peritonitis frequently presents a condition where the entire system has received a fatal amount of poison. Operation for the peritonitis will not remove the main source of infection, and the operation which includes removal of the uterus, tubes and ovaries can seldom be wise. There are cases of peritonitis of puerperal origin not so acute which offer favorable chance of recovery by operation. Such cases as von Winckel reports as successful operations for puerperal peritonitis are chronic cases, operated on weeks after the primary infection.

The treatment by injections of antistreptcoccus serum is as yet experimental and inconclusive, Wallick concluded that its use had not modified the mortality.

Peritonitis associated with acute septic inflammation of the gall bladder has been thus far uniformly fatal when operated upon. The infection is usually streptococci or colon bacilli, and is of extreme virulence.

Abbe has suggested that albumin in the urine of peritonitis cases is a contra indication to operation. There is no way of verifying this statement because of incomplete case reports, but it cannot always hold true, for one of my own successful cases had albumin before operation. The point is worth investigating however.

Cases of peritonitis occurring in the course of advanced renal and hepatic disease, the cases of "terminal peritonitis," cannot be thought operative.

Operations for typhoid perforation and for perforation of gastric or duodenal ulcers may be more accurately studied and the percentages of recovery reasonably estimated.

All the reported cases of operation for typhoid perforation were collected by Finney in 1897 — a total of forty-seven accepted by him. Since then I have found but one published case, that of Panton, which was successful.

The diagnosis of certain of Finney's cases has been called in question, but the series with one added case fairly represents the mortality of operation for this condition, namely, forty-eight cases, fourteen recoveries, a percentage of recovery of 29.2.

In 1895 I collected forty-four reported cases of operation for perforating gastric ulcer; of these ten recovered and thirty-four died. Since then, up to April 1st of this year I have found reports of ninety-eight additional cases with forty-nine recoveries and forty-nine deaths.

A total of one hundred and forty-two operations in which the percentage of recovery is 41.5.[1]

Cases operated on within twelve hours after perforation gave a percentage of recovery of seventy-eight.

It is gratifying to note the decreasing mortality of the operation since 1895.

I have been able to find only thirteen reported cases of operation for perforating duodenal ulcer of which three recovered.

But a statistical study of the vast numbers of operations for general peritonitis from all other causes can give only one or two valuable points.

The factors entering into each case are various and differ with every individual; the virulence of the infection and the resisting powers of the patient cannot be estimated by statistics. In most reports the kind of exudation found and its bacteriological cause is not given. In none is the condition of the kidneys mentioned.

It would be a waste of time to gather together a large mass of cases; even the reports of recent operations are incomplete.

In 1897 Körte reported seventy-one operations done since 1890. This collection of cases excludes chronic cancerous or tuberculous peritonitis, puerperal septicemia and peritonitis from injuries. Of these forty-six died and twenty-five recovered, or 35.2 per cent. In forty-one cases the exudation was ichorous or saniopurulent, of these thirty-one died and only ten recovered.

In twenty-two cases the exudation was sero-purulent, of these twelve died, ten recovered. In five cases it was fibrino-purulent, of which three died and two recovered.

Two cases were mixed forms, both recovered. One case showed fibrin formation and no pus or fluid, this case recovered.

That is to say, of the seventy-one cases the severe hemorrhagic form was found in forty-one, the sero-purulent or mixed and milder forms in thirty and the percentage of recoveries was greater in the milder forms.

Thirty-four cases originated from a perforated appendix — of these thirteen recovered and twenty-one died.

Six cases originated in gastric or duodenal perforation, two recovered and four died.

Six were cases of intestinal perforation from other causes, all died.

Four cases occurred after reduction of herniæ, all recovered.

Fourteen cases originated from the female reproductive organs, of these eleven died and three recovered.

One case was associated with an acute gall bladder, this died.

Six cases were of doubtful origin, two died and four recovered.

Körte's collection is the only recent large one and is the same in its teachings as any that can be made. It is unsatisfactory inasmuch as the only statement as to the bacteriology is that the cultures in most cases showed mixed growths, colon bacilli with pus cocci. It would have been instructive to have known the bacteriology of each case.

Statistical massing of cases can only be corroborative argument for what must be plain from a knowledge of the character of the disease.

The operation is dealing with a septic infection of varying virulence, which will cause death from toxemia, and will be more successful as undertaken early in the infection.

Operative methods must remove as much of the products of infection as possible; this can only be done by washing out and wiping out the peritoneal cavity. The fact that one or two cases have recovered without drainage is no reason for deciding against it.

Within five years opinions as to washing out and drainage have varied, but at the present time there is no uncertainty. Von Winckel, in his recent monograph on peritonitis, shows how those at one time denying the value of irrigation and drainage have been converted.

Finney in 1897 reported five consecutive successful cases, one in the course of a mild typhoid and four caused by perforating appendicitis. Cultures are reported in two cases; in one the infection was colon bacilli and a doubtful coccus, the other was colon bacilli and staphylococci.

McCosh in June, 1897, reported all his cases and with special care eight cases operated on in the year 1896. From 1888 to 1895 he had operated on forty-three cases with thirty-seven deaths, a mortality of eighty-six per cent.

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[1] For analysis of gastric and duodenal cases see a paper soon to be published.

Of the eight cases operated on in 1896 all but two seemed in desperate condition, but operation was considered the only possible chance for recovery. Of these eight cases, one died as the immediate result of the operation, one died five weeks later of lung complications and six recovered.

Bacteriological studies were made in four cases, in two streptococci were found, in two colon bacilli. Six cases were caused by gangrenous appendicitis, one by a septic uterus, and one by a perforating gastric ulcer.

The methods of operating adopted by Körte, Finney and McCosh are very little different and illustrate the best technique to be employed. All use very free incision, median or lateral, fully exposing the peritoneal cavity, and in some cases make an additional cut in the right or left flank for further exposure and drainage. All remove the intestines from the abdominal cavity if the patient is not absolutely moribund, keeping them warm with hot towels and hot salt solution irrigation and cleansing them and peritoneal cavity as thoroughly as possible by very free irrigation and by gentle wiping with gauze pads.

Finney pays special attention to wiping off the flakes of fibrin from the intestines and wiping out the abdominal cavity and especially the pelvis. McCosh does this, but lays stress on irrigation.

If the distention of the intestinal coils is too great to permit replacing them in the abdominal cavity, multiple aspiration or incision of them is done with subsequent suture. Salt solution at a temperature of 112° to 114° F. is the irrigating fluid used. All use drainage: Körte, gauze, or rubber tubes and gauze; McCosh, gauze or strips of silk; Finney, gauze; McCosh injects an ounce of Epsom salts into the ileum with a large aspirating needle, closing the puncture with a Lembert stitch before replacing. It is stated by all that few cases are so desperate as not to permit these extensive procedures and my own experience coincides with this view. These details of operation are proven wise by experiment and investigation.

The fibrin flakes on the peritoneum may contain bacteria. This was demonstrated by Calvert and Elting, and in two of my own cases I found streptococci and colon bacilli enclosed in the masses. Irrigation will not remove these masses, but gauze wiping will. In certain forms of peritonitis this fibrin clings so firmly to the bowel that considerable force must be used to remove it. These are apt to be fatal cases. Irrigation will carry off much of the exudation. Reichel has shown that the irrigating fluid will not return sterile, but it will return clear. Calvert and Elting's experiments proved that constant irrigation of the intestinal coils with hot salt solution will rapidly reduce congestion and distention.

The use of chemicals, such as peroxide of hydrogen and corrosive sublimate, which is advocated by certain surgeons, is shown plainly to be wrong by Thompson and by Walthard. From their experimental work it is certain that even weak solutions of corrosive can of themselves cause peritonitis, and that sterile water is often irritating, but normal salt solution is not.

During the past eighteen months I have operated on seven cases of general septic peritonitis, four cases died and three recovered. All were well marked cases, and four were in very bad condition when operated upon. I will report them very briefly:

Case I. Male, age twenty-two. Vague history of abdominal trouble for five days; stupid and dull; pulse 90; temperature normal; abdomen moderately distended. Probable diagnosis of general peritonitis with septicemia, origin doubtful, perhaps appendicitis. Long incision in right semilunar line; general purulent peritonitis found — appendix entirely sloughed off; no adhesions. The original incision enlarged up the edge of the liver; long additional incision made in left flank; thorough irrigation with hot salt solution; gauze and tubular drainage. Death on third day after operation; no bacteriological report obtained.

Case II. Male, age fourteen. Had been operated on six months before for appendicitis; appendix not removed. Has had pain and vomiting for three days. Admitted to Carney Hospital with pulse of 140 and temperature 103°; abdomen much distended and tender. Right lateral incision; general peritonitis; gangrenous appendix removed, no adhesions; fluid exudation thin, brown, and of fecal odor; fibrin flakes on intestines. Intestines withdrawn, irrigation and wiping with hot salt solution. Drainage gauze. Recovery.

Infection, colon bacilli and streptococci.

Case III. Female, age twenty-two. Sick for two days with abdominal pain, vomiting and chills; admitted to Carney Hospital in very poor condition; pulse 150; temperature 101°; abdomen distended; albumin in urine; long incision in median line; general peritonitis with much thin yellow fluid with fibrin flakes and with fibrin adherent to intestines. Suppurating mass consisting of right Fallopian tube and ovary with the appendix adherent removed. Intestinal coils not removed; thorough irrigation; gauze and tubular drainage. Death on second day.

Infection, pure streptococcus.

Case IV. Male, age twenty. Three attacks of appendicitis in four years. Had been treated expectantly for fourth attack which was of slight severity. Had apparently gone on well to convalescence, when suddenly was seized with intense pain and collapse; operation six hours after; pulse 140; temperature 104°; trace of albumin in the urine; abdomen moderately distended and tender. Incision in right lateral region; hemorrhagic peritonitis; no adhesions; gangrenous, perforated appendix removed; much thin brown fluid; intestines injected and showing minute ecchymosis and some coils with small fibrin flakes adherent. Intestines removed and cleaned; thorough irrigation. Gauze drainage. Recovery.

Infection, colon bacilli.

Case V. Male, age eleven. Very poor condition; greatly distended abdomen; mildly delirious; pulse 130; temperature 100°. Long right lateral incision; general sero-purulent peritonitis; gangrenous appendix removed. Intestinal coils removed and cleaned. Irrigation. Gauze and tube drainage. Death on third day.

Infection, colon bacilli and streptococci.

Case VI. Female, aged thirty-one. Had been waiting in one of the wards of St. Elizabeth's Hospital for an operation for a moderate sized pyosalpinx, which had caused no acute symptoms. Sudden pain, vomiting and shock coming on in the middle of night. At time of operation six hours later: pulse 140; temperature 104°; abdomen distended and tender. Long median incision; general hemorrhagic peritonitis; ruptured pyosalpinx removed; intestines not removed; prolonged irrigation. Gauze drainage. Death in thirty hours.

Infection, not determined.

Case VII. Male, age fifteen. Two attacks of appendicitis, last one six weeks previous; taken with pain, vomiting and collapse in middle of night; operation twelve hours after. Condition poor; pulse 140; temperature 103°. Long right lateral incision; appendix gangrenous, removed; general sero-purulent peritonitis; no adhesions. Intestines removed; free irrigation. Gauze drainage.

Recovery. Infection, not determined.

In nearly all of my cases I adopted the complete operation of McCosh. The chief points are adequate incisions, removal of the cause, withdrawal of the intestinal coils, constant irrigation, drainage free with gauze or rubber tubes and gauze. The regions of the pelvis, liver and spleen need special attention. This complete operation demands plenty of assistance and much care in preliminaries. Many operations for septic peritonitis are of little use; there is far too often haste in preparation and small thought for the essentials. Unless all the careful detail can be attended to by complete equipment and trained assistants the operation may do more harm than good.

In my experience this radical and thorough attempt at removal of the infection will be borne astonishingly well by the patient, provided the intestinal coils are kept warm and handled carefully and if every detail of operation and stimulation is provided. The use of subcutaneous salt solution during and after the operation, I have found of great value.

It will be impossible to state positively which cases will recover and which will die, as it is impossible to say what cases are positively beyond relief. There are limits of toxemia beyond which the surgeon cannot go. What those limits are, further collective experience must decide.

Surely more cases of general peritonitis are left to die unoperated upon, than there are cases operated upon whose chances of life are destroyed by the operation. I do not claim that operation in septic peritonitis is ever more than a forlorn hope, but I do maintain that the operative treatment of this distressing condition is not undertaken as often as it should be, and when undertaken is often done in a half-hearted, incomplete manner.

BIBLIOGRAPHY.

Allis. Annals of Surgery, vol. xxi, p. 179.
Askanazy. Virchow's Archiv, 1897, vol. cxlvi.
Burrage. Boston Medical and Surgical Journal, Jan. 20, 1898.
Barbacci. Centralblatt f. Chirurg., 1894, p. 78.
Clark. American Journal of Obstetrics, April and May, 1897.
Calvert and Elting. Johns Hopkins Bulletin, July, 1897.
Cobbett and Melsome. Journal of Pathology and Bacteriology, 1895, vol. iii.
Deaver. Annals of Surgery, January, 1898, p. 109.
Erlach. Wiener klin. Woch., 1898, No. 3.
Finney. Johns Hopkins Bulletin, July, 1897.
Finney. Annals of Surgery, March, 1897.
Flexner. Johns Hopkins Bulletin, April, 1895.
Halsted. Johns Hopkins Hospital Reports, 1891, vol. ii.
Hartmann. Le Semaine Méd., January 12, 1898.
Hartmann and Morax. Annales de Gynec., 1894, vol. xli.
Körte. Münch. med. Woch., April 27, 1897.
Körte. Archiv. für klin. Chir., vol. xliv, p. 612.
McCosh. Annals of Surgery, June, 1897.
McCosh. Ibid, vol. xxi, pp. 140 and 175.
Muscatello. Virchow's Archiv, 1895.
Park. Annals of Surgery, July, 1891.
Pawlowsky. Virchow's Archiv, 1889, vol. cxvii.
Orlowski. Centralbl. f. Bakteriol. u Infectionskr., 1897, No. 5.
Parvin. American Journal of Obstetrics, December, 1897.
Reichel. Verhandl. d. deut. Gesellsch. f. Chir., xxiv Cong., 1895.
Reichel. Deut. Zeitschr. f. Chir., 1890, vol. xxx.
Reichel. Deut. Zeitschr. f. Chir., 1893, vol. xxxv.
Robinson. Annals of Surgery, March, 1897.
Rosthorn. Prager med. Woch., 1894, No. 2.
Reymond. Annales de Gyn., July, 1895.
Runnels. American Journal of Obstetrics, 1894, vol. xxx.
Smith. American Journal of Obstetrics, January, 1898.
Tavel and Lanz. Centralbl. f. Chir., 1894, p. 75.
Treves. The Practitioner, June, 1894.
Treves. British Medical Journal, October 3, 1896.
Tuffier. Le Semaine Méd., January 26, 1898.
Thompson. Centralbl. f. Gynæk., January 31, 1894.
Senn. Journal of American Medical Association, September 4, 1897.
Walthard. Correspondenzbl. f. Schweiz. Ærtzte, 1893, No. 15.
Waterhouse. Virchow's Archiv, 1890, p. 342.
Welch. Transactions of American Physicians and Surgeons, vol. ii.
Washburn. Journal of Pathology and Bacteriology, 1895, vol. iii.
Wurtz. Annales de l'Institut. Pasteur, July 25, 1893.
Von Winckel. Sammlung klin. Vorträge, 1897, No. 201.

Clinical Department.

A CASE OF ACUTE GENERAL STREPTOCOCCUS INFECTION OF THE PERITONEUM FOLLOWING A FACIAL ERYSIPELAS; LAPAROTOMY AND EXTENSIVE WASHING OF THE ABDOMINAL CAVITY; RECOVERY.

BY MAURICE H. RICHARDSON, M.D.,
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THE time seems to have come when peritonitis must be classified and treated in accordance with the increased knowledge of this formidable affection which bacteriology has given us. Not that a recognition of the exact nature of the bacterial growth has as yet enabled us, even by operating promptly, to treat with a much diminished mortality general peritoneal infections — though we cannot but hope for greater success than we have thus far had — but it does enable us, at least, to foresee the probable severity of a given case, the rapidity of its course, the chances of its favorable termination.

That a bacteriological classification, based upon clinical evidence, will be possible sooner or later, seems probable. It seems well established, for example, that of the general peritoneal infections dependent upon appendicitis, those in which the colon bacillus predominates are attended by a comparatively low temperature; those caused by the streptococcus pyogenes by a high one; that a mixed infection may show a high or a low temperature, according to the predominance of one or the other of these germs; that the progress of a streptococcus infection is rapidly fatal, of a staphylococcus comparatively slow, of a colon bacillus sometimes rapid and fatal and sometimes mild and favorable. Moreover, the virulence of the controlling germ varies in different cases between wide limits of activity and of potency.

Certain rare cases of general peritoneal infection undoubtedly recover under medical treatment; but in such recoveries the impossibility of absolute demonstration always renders the existence of a true germ infection doubtful. Such an infection taken for granted, it seems likely that, in cases in which medical treatment is successful, the infection is mild and of slow development, though — as is shown by extensive adhesions between contiguous surfaces, demonstrated at subsequent operations or at autopsies — it is often widespread. In successful surgical cases, it can occasionally be proved that the infection is caused by the most prolific and baneful germs. As a rule, however, the milder the germ, the milder and more favorable the case.

Recovery under any method of treatment is rather a matter of hope than of expectation; for, with all the advance that has been made in the bacteriology of acute general peritonitis, a delay of a few hours after such an accident as perforation of the veriform appendix, places the patient beyond a reasonable hope of relief. It seems therefore reasonable to assert that any delay in applying surgical treatment to general peritoneal infections, whether for the purpose of giving opium to quiet peristalsis, or of giving salines to increase it, is unjustifiable; for when constitutional and abdominal signs point to a general and profound toxemia, the time for successful interference has passed. It is in the realization of the importance of time, indeed, that the chief progress in the treatment of acute general peritonitis has been made.

The general peritonitis of appendicitis is probably a mixed infection in which the streptococcus pyogenes plays the most actively fatal part. The colon bacillus, because of its great reproductive activity, may often be obtained in pure cultures, and for this reason its influence is probably overrated. The fact that in colon bacillus infections there have been a certain number of recoveries — a small number, to be sure — after drainage and irrigation, has always encouraged me to operate, even in cases of advanced general sepsis. Streptococcus infections, on the other hand, I had been led to regard as always fatal. The following case seems therefore worthy of being recorded. Not that all cases of general infection should not be published, for it is of the greatest importance that every accurate observation in general peritonitis should be made known; but a general infection in which the abdominal cavity was invaded to remote corners, and in which a prompt interference was made, is especially encouraging.

On October 22, 1896, I saw Miss E. J. A., age forty-two, a patient of Dr. Cook, of Natick. She had always been well, though she had had for some years a small uterine fibroid. During the past year she had been flowing a good deal. She had had some trouble with the left ear, following an attack of the mumps in the spring. On Friday, October 16th, about a week before I examined her, she was seen by Dr. Crockett, who sent her home because of an erysipelas involving the left ear. At this time the temperature was 100°. She began to menstruate soon after this. Dr. Cook saw her on Saturday, Sunday and Monday. There was no fever. By Monday the redness and swelling had practically disappeared. On Wednesday, the 21st, Dr. Cook was summoned because of severe abdominal pain. The temperature was 103.4°; the pulse 100. There was marked tenderness over the lower portion of the abdomen. There were nausea and vomiting. Morphine was given hypodermically. On Thursday, the 22d, the morning temperature was 102.8°, pulse 94; noon temperature 104.8°, pulse 105; evening temperature 104.8°, pulse 115. There was occasional vomiting. The menstrual flow still continued.

Physical examination showed the face to be flushed, the pulse 115, the temperature 104.8°. The general condition was good. The abdomen was distended and rigid; there was no dulness or tumor. Vaginal examination was negative, the fibroid being masked by the distention.

The diagnosis made was that of an acute general infection from the streptococcus of erysipelas. Immediate laparotomy was advised as affording the best chance for life, small though that seemed to be.

A median incision below the umbilicus exposed distended intestines floating in cloudy serum. The peritoneum was brightly injected. Here and there flakes of fibrin were visible between adherent coils. The uterus contained several small fibroids. The Fallopian tubes were normal, though the peritoneum of the uterus and broad ligament shared in the general redness. The appendix was normal.

Immediately on opening the peritoneal cavity a culture was made from the escaping serum. A second culture was made from the surface of the presenting intestine. Through the median cut, which was about five inches in length, the abdominal cavity was washed in all directions for about fifteen minutes with a warm saline solution. A gauze drain was left at the lower angle of the wound, from which it led into the depths of the pelvis.

The operation was performed at 6 P. M. At 12 P. M. the temperature was 102.8°, the pulse 101. On Friday, October 23d, the temperature at 6 A. M. was 102°, pulse 104; at 12, temperature 104°, pulse 104; at 6 P. M., temperature 103°, pulse 104. There was no vomiting. The patient was very restless, and was still flowing. On Saturday, October 24th, the temperature at 6 A. M. was 102.4°; at 11, 102.2°; at 5 P. M., 103°, pulse 96–100. From this time the patient was steadily convalescent. On November 2d, 10th, and 16th the temperature suddenly rose to 105°, and was thought by Dr. Cook to be malarial.

The source of the infection in this case was with little doubt the erysipelas; and though the germ may have been introduced into the abdominal cavity through the blood, the channel was in all probability the menstrual flow and the Fallopian tube.

Peritoneal infections without a cause apparent either at operation or at autopsy are extremely rare. I can recall but one or two in which no channel of infection was found. One case in particular was pronounced rheumatic by the pathologist, who failed to find any source of infection. That general infections do take place without the possibility of demonstrating the channel of invasion I have no doubt. The presence in the case described of a local inflammation about the ear, just before the peritoneal infection, must, however, be regarded as something more than a coincidence, especially in view of its erysipelatous (streptococcus) nature. Moreover, it is not surprising that there should be a germ invasion of the peritoneum through the Fallopian tube; indeed, it is surprising that infections should be so rare through an open channel connecting the uterine and the abdominal cavity, particularly when we consider the well-known septic character of the uterine and vaginal canal. The Fallopian tube, to be sure, is abundantly provided with ciliated epithelium which sweeps back the invading bacteria; but so are the bronchi, which at times have little efficacy in warding off pneumococcus and other infections.

Be the source, channel, and nature of the infection what they may, the importance of early recognition of its presence must be emphasized, until every case is brought to operation at the earliest possible moment. A few cases like that here recorded will do much to remove the feelings of profound discouragement with which most surgeons have undertaken the surgical treatment of general peritoneal infection. If it shall appear that an early exploration with prolonged and thorough irrigation of the whole abdominal cavity removes enough of the micro-organisms and their products to enable nature to take care of the rest, we shall then be justified in exposing the peritoneal cavity at the first suspicion of the infection, at the very onset of pain and tenderness.

The recoveries upon which are based the demand and the justification for early and radical measures must be after true infections, as shown by competent bacteriological examination. Turbidity of serum means nothing; for such a serum is quite as likely to be sterile as not. A number of acute abdominal cases have been successfully operated upon at the Massachusetts General Hospital as cases of acute general peritonitis; and although the gross appearances at the time of operation apparently confirmed the diagnosis, yet cultures taken from the turbid fluid proved to be sterile — a fact which immediately robbed the cases of their supposed importance. It is to be hoped, therefore, that no cases will be accepted as cases of acute general peritonitis without a competent bacteriological examination — not even cases in which the abdominal fluid possesses the usual appearances of pus. As a matter of fact, the only way in which the varying statistics of operations for general peritonitis can be even approximately reconciled is to assume that the majority of successful operations follow infections which are apparent rather than real.

Unfortunately, the evidence obtained from numerous observations made at operations and subsequently at the bedside seems to show that whatever the kind of infection of the peritoneum, however slight or severe its manifestation, and whatever its treatment, the result is still deplorable. Nevertheless, the outlook in view of the increasing number of recoveries in authentic cases after early recognition and operation is distinctly more hopeful.

The report of the pathologist is as follows:

Miss E. J. A.— *Culture from peritoneum.*— Cultures are made on blood serum and in 24° show a pale gray, slightly yellow growth along line of inoculation. Water of condensation slightly turpid, and shows considerable pale yellow deposit. Microscopic growth is found to be a small micrococcus arranged in chains averaging 15 elements in number.

Gelatine stab culture shows at end of 24°, at room temperature, abundant yellowish-gray growth along line of inoculation. Grows as well at bottom as at top of stab. Fine round yellowish colonies on either side of stab. Does not grow as readily on surface of gelatine. Non-liquefying.

Litmus milk shows in 48° considerable change in reaction, but no coagulation.

Potato in 48° in incubator shows no visible growth. In bouillon first culture showed after 48° in incubator a marked sediment with clear supernatent fluid. Sediment is in form of flocculi of considerable size. Later bouillon cultures, however, fail to give this flocculent appearance, but sediment is finely granular.

Agar plates show surface colonies to be pale gray with darker centres and irregular leaf-like contour.

On November 1st a suspension of the organism in bouillon was injected to the amount of 1½ c. c., into a guinea-pig. At end of two weeks animal apparently as healthy as ever. On sixteenth day, however, the pig was found dead in his cage. Autopsy showed microscopically nothing abnormal. Cultures made from spleen and heart's blood. In 48° culture from blood showed one pale lemon-yellow colony which, however, proved on investigation to be not a streptococcus, but the staphylococcus pyogenes citreus. This latter organism was undoubtedly a contamination. The pathogenesis of the organism, therefore, as far as guinea-pigs are concerned, is probably *nil.*

In conclusion: — We have to do here with a streptococcus differing from the ordinary variety in its character as a color producer. Similar organisms have been seen and described, but the exact status of the bacterium is yet to be made out— "*Streptococcus aureus.*"

A PUBLIC DINNER FOR PROFESSOR VIRCHOW. — It is proposed, the *Lancet* states, to entertain Professor Virchow on the occasion of his forthcoming visit to England at a public dinner. Lord Lister, we understand, will take the chair and may count upon the support of the leaders of the profession.

A REPORT OF TEN OPERATIONS FOR GENERAL PERITONITIS WITH TWO RECOVERIES.[1]

BY F. B. LUND, M.D.,
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In dealing with general peritonitis except in the very early stages the surgeon has to do with patients whose general vitality has been lowered by the absorption of toxins from a serous surface of immense extent and complication and enormous absorbing power. This serous cavity abounds in folds and pockets which increase its absorbing surface, and its inflammation is attended by the paralysis of the musculature of the intestinal canal, by stagnation and putrefaction of its contents, generation of gas, distention, fecal vomiting. The patient's vitality is so quickly reduced by so active and virulent a process in such close relation with the great splanchnic nerve centres, and the attendant paralysis of the digestive and absorbent centres, that whatever measures are taken must be so thorough and effective as to change, and that at once, the condition of the peritoneal cavity from that of an absorbent of toxins to drainer of poison from the system. Operative interference must be thorough enough to accomplish its object at one session, for repeated operation, or continuous meddlesome interference, will prove a fatal tax on the strength of the patient. For this reason a thorough cleansing and disinfection followed by provision for drainage adequate to start a current out of the peritoneum and its lymphatics, instead of into them, must be accomplished at one operation and if possible immediate action of the bowels must be induced to prevent if possible intestinal paralysis, and enable nutriment to be administered to the exhausted system.

If the peritoneum can be disinfected and all its pockets successfully and thoroughly drained, within a very few hours adhesions are found around the drainage tubes or wicks, and prevent further infection of the peritoneal pockets. The patient's condition in cases where this is successfully accomplished changes from one of septic intoxication to one of comparative comfort, and the exhausted system has opportunity to recover.

These facts, the necessity for procuring a condition of rest for the patient, and the securing of adhesions preventing reinfection of peritoneal pockets, seem to me to militate against the exhausting procedures involved in the plans of continuous or repeated irrigation of the peritoneal cavity which have been proposed and tried.

During the past ten months I have been called to operate upon ten cases of acute general septic peritonitis at the Boston City Hospital. Eight of the cases resulted from perforating appendicitis, and two were of tubal origin. These occurred in the services of Dr. W. P. Bolles and Dr. George H. Monks, by whose courtesy I report them. All were operated upon as soon as seen, and in all the condition when first seen was extremely grave. Only one case, not included in the cases reported, was seen which was not operated upon owing to the moribund condition of the patient. This patient died six hours after he was admitted.

In the presence of fatal prognosis without operation it has seemed imperative to disinfect and drain the peritoneum, wherever there was the slighest hope of the patient's withstanding the shock of the operation.

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[1] Read before the Boston Society for Medical Improvement, April 18, 1898. The paper as read was a report of seven cases with two recoveries, but the writer has added three cases operated upon since the date of the writing, two of which recovered.

Case I was operated upon November 13, 1897; a boy of seven years, whose first symptoms had begun about sixty hours before with pain, continual vomiting, and prostration. On entrance there was general abdominal tenderness without marked distention. No tumor in region of appendix. Short incision over appendix, which was found perforated. No adhesions whatever about appendix. Pus free among intestines and in pelvis, a few delicate flakes of lymph on lower portion of ileum. Redness and loss of lustre of entire small intestine. The incision was extended to five inches. The lower half of ileum was removed from the abdomen, and washed and sponged free of lymph, the abdomen washed out with several quarts of hot salt solution, and wiped dry. The pelvis was drained by a glass tube and the subhepatic space and left lumbar region by gauze wicks. Time of operation thirty minutes. No vomiting followed the operation, the tube was removed the second day, on which day calomel in one-tenth-of-a-grain doses followed by a high enema produced free movement of bowels. No vomiting after operation. Discharged well on December 15th. Cultures from peritoneal cavity showed free growth of bacillus coli communis.

Case II. M. M., a girl of twelve years, operated upon January 27, 1898. Pain for three days before entrance and vomiting for two days. Diarrhea since a cathartic was given at onset of trouble. For past twelve hours delirium. Has vomited but once. On entrance mental dulness and delirium. Abdomen generally tender and rigid, but especially in epigastric and right iliac region. No tumor felt anywhere. Pulse 140, fairly good strength, eyes bright and glassy, abdominal pains marked.

Incision over appendix showed general peritonitis with pus throughout abdomen and flakes of fibrin, covering the entire small and large intestine. The incision was extended in the semilunar line to six inches. Evisceration, removal of fibrin, which was only lightly adherent, by sponging and washing, irrigation of entire cavity with salt solution. Pelvis drained by glass tube and gauze, but abdomen left full of salt solution. Suture of upper part of wound. But slight shock from operation, which lasted thirty-five minutes.

The following day marked improvement ensued, the patient was conscious, and her general appearance was much better, pulse 100 and of good strength. No vomiting. Efforts to move the bowels by Epsom salts by mouth and high enemata were unsuccessful during this day and the following, and the patient steadily grew worse and died the morning of the fourth day after operation.

Case III. J. J. McQ., a boy of twelve years, operated on March 2, 1898. Had had pain in right iliac fossa and constipation for four days, but bowels had moved after an enema twenty-four hours before. Vomiting more or less continuous for four days. On entrance, pulse 104, abdominal facies. Abdomen generally tender but especially so in right iliac fossa, where a tumor is to be felt. Universal rigidity of abdominal muscles, slight distention. Incision five inches long in right semilunar line; immediate escape of thick pus from abdominal cavity, perforated appendix removed.

The ileum, which was covered with fibrin flakes, was removed from the abdomen, and the flakes as far as possible sponged off. The upper part of the small intestine appeared healthy, the abdominal cavity was thoroughly irrigated with salt solution, a considerable amount of pus was washed out of the subhepatic space and the pelvis. One ounce of a saturated solution of Epsom salts was injected through a hollow needle into the ileum, and the puncture closed by a fine silk suture. The pelvis was drained by a glass tube and gauze in the lower angle of the incision, the subhepatic space by a rubber tube and gauze, and the left lumbar region by a gauze wick. The abdomen was left full of salt solution. Time of operation, thirty-five minutes, no vomiting followed the operation, and on the following morning there was a free movement of the bowels followed during the day by several other movements and the passage of much gas. The patient's condition from the day of operation was extremely comfortable, his convalescence being only interrupted by an accumulation of pus in the pelvis, which resulted perhaps from a too early removal of the drainage. This was evacuated by dilating the lower end of the wound by the finger; convalescence has since been uneventful, the boy is well and fat, and left the hospital early in April.

Case IV. On March 2d, the same day as the previous case, laparotomy was performed upon W. H. G., a boy of twelve who had had general abdominal pain for four days, and vomiting for three, together with absolute constipation. On admission he was found to have general abdominal tenderness, distention and tympany, pulse 140 and weak, temperature 102°. Abdominal pains, immediate operation by median incision below umbilicus, which was extended upward a distance of six inches. Escape of large amounts of very offensive pus from abdominal cavity, which was converted into a series of pus pockets separated by adhesions. Entire small and large intestine covered with very adherent flakes of fibrin. Numerous ecchymotic spots along free border of small intestine. Appendix gangrenous, and sloughed off, feces escaping from stump into abdomen. It was ligatured and removed. Evisceration was performed, but efforts to remove fibrin by sponging were only partially successful, owing to adhesion. Thorough irrigation of abdomen with salt solution. Operation, which lasted forty minutes, owing perhaps to too vigorous and prolonged efforts to remove adherent fibrin, was attended by marked shock, and the final steps had to be taken very hurriedly. An ounce of saturated solution of Epsom salts was injected into the bowel, the pelvis drained by a glass tube and gauze, and the subhepatic space by rubber tubes and gauze. Salt solution left in abdominal cavity, free stimulation with brandy, strychnia and digitalis and the subcutaneous injection of salt solution, one and one-half pints, seemed to strengthen the pulse somewhat, but the improvement was not maintained, and the patient died of shock five hours after the operation.

Case V. March 13, 1898. E. M. W., a girl of nine years, was operated upon. Four days before she was seized with abdominal pain. Vomiting for three days, with distention of abdomen. Bowels moved on second day of attack by cathartics. On entrance the pulse was 130 and weak. Temperature 99.5°. General abdominal distention, tympanites and tenderness. An incision four inches long in right semilunar line. Pus escaped from general cavity. No adhesions. Appendix was found perforated, and removed. Intestines covered with fibrin and presented ecchymotic spots. Evisceration, removal of fibrin by sponging. Irrigation of abdominal cavity, which contained numerous pus pockets, with salt solution. Injection of two ounces of saturated solution of Epsom salts into intestine. The cecum which was much distended was incised, and a rubber tube tied in and brought out of upper end of wound. A glass tube drained the pelvis, and gauze wicks the general cavity. The operation was attended with shock, but the patient rallied under free stimulation and rested quietly for six hours. She then woke suddenly, and pulled out the rubber tube before the nurse could restrain her. After that she failed rapidly and died about twenty hours after the operation.

Case VI. A. W., female, five years old. Operation March 25, 1898. Sudden severe general abdominal pain five days ago. Vomiting for four days. On entrance, general tenderness and rigidity of abdomen. Pulse 150. Temperature 102°. Abdominal pains. Median incision six inches long. Intestines distended and congested, showing ecchymotic spots. Appendix gangrenous, distended to the size of an adult thumb, lying beneath the liver. Large amount of pus beneath liver, in pelvis and general abdominal cavity. Appendix removed. Evisceration, sponging of fibrin from intestine. The intestines had to be punctured in three places to allow escape of gas so that they could be returned to abdomen. Thorough irrigation with salt solution and injection of one ounce saturated solution of Epsom salts into bowel. Drainage of pelvis and subhepatic space with tubes and gauze.

Considerable shock ensued but patient rallied under free stimulation. The following day vomiting began and persisted; pulse grew rapid and weak and death ensued twenty-four hours after operation.

Case VII. D. H., female, thirty-two years of age. Two days before operation sudden sharp general abdominal pain and distention. On examination, temperature 100°, pulse 101, of fairly good strength. Abdomen tender but not rigid. Tenderness slightly greater on right. During four hours pulse rose to 128 and temperature to 103°. Incision in right semilunar line allowed escape of pus from abdomen. Appendix found congested and adherent to right ovary, which was soft and friable. Right tube congested. Several ounces of pus in pelvis. Small intestine universally congested, and its lower portion covered with flakes of fibrin. Partial removal of small intestine from abdomen, removal of fibrin by sponging, and thorough irrigation of abdomen after excision of right tube and ovary. Drainage of pelvis with tube and gauze.

Operation was fairly well borne, but vomiting began on coming out of ether and continued until death ensued, sixty hours after operation.

Case VIII. H. G. P., age twenty-two, single, entered the Boston City Hospital on May 18, 1897. Three days ago, during menstruation, was seized with sudden severe abdominal pain. No vomiting. Two days ago distention began to appear. Pain and tenderness not localized.

Examination showed general abdominal tenderness and marked distention. Temperature 101°. Pulse 132 and weak. Abdominal facies. Operation was advised and immediately performed.

A median incision below the pubes allowed escape of a little sero-purulent fluid. The small intestine was generally injected, and the coils in the lower abdomen were covered with delicate flakes of fibrin. Both tubes and ovaries were acutely inflamed and the pelvis contained a moderate amount of pus, which was not walled off by adhesions. The pelvis was sponged out with peroxide, and the lower abdomen thoroughly washed out with salt solution, the patient being lowered to the horizontal position.

The pelvis was thoroughly packed with sterile gauze, seven wicks being used, and the lower part of the incision being left wide open, the upper portion was closed with silkworm-gut sutures. Considerable shock followed the operation but the patient rallied. The bowels moved under small doses of calomel on the second day. On the fourth day the wicks were removed under chloroform anesthesia.

Recovery uneventful. Discharged well on June 18th. A culture was taken by a swab from this case, but no growth resulted.

The swab was, however, taken hurriedly, touched merely to the upper surface of the omentum in the upper part of the wound, so that I do not think it is evidence that no organisms were present in the pelvis, which was certainly the seat of an acute inflammation, with pus and fibrin, extending up into the general cavity and not walled off by adhesions.

Case IX. G. F. R., age thirteen, mulatto, entered May 27, 1898. Sudden severe abdominal pain one week ago, with diarrhea. Some improvement, followed by relapse the day before entrance, attended with abdominal distention and constipation. Rapid prostration.

Examination: Tongue coated. Abdomen generally distended and very tender. Respiration rapid and shallow. Pulse so weak that it cannot be felt at wrist, 180 to 200. Extremities cold, and body covered with perspiration. Although the patient seemed moribund it was thought best not to deprive him of any possible chance which might be held out by draining the abdomen. His condition contraindicating ether, the usual oblique incision three to four inches in length was made in the right inguinal region under cocaine, one-tenth per cent. An enormous quantity of thin purulent fluid escaped, and more was washed out by thorough irrigation with hot salt solution. Glass tubes were inserted into pelvis and subhepatic space. The patient's condition precluded any further measures than washing of the abdomen, and was apparently made no worse by the operation. After it he rallied slightly under active stimulation but soon sank and died about eighteen hours after entrance.

Case X. N. W., domestic, age twenty-two, single, entered the hospital on August 31, 1898; she had been treated on the medical side at the same institution for pleurisy in October, 1897. She had a slight cough at entrance but otherwise her general health was good. Twenty-four hours before entrance she had been seized with sharp pain in the right iliac fossa, attended by vomiting and prostration. On examination she was seen to be well nourished, fair complexion with clear transparent skin, temperature 104°, pulse 130. Marked tenderness and muscular spasm on pressure in right iliac region. Tenderness over pubis and slight in left iliac region. Lips bluish in color, tongue dry with a thin, white coat.

Immediate operation, by incision in the right iliac fossa, disclosed pus free in the abdominal cavity. No adhesions. The appendix was found perforated at the base, and was removed. Numerous small, hard tubercles were found on the pelvic walls, broad ligament and mesentery of the small intestine. The whole abdominal cavity was washed out with salt solution, a large amount of pus escaping from the pelvis and from the right hepatic region. Drainage of subhepatic space by gauze strip, and of pelvis by gauze and glass tube.

The pulse and temperature fell rapidly, reaching the normal line on the third day. There was no vomiting after the operation, and the patient is now, one week after the operation, considered out of danger.

The culture of the pus examined by Dr. R. M. Pierce showed numerous micro-organisms, the streptococcus and bacillus coli communis being prominent.

The case is of interest both on account of the virulence of the micro-organisms present, in particular the streptococcus, and on account of the supervention of an acute attack of appendicitis, with general infection of the peritoneal cavity, upon a previous, but not far advanced, tubercular peritonitis.

The operation of evisceration, sponging the bowels free of fibrin, thorough irrigation and sponging when necessary of the abdominal cavity, which must often be supplemented by incision of the intestines in order to allow escape of feces and flatus in order to permit their return, sounds like a formidable one, especially for patients weakened by a general peritonitis. Yet when we are confronted by the fact that without a thorough primary disinfection and drainage we cannot hope for recovery, it seems worth while to perform it even at the risk of shock. With moderate practice, the operation can be done in thirty minutes or a little more. The one step of the operation which is attended with most shock seems to be the attempts to remove adherent fibrin from the bowel. When the fibrin is firmly adherent it seems best, in the light of present experience, not to make too prolonged attempts to remove it. In one of these seven cases that died directly of shock within five hours of the operation the operation was I think unduly prolonged by attempts to sponge fibrin from the bowels. When it is only lightly adherent, it may be easily and quickly removed. Where there is purulent or sero-purulent fluid in the abdominal cavity, but no fibrin adherent to the intestines, it is not necessary to eviscerate.

The other fatal cases lived respectively, twenty, twenty-four and sixty hours, four days and eighteen hours.

In Case II, the girl who died four days after the operation, marked improvement immediately followed the operation. Death ensued upon paralysis of the bowel, and I shall always regret that a saturated solution of Epsom salts was not injected into the intestine.

This procedure, introduced by McCosh, of injection of saturated solution of Epsom salts into the bowel, was tried in four cases, and one recovered. The convalescence of this boy was most excellent, and seemed to me to be favorably influenced by the early movement of the bowels which ensued.

A brief consideration emphasizes the necessity of early recognition of the cases. Case I, which recovered, had general peritonitis for forty-eight hours after the first attack of pain. Three of the four cases which recovered presented in some respects the least advanced picture of the disease, the fourth was certainly an advanced case. Several of the fatal cases showed most severe extensive and intractable processes four and five days after the first attack of pain. The fact that seven out of these ten cases occurred in children is of interest. It is possible that the early diagnosis of general peritonitis is made less often in children than in adults.

In these cases, and other operations for general peritonitis which have come under the writer's observation, those in which ecchymotic spots were noted on the intestine, the hemorrhagic cases, have been uniformly fatal. An occasional success in this otherwise uniformly fatal disease is sufficient indication for operation in all except absolutely moribund cases.

The complication of a fresh acute general peritonitis, in which the streptococcus was found, with an old tubercular peritonitis in Case X is of interest.

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A CASE OF GENERAL PERITONITIS; OPERATION, RECOVERY.

BY WILLIAM T. SMITH, M.D., HANOVER, N. H.

Cases of recovery after operation for perforating appendicitis when general peritonitis has already set in are well attested. But they are rare. My own experience with such cases has been so discouraging that when the symptoms of general peritonitis are distinct I have come to expect a fatal result, though I always advise operation to give the patient what chance there may be. I have had recently such a case in a farmhouse in which the patient recovered and I wish to record it.

A farmer, forty-five years of age, in good health and with no history of previous attacks was taken with appendicitis on Wednesday afternoon. After a night of severe pain he sent for the doctor Thursday morning. The usual symptoms existed, pain, at first diffused, later locating itself at McBurney's point; temperature 99° to 100°; pulse 80 to 90 and obstinate constipation. No vomiting. No tympanites on Thursday. Thursday night pain was intense. Friday morning when I was called it had ceased. The belly was tense and tympanitic up to the ensiform cartilage. Temperature 101°. Pulse 134 to 144. Countenance drawn and anxious. I advised immediate operation but gave no encouragement to the friends. On opening the abdomen a sero-purulent fluid oozed out. I found the appendix curled up and adherent at the margin of the pelvis. The adhesions were recent and I separated them freely as there was no indication of any walling in of the locality, and removed a swollen and angry appendix; its lumen obstructed near the base by concretions and an ugly gangrenous perforation beyond. Puncturing the colon in two places to let out the gas, I drew out several feet of small intestine which was inflamed and had many patches of membranous exudate on it. With a one-half of one-per-cent solution of formalin I washed the gut and rubbed off the patches of exudate with a sponge. The gut was then returned, the puncture in the colon being closed by fine silk through the serous coat. Lacking a proper irrigator the blind end of an eight-inch test-tube was broken off and the other end inserted in the abdomen and through this tube irrigation was done with a one-half of one-per-cent solution of formalin. An iodoform gauze wick was carried down to the stump of appendix. A single stitch of silkworm-gut through the whole thickness of the abdominal wall drew together the upper portion of the three-inch wound.

By the third day after operation the temperature was nearly normal; the pulse 80 to 90; the bowels had moved freely. The patient recovered.

Reports of Societies.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

The Twentieth Annual Congress held in Brooklyn, N. Y., in the Hall of the Long Island Historical Society.

FIRST DAY, MAY 16, 1898.

The President, **Dr. Thomas French**, of Brooklyn, made the opening address, welcoming the members in the name of Brooklyn and of the medical profession, and congratulating them on the fact that, with the advance of years, there had been an advance in knowledge. The Association had never been more successful and active than at the present time.

As the result of the work of Pasteur, Lister and Koch a new pathology has been created. The foundation of medical education is, to-day, normal histology and pathology. The search-light of biology and bacteriology is only beginning to reveal the fields for study, which, doubtless, contain many truths which the future will disclose. Our dependence on the microscope in diagnosticating disease is growing with each year, but a proper conservatism in regard to its findings must be observed, for the useless loss of important structures from the not infrequent simulation of elements of inflammation tissue for those of conditions requiring thorough eradication.

As Dr. Delavan has given the history of the Association I will confine myself to specialism and the progress of laryngology and rhinology during the past twenty years.

Three classes of workers are needed in scientific work; the first is the original investigator, who seeks for truth for its own sake; the second the teacher who diffuses the knowledge acquired by the original investigator; the third is he who applies knowledge to its practical uses. Tyndall, in an address delivered in New York twenty-five years ago, said that in no other country would science in its highest forms exert a more benign influence than in ours. At that time those who confined themselves to work in one line were few; now their number is legion and the tendency towards a special field for practice is growing stronger each year. In no department of medicine have the workers increased so rapidly as in ours. Years of practice, together with natural aptitude, are absolutely necessary in order to acquire skill in the surgical treatment of diseases of the larynx, but much less practice is required to permit of intranasal surgical work, and this fact is unquestionably accountable for the large amount of indifferent or mischievous surgery which is yearly growing more noticeable. The advice of Sir Morell Mackenzie that a man should practise medicine and surgery during the first ten years of his career is of greater value to-day than ever before. It is wise to remind a student of the advice given by Dr. William Osler: "As a man values his future life, let him not get early entangled in specialism." To a certain extent it is true that many workers in various departments of medicine are becoming too narrow in their studies, devoting themselves to the acquisition of a limited field at the expense of general medical and surgical information. The charge is also made that specialism is doing great harm because of the charlatans who live and thrive under its influence, yet it is a fact that there are fewer of them to-day than ever before; this condition is due not to specialism, but to the weakness and selfishness of mankind.

Despite the evils that are growing out of specialism the fact that men are centring their thoughts on special lines of work more than ever will result in the largest amount of good to mankind, for we are beginning to realize that concentration is the price we must pay for efficiency. It behooves us to think well on these things and to secure to specialism the minimum of harm and the maximum of good.

Without the discovery of cocaine by Köller the vast strides made in the treatment of diseases of the nasal passages and of the naso-pharynx would not have been possible. Antitoxin, serum-therapy and organo-therapy have played their part in aiding in the advance in this line of work. To a large extent Dr. Dwyer has driven tracheotomy from the field, and to Dr. Hooper must be given the credit of having awakened interest in lymphoid growths of the pharyngeal wall. While the methods of treatment of laryngeal tuberculosis give better results than formerly, we cannot look for signal success in dealing with this disease until the nature of tuberculosis is better understood.

The noteworthy work of our Corresponding Fellow, Sir Felix Semon, and of Prof. B. Frænkel brings encouragement. Dr. Semon in 1894 reported 58 instances of cures of selected cases in private practice after removing diseased parts through an opening made by cutting the thyroid glands.

Our Corresponding Fellow, Dr. John Mackintyre, has succeeded in obtaining, by the use of the x-ray, an image of the septum, the roots of the teeth and other hard structures in the neighborhood. He has also demonstrated the process of ossification in the thyroid cartilage. The shadows of the larynx, however, are not as sharply defined as the photographs of hard bone or foreign bodies. What Lister has done for us by antisepsis, both local and general, has banished the fear of the knife.

As we are ever striving for the truth, and have only one fear — to believe an untruth — free and friendly discussion is invited as the discipline entailed by the practice suspending judgment is one of the means of converting the actual into the ideal. If epitomes of papers to be read could be sent to members of the Association two weeks before the meeting discussion would be of a more fruitful character. The Association wants young, vigorous spirit and particularly men who are interested in and in touch with the advance knowledge of biology, bacteriology and physiology.

At the nineteen meetings of the Association 56 per cent. of the total membership have been present. Since Dr. Elsberg presided, 411 papers have been preserved in the archives of the Association.

Dr. J. N. Mackenzie, of Baltimore, next read a paper on the

LARYNGO-TRACHEAL NEOPLASMS OF TUBERCULOSIS.

Neoplasms of the larynx and trachea may be divided into three groups. The first variety may be termed granular hyperplasia (ordinary granuloma). Anatomically this variety is allied to granulation tissue and may be regarded as a conservative effort to promote cicatrization. A section of the tubercular ulcer shows a more or less clearly defined hyperplastic granulation which is the effort on the part of nature to isolate the tubercular process from the healthy tissue.

The second variety may be termed papillomata; it is more rare than the preceding and may be found in any part of the larynx, but more especially on the posterior wall. Its gross appearance offers nothing by which to differentiate it from simple papillomata, and the microscope reveals nothing of a tuberculous nature. Stürk long ago insisted that these growths are the earliest signs of tuberculosis, and since his time they have often been found to be the precursors of lung trouble. As the essential nature of these growths is as yet undetermined it may not be amiss to relate the case of a man having tuberculosis of the lungs with consolidation at the right apex. The posterior part of the larynx was filled with a mass resembling pieces of coral. There was a growth on the right vocal cord which extended under the cord and on phonation passed beneath the cord on the opposite side. Microscopical examination showed papillomatous nodules cut across and epithelium partly necrotic; also dense round cells with a few giant cells. In the submucous layers the normal tissue was replaced by new tissue. This case fairly represents a type of laryngeal neoplasm found in tuberculosis.

The third variety is the true tubercular tumor which is found in the windpipe. By tubercular tumor is meant an isolated, well-defined growth occurring independently of ulceration or tubercular infiltration and covered by normal mucous membrane, with little or no tendency to ulcerate. These tumors are of great rarity; my experience has yielded but three cases. The first was a tubercular tumor of the trachea, surrounded by apparently normal mucous membrane. Microscopical examination showed the presence of tubercular bacilli. The patient died of cancer of the stomach, and the autopsy revealed tubercular lungs. The second case was one of tubercular growth with vestigium laryngis, such as had never before come under my observation. The nodules in the deeper parts were more advanced in caseation and the lungs contained tubercular cavities. These cases should be clearly differentiated from ordinary infiltration because of their gross appearance and because tubercular tissue is found in the deeper portions of the growths, while in ordinary infiltration the tubercular tissue is found under the epithelium. These growths are probably due to secondary deposits from the lungs or to metastasis. They have little tendency to ulcerate; if ulceration does occur it is usually at a late stage. The microscope alone can give us a correct diagnosis. The color, situation, presence of tuberculosis in the body, etc., are of some value.

In regard to operation in these cases, it is well to bear in mind that it is not advisable to use the knife promiscuously. As the growth usually pursues a slow course, and shows little tendency to ulcerate, it is better to refrain from interference unless serious impairment of function is threatened. In the last stages of tuberculosis it would be worse than useless to operate, as in breaking the continuity of the surface we run the risk of auto-infection. If the growth is a small one it should be taken out through the mouth; if it occupies a large extent of surface, thyrotomy should be performed. In the after treatment, lactic acid and the galvano-cautery are useful. In case the joint is involved and the entire larynx, also, the question of extirpation comes up. It is suggested that this procedure is advisable where the lungs are not much involved.

Dr. Rice, of New York, related the history of a case in which the characteristic granulation tissue was found between the arytenoid cartilages. A few weeks ago the growth was slightly broken down and superficial ulceration existed. The growth nearly filled the larynx, touching both vocal cords, and was grayish in color. It was removed by forceps. Iodide of potassium was given, though there was no history of syphilis. In using the galvano-cautery with a slow red heat there had been no inflammatory reaction and the results had been entirely satisfactory.

Dr. H. L. Swain, of New Haven, cited the case of a woman having a large inter-arytenoid growth. The patient was tubercular. The microscope gave evidences of papillary hypertrophy. The appearance was that of papilloma. After remaining at Saranac for a year she returned home, but later developed tuberculosis of the wrist-joint.

Dr. W. F. Chappell, of New York, read a paper entitled

LARYNGEAL TUBERCULOSIS AT THE LOOMIS SANATORIUM.

This sanatorium, situated at Liberty, N. Y., is 23,000 feet above the sea level and the surrounding country is hilly and undulating. The temperature varies from 0° in the winter to from 70° to 80° in the summer. The prevailing winds are northwest and southwest and there is but little humidity in the air. The institution is conducted on the cottage plan.

The local treatment of tubercular laryngitis consists in applications of lactic acid, creosote, ichthyol, nitrate of silver, etc.

Clothing, exercise and food play an important rôle in systemic treatment. Hypodermic injections of horse serum are used and the effect on temperature and cough is far in advance of any other agent yet used. The history of the cases briefly mentioned shows improved command of voice and greater clearness, lessening of pain, better general condition, increase in weight and absence of bacilli.

Dr. Emil Mayer, of New York, thought that patients should be kept in sanatoria and under the care of a physician for a longer time than they usually desired. He strongly advocated the cottage plan.

Dr. W. K. Simpson demonstrated

THE USE OF THE BERNAY SPONGE IN THE NOSE AND NASOPHARYNX, WITH SPECIAL REFERENCE TO ITS USE AS A HEMOSTATIC.

The Bernay sponge consists of cotton fibre which has been subjected to many hundred pounds' pressure and compressed to a disc of one-sixtieth of an inch in thickness. By the absorption of liquids it will attain fifteen times its size and twelve times its weight. This great absorbing power makes it useful both as a cleansing agent and afterwards to pack the wound. It is more efficient than cotton or gauze for tamponing the anterior and posterior nares as it does not require replacing. The slow absorbing power of cotton or gauze is no guarantee against hemorrhage. In case of epistaxis the sponge should be cut in semicircular shape and introduced into the nostrils with the convexity upwards. This sponge makes an excellent splint in the later stages of an Asch's operation for deflected septum. It is useful in fracture; covered with gutta percha and introduced into the nares it prevents the formation of adhesions after operations. Its power of absorbing discharges makes it a useful intranasal dressing. It is excellent for conveying medicament to different portions of the nasal passages. Like all nasal tampons hemorrhage may be established on its removal, but this accident may be obviated by previously applying some antiseptic ointment to the sponge. The Bernay sponge is prepared by Seabury & Johnson, it is placed in antiseptic boxes and hermetically sealed.

Dr. J. W. Gleitsmann, of New York, exhibited

KIRSTEIN'S AUTOSCOPE.

This instrument is for use where we fail to see the posterior wall of the larynx with laryngeal mirror. It should be used whenever we are sure that the whole larynx cannot be seen without it. It has been observed at the German Dispensary that patients on whom the autoscope had been used did not return. This may have been due to lack of dexterity in using it. In Kirstein's clinic it could not be used satisfactorily without anesthetizing the patient, as it could not be left *in situ* long enough to obtain a good view of the larynx.

Dr. Wagner, of San Francisco, has found the instrument useful in children having papillomata. He had used it in two cases of lupus where he could not see without it. Both in general and in private practice he had observed that patients were not pleased with the instrument.

Dr. Beverly Robinson, of New York, read a paper on the

ENLARGEMENT OF THE LINGUAL TONSIL AS THE CAUSE OF COUGH.

For many years the fact that enlargement of the lingual tonsil may cause cough has been known, but the condition was but poorly understood by the general practitioner. The trouble is liable to occur in persons of a sluggish or lymphatic temperament. The beginning of this condition is insidious, especially in young adults. If the cough lasts but a short time the general practitioner usually ascribes it to the stomach or some reflex cause. Possibly he may think of laryngeal inflammation. The laryngeal mirror may reveal an enlarged tonsil, but the process of examination is sometimes impossible and often difficult. In children of from two to three years of age, a laryngeal cough without reasonable cause is usually due to pressure on an enlarged tonsil. In small children an irritative cough may be only the initial stage of whooping-cough.

The predisposing causes are impaired condition of the general health or the continuance of a catarrhal relaxation. The trouble may also be due to anemia, constipation, and habitually irregular habits as regards food and rest. In small children overfeeding and indulgence in cake may be responsible for congestion of the lingual tonsil. Rheumatic dyscrasiæ in adults is frequently a causative factor.

An irritative cough is often the only symptom of acute congestion of the lingual tonsil; there is little to be found on inspection. At first there is some expectoration, later, muco-pus, and still later, blood, which comes from inflammation of the lingual tonsil. All the symptoms are worse at night. The fossa are sometimes completely filled by the swollen gland, which overlaps the border of the glottis.

Gout, rheumatism and any underlying dyscrasiæ should be treated if present. External medication and cough mixtures afford little relief. The compound tincture of iodine applied every day with an equal amount of glycerine and water may reduce the size of the tonsil. Change of air is an essential element in the treatment. If there is marked renal deficiency spirits of minderiris are useful. If a malarial element is present Warburg's cachets should be administered. In treating hypertrophy of the tonsil use, first, the electro-cautery; second, the snare; third, ablation by means of the tonsilotome.

Dr. James E. Newcomb recommended the use of boro-glyceride locally and oxalate of cerium internally, the latter drug being administered so that one drachm is given in twenty-four hours.

Dr. Clarence C. Rice, of New York, does not consider this enlargement so important in children. Physicians often overlook acute attacks of inflammation, putting them down as glossitis. Children do not have localized attacks of inflammation of the lingual tonsil which are not secondary to neighboring inflammations.

Dr. H. L. Swain, of New Haven, said that at birth there is no adenoid tissue to be observed at the base of the tongue. After zymotic diseases in children there results a congestion and enlargement of the adenoid tissue at the vault of the pharynx and accompanying this there is an enlargement of the lingual tonsil. In cases examined at autopsy there was no such tissue found at the base of the tongue up to the age of puberty.

Dr. John O. Roe, of Rochester, stated that the lingual tonsil is composed of the same kind of structure as the faucial and pharyngeal, and when there is enlargement of the one there is usually the same trouble with the other. A tonsilotome which he has constructed on something the same plan as that of Dr. Mackenzie works admirable on adults.

Dr. J. W. Gleitsmann related the case of a woman who had an obstinate cough. Temporary relief followed the removal of her tonsil. Later the cough returned and examination revealed a small hidden growth, the removal of which cured her entirely.

Dr. John O. Roe read the

REPORT OF A CASE OF FRACTURE AND DEPRESSION OF THE ANTERIOR WALL OF THE MAXILLARY ANTRUM, WITH RESTORATION OF THE DEPRESSED WALL.

This case, aged thirty-five years, received a blow which broke in the anterior wall of the antrum. The face presented a one-sided appearance on account of the cavity situated in the cheek. In operating the upper lip was raised, the dissection being carried high up; by keeping close to the bone there was but little hemorrhage. A hole was drilled into the antrum through the canine fossa. The crushed wall of the antrum was raised to its proper position by means of a curved sound. The cavity was cleansed and iodoform gauze introduced. On the sixth day the dressing was removed and the cavity cleansed. The hole in the antrum no longer existed and the contour of the face was entirely normal.

Dr. John O. Roe also read a paper entitled

THE TREATMENT OF FRACTURES OF THE NOSE, WITH DEMONSTRATION OF APPARATUS.

These fractures are usually accompaniments of fracture of the superior maxilla, and are frequently attended with severe hemorrhage. Fractures of the nose are usually bilateral, and may be classified as simple, compound and comminuted. Injury to the lachrymal apparatus affects the resonance of the voice and, therefore, there should be a careful examination of these parts.

As to treatment, replacement of the part should be effected as soon as possible after the receipt of the injury. Swelling may be prevented by the employment of antiseptic measures. In compound fractures, render the parts aseptic and bring the wound together with sutures. The sound and little finger should be used conjointly in replacing the fragments. If the septum is fractured it should be replaced at the same time. The parts should be held in place by splints — an external one of aluminum or copper, large enough to cover the nose and shaped to its normal contour, the edges being fastened by pieces of adhesive plaster while another piece should strap the whole to the side of the face. The internal splint has two arms, one of which lies on the floor of the nose and the other exerts general pressure from the outside. These two arms are regulated by means of a screw, which brings sufficient pressure to bear to keep the parts in their normal position.

Dr. **Casselberry**, of Chicago, objected to the instrument on the ground that it was not always at hand when wanted and that it was liable to become displaced during sleep. As all surgeons are called upon to treat this condition the dressing should be such as could be easily obtained. He had always found plaster-of-Paris bandages perfectly satisfactory.

Dr. **George A. Leland**, of Boston, thought that where there was room for replacing the fragment with the finger that this method was preferable to the use of instruments. He emphasized the importance of intra-nasal rather than extra-nasal replacement of the fragments, and also the point that splints should be used in the interior rather than upon the exterior of the nose.

Dr. **Roe** thought that the simplest method that could be devised was to cut in the proper shape a piece of aluminum or tin, and, after bending it to the natural contour of the nose, to fasten it in position with adhesive plaster. Hamilton used pledgets of cotton with strings attached. Both nostrils should be packed with gauze.

Dr. **Henry L. Wagner**, of San Francisco, read a paper on

EARLY DIAGNOSIS IN WHOOPING-COUGH.

We can shorten the duration of this disease and prevent its spread by the adoption of proper measures. A diagnosis can be made at once by a bacteriological examination of the secretions. The nose is the primary seat of infection. The secretions from the normal mucous membrane contain but few bacteria, while in this disease a large number of characteristic bacteria are present. This bacterium when full grown is two or three times as long as broad, is rounded and somewhat thickened at the ends, and is divided apparently in the middle. It is surrounded by a capsule not unlike Friedländer's pneumococcus. A one-per-cent acetic acid solution is used in staining, followed by Löffler's solution: Fuchsin, 1; carbolic acid, 5; glycerine, 50; water, 100. In my work I use plain analine dyes. Argonine may be used, which stains the bacteria blue and the cells red.

Dr. **Swain** inquired if the speaker was successful in finding bacteria in every case of whooping-cough and, also, how long before the patient began to cough.

Dr. **Wagner** replied that the bacteria are found in every case and are really the primary cause of the disease; they may be found in the pharynx, but the nose is the usual site. They are always found before the cough sets in. The bacteria generally exist in the nose during the early stages of the disease, but later they may be found in the whole upper respiratory tract.

Antiseptics are valuable in treating this disease. Iodoform is not well tolerated by children, but fluid vaseline with eucalyptol or resorcin or other antiseptics in watery solution are beneficial.

Dr. **Henry L. Wagner**, of San Francisco, reported a case of

LEPROUS ULCER OF THE LIP.

This condition is extremely rare, only one case having been reported. At the International Congress it was stated that the primary seat of this contagious disease was in the mucous membrane of the upper air passages. The case that came to me was that of a middle-aged white man who had lived in China. He had a broken-down ulcer with nodules on the lower lip, that had existed for some months with but little pain. It appeared to be syphilitic, but the nose and throat showed nothing abnormal. A portion of the ulcer submitted to examination showed the presence of lepra bacilli and innumerable suppurative bacilli. The lepra bacilli were lying about among the staphylococcus and streptococcus of suppuration. These bacilli were found partly within and partly without the cells. The patient did not return for further treatment. This case showed the lepra tuberosa form of the disease and also demonstrated a channel by which it could be communicated.

Dr. **Emil Mayer**, of New York, read a paper on the

USE OF SCHLEICH'S SOLUTION FOR ANESTHESIA IN NOSE AND THROAT OPERATIONS.

Schleich presented the results of his experiments in 1885. The absorption of the anesthetic is dependent upon the surrounding temperature and the boiling point or maximum of evaporation of the anesthetic. Three solutions are employed. No. 1 has a boiling point of 100°; No. 2, of 104°; No. 3, of 107.6°. No. 1 consists of chloroform, 45; petroleum ether, 15; sulphuric ether, 180. No. 2 consists of chloroform, 30; petroleum ether, 15; sulphuric ether, 150. No. 3 consists of chloroform, 30; petroleum ether, 15; sulphuric ether, 80. All these are by volume and not by weight. Mixture number one is the most evanescent in its effect, and therefore, number two and three are preferable in longer operations. It may be said that Schleich's theory of the adaptability of the boiling point of the anesthetic to the temperature of the body has been amply proven. These mixtures are safe for short operations. There is no stage of excitement. The tension of the pulse is increased. The patient becomes rapidly conscious. There is no asphyxia or cyanosis. Neither bronchitis nor broncho-pneumonia are likely to occur. An average of six drachms is used. The youngest patient operated upon was two years. Schleich has used this method in over 1,000 cases without complications.

(To be continued.)

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

Regular Meeting, April 18, 1898, the President, Dr. R. H. Fitz, in the Chair.

Dr. Farrar Cobb read a paper on

SEPTIC PERITONITIS AND ITS SURGICAL TREATMENT, INCLUDING REPORTS OF FOUR FATAL AND TWO SUCCESSFUL CASES.[1]

Dr. Lund then made

A REPORT OF TEN CASES OF GENERAL PERITONITIS WITH TWO RECOVERIES.[2]

Dr. Warren: I think this is a most important and interesting subject on account of the seriousness of the disease and complications, and interesting because it is now being taken from the domain of incurable cases and there seems to be a glimmer of hope that we may be-able to save a certain number of these cases. The one thing that seems to me of great importance for the general reader of current literature is to know exactly what is meant by general peritonitis. Dr. Cobb has given us quite a scientific classification of peritonitis from the bacteriological point of view and also from the clinical point of view, but still we are not able to feel sure, when a writer presents a series of cases with a certain percentage of recoveries, whether all the cases he has reported are those of general peritonitis. I think on this point there is something to be desired in order to enable us to study the matter from a clinical point of view with greater accuracy. If we could have certain tangible points of diagnosis which would enable us to classify the different types of surgical peritonitis so that they were unqualifiedly cases of a certain class, I think we should have a great advantage in studying the treatment of the disease. I have no doubt that in time we shall be able to do that. My experience has been that this disease is of an almost hopeless character. Within the last year I have entered with great enthusiasm into the disinfecting, disembowelling, washing out of the peritoneal cavity. I had my share of these cases in my hospital service this winter, 17 cases of appendicitis occurring in sixteen days in December, several of which were fatal cases with general peritonitis.

I have in mind, not having looked up any statistics, only two cases of what I should call general peritonitis which have been cured. One case occurred several years ago and arose from a strangulated hernia. In that case there were multiple incisions. Pus welled up from the incision in the left groin; thick, creamy pus welled up from the incision on the median line below the umbilicus. Four incisions were made, there was very extensive washing out of the peritoneal cavity, with subsequent opening of bowel to relieve tension and finally complete recovery. There was no bacteriological examination.

One of my cases, operated on this winter by Dr. Scudder, was treated successfully in this way. The usual incision for appendicitis having been made general peritonitis was discovered, a median incision made, the patient disembowelled and washed out according to the method described this evening, and the patient recovered. Bacteriological examimation showed it to be a bacillus, I suppose the colon bacillus, although that was not stated in the bacteriological examination. Both of these cases were pretty strong adults.

I opened the peritoneal cavity in the adults and young, disembowelled and injected quarts of salt solution and scraped out, rubbed the intestine and drained in various directions without success and I suppose that it is almost impossible to say of a given case whether it is going to be successful or not. One of the great obstacles to a thorough disinfection of the abdominal cavity is the tendency to shock from the carrying out of the technique of the operation and it has seemed to me that the most marked effect in several of the cases was produced by the disembowelling. The moment the intestines were removed from the abdominal cavity in spite of keeping them warm a marked change in the pulse was noticed in several cases.

Now the question arises, what are some of the improvements in technique that enable us to get better results as I feel sure we shall get as we go along. Dr. Cobb has alluded to one very suggestive point and that is the currents in the peritoneal cavity. How shall we know just what routes pus is selecting for its absorption or for producing its poisonous effects? It seems to me, in that line to a certain extent we are going to gain considerable valuable information. Then in regard to the machinery for the operation, I think that we have got to do it perhaps on a larger scale than we have before. Apparatus is going to be of importance; greater command of large quantities of proper kind of solution, and at proper temperature, pouring enormous quantities at the right temperature into the abdominal wound. Our apparatus now consists chiefly of bottles of salt solution, in rows or in douches, which are perhaps not sufficiently voluminous to enable us to give the amount that is demanded for washing out.

Dr. Harrington: This is a very interesting and important subject, and I have been very much pleased to hear what Dr. Cobb has said in regard to the objections to closing up the incision entirely in cases of septic peritonitis. I do not believe that it is a safe or wise procedure. I am perfectly convinced that cases of septic peritonitis may recover without operation. I am sure that I have seen such cases. Operation aids in these cases, because we are often able to remove the cause of the sepsis and most septic material at the time of operation. If the wound is left open and proper drainage is used, we get rid of a considerable amount of septic material which must otherwise be carried off through the lymphatic system, which is already being worked to its full capacity. Cases of septic peritonitis die from sepsis, and rarely, I believe, from intestinal obstruction, unless that be the primary cause. As Dr. Warren intimated, it is a very difficult thing to draw the line between what is septic peritonitis and what is not. If one opens the abdominal cavity and finds the intestines looking quite normal, and an appendicular abscess, which is shut off from the general cavity, one is inclined to think that septic peritonitis does not exist. But in such cases one will often find a considerable quantity of turbid or purulent serum which has collected in the pelvis. This fluid is probably always septic to a certain extent. It seems to me a great many cases that recover without washing out, and without pelvic drainage, might be classed among cases of septic peritonitis. This we can only prove by examination of the free fluids from all the cases. I am quite convinced that a great many cases of septic peritonitis of the mild sort recover, in which no effort is made to wash out the abdominal cavity, or to remove and wipe the intestines. I do not believe in removing the bowels from the abdominal cavity and wiping them off. In septic peritonitis, when severe and general, I advise washing without the removal of the bowels. In cases of great distention of the bowels it is a wise thing to tap. I have found an ordinary gum elastic catheter very serviceable for this purpose. It can be inserted through a small opening, and may be moved through the intestine beyond kinks, and large quantities of gas and feces can be removed. Before it is withdrawn McCosh's method of introducing sulphate of magnesium can be employed, which I think is another valuable aid.

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[1] See page 231 of the Journal.

[2] See page 242 of the Journal.

I believe that the line of the insertion of our drainage is of importance. I think that the closer we can keep to the parietal peritoneum the better. It is a dangerous thing to have the gauze extend in among the coils of intestine. It is usually possible, whether your incision be median or lateral, to follow the parietal peritoneum so that the gauze lies with abdominal wall on one side of it, and the intestine on the other. The advantage is that there is much less danger of intestinal obstruction, which may take place in the weakened condition of the intestines.

Dr. J. C. Munro: I think it significant that Dr. Lund's cases of recovery were almost all in children. In my own experience the only cases that have recovered, three, were in young people, that is, people of resistance. In addition, eleven cases of acute purulent general peritonitis in patients over thirty-five have been fatal, no matter what has been the treatment. All the cases of tubal origin have died; but, of course, they belong to the low class of women as a rule. Two cases of gastric ulcer, perforating, with general peritonitis have died. The patients that recovered were young people, with good staying power. In none of these was any extensive operation done beyond flushing the belly with gallons of salt solution. In every case in which I have tried Finney's method I have been obliged to stop on account of shock, but all the cases were adults and of poor resistance.

Dr. Fitz: It is an occasional experience at postmortem examinations to find the intestines extensively adherent and united to the abdominal wall by means of fibrous adhesions, appearances to be regarded as positive evidence of recovery from a general peritonitis. In rare instances these appearances are attributable to a fatal peritonitis, more often they are associated with a history of antecedent, severe, peritonitic symptoms. Although Dr. Cobb states that the results of bacteriological examinations are opposed to the view that gonococci are a cause of general peritonitis there can be no doubt that gonorrhea may prove the source of this disease. A number of years ago Dr. M. H. Richardson and I saw such a case in a young man, ending in death. The peritoneal infection proceeded from a subperitoneal bubo secondary to the gonorrheal urethritis. As cultures were not made from the exudation it is quite possible, as asserted by Dr. Cobb, that a mixed infection may have existed. It is obviously of extreme importance to remember that gonorrhea even in the male may cause a fatal peritonitis although the bacteria in the exudation may not prove to be a pure culture of gonococci.

Dr. Cobb: I did not wish to be understood as thinking that no cases of general septic peritonitis recover. I think we know nothing in regard to the infection in those cases that recover without operation. In my paper I considered only those virulent infections which I am sure rarely recover without operation. I do not believe it is at all frequent for infections with pneumococci, streptococci or colon bacilli presenting the severe picture of undoubted septic peritonitis involving the entire peritoneal cavity, the regions of the liver, spleen, small intestine and pelvis, to recover without operation. I am willing to grant that cases of localized peritonitis may simulate general peritonitis clinically, and recover without operation. I did not intend to consider the cases in which there was any question of diagnosis, but only the cases of acute general septic peritonitis with rapidly rising pulse, distended abdomen, tenderness — all the unmistakable signs of peritonitis. If persuaded that general peritonitis exists I do not see how any one can possibly delay operation. The earliest possible operation theoretically and rationally is the one to be successful.

My experience in regard to the shock of disembowelling the patient has been that in the moderately prostrated cases, if done properly, the shock has not been increased appreciably. In fact, all the cases in which I have done it have not been any the worse for it. I have plenty of assistants and keep up constant hot salt-solution irrigation and have one assistant do nothing but take care of the intestinal coils and keep them warm. I think if we are trying to remove as much of the acute bacterial infection as possible and it has been proven that the fibrin flakes contain active organisms we should try to remove them if the condition of the patient admits it. In one or two cases the fibrin would not come off without the use of considerable force and in my experience those are the fatal cases and it is not wise to inflict the necessary trauma on the peritoneum to remove it. In the other cases I think the flakes of fibrin ought to be removed.

Large Families in the Philippines.— It is stated that the Bocals, who are supposed to be the aborigines of the Philippine Archipelago, are, without doubt, the laziest people in the world. As we see, however, in some of the least worthy elements of our own population, they have very large families, often twenty children in a house, and there are numerous cases of parents having fifteen to eighteen children. It is a lamentable fact that the size of the family is apt to stand in inverse ratio to its degree of intelligence.

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TREATMENT OF HEMORRHAGE FROM THE BOWELS IN TYPHOID FEVER.

Hemorrhage in typhoid fever may occur in the earlier or later stages. Before the latter part of the second week, hemorrhage arises from rupture of engorged vessels in the infiltrated patches; in the third and fourth week and later, it is due to ulceration and sloughing. The practitioner will generally be able to refer hemorrhage in typhoid fever to the one or the other of these causes, and will naturally regard the earlier hemorrhages as of the most favorable prognosis, demanding no special modification of the ordinary treatment; before the hemorrhages of the final stages he will often stand appalled, and every kind of treatment may be ineffectual. These ultimate hemorrhages frequently prove fatal by the abundance of the blood-loss which cannot be arrested by any medical or surgical means at present known; peritonitis by perforation often carries off the patient.

If the hemorrhage of the early stages may be salutary rather than dangerous, relieving the congestion at the primary foci of the disease, hemorrhage from ulceration would seem to demand the most prompt and energetic measures. Unfortunately we are still obliged largely to treat these hemorrhages empirically. The junior practitioner will exercise caution before he sets aside therapeutic methods which are the result of the wide experience of acute and careful clinical observers, for methods which may be the result of theory rather than of exact knowledge.

And here we take exception to an able article in the July number of the *Therapeutic Gazette*, in which the writer condemns the treatment of the hemorrhages occurring in the later stages of typhoid fever by opium and astringents as unscientific and pernicious. The opium treatment of typhoid hemorrhages may be regarded as one of those methods which have been empirically acquired. It has long been taught on the authority of clinical experience, that small doses of opium have a restraining influence on internal hemorrhages; such use of opium was counselled as far back as Sydenham and John Cullen and by earlier authorities in intestinal and other fluxes, and at the present day it would be hard to persuade the practitioner who is called to prescribe for an alarming hemorrhage from the bowels with shock and collapse that opium is wholly contraindicated as being baneful and dangerous. We have said *small* doses rather than *large*, recognizing that there is no indication to paralyze the organic functions, lock up the secretions, or unduly restrain the peristalsis of the intestines. There is a marked difference in the action of opium according to the dose given and the combination, and it is a matter of common experience that this remedy is often of great efficacy in diarrhea and dysentery when combined with laxatives, as rhubarb, which keep up rather than arrest the action of the bowels. We do not profess to know or to explain just how opium acts as an anti-hemorrhagic agent, and do not believe that we are in this respect much farther advanced than the undergraduate of Molière's play who thus explained the hypnotic action of opium: "*quia in eo est virtus dormitiva.*" We do not believe that opium is given in intestinal hemorrhages "to paralyze the vasomotors," as the *Therapeutic Gazette* writer intimates, and believe that its action is too complex to be included in any such formula as that. At least this was the view of Vulpian after careful experimentation with opium and its salts.[1]

Nor do we think that it is the intent of the practitioner who prescribes opium or morphine in intestinal hemorrhages absolutely to arrest peristalsis, as the *Gazette* writer intimates. He would not so much arrest intestinal peristalsis as diminish it. He does find an indication to put the bowel at rest as far as this can safely be done. If the existence of pent-up bacterial products and accumulated blood-clots are a menace to the patient, if meteorism is on the increase, the practitioner will take some safe means of clearing out the bowels, whether by saline laxatives or cold enemata; at the same time he may deem it necessary to continue the opium treatment by mouth or hypodermically. It is a little surprising that the writer in the *Therapeutic Gazette* does not allude to the turpentine treatment of the hemorrhages of typhoid fever, proposed more than fifty years ago by Dr. Copland in the *Lancet*, and highly extolled by many subsequent authorities. Murchison used to prescribe turpentine in 15-minim doses along with 10 minims of laudanum in mucilage every three or four hours, and says that this combination was almost invariably successful in arresting the bleeding. Turpentine has the merit of being antiseptic as well as stimulant and styptic.

With regard to the exhibition of acetate of lead, tannin, perchloride of iron and even ergot in the hemorrhages of typhoid fever, perhaps the experienced practitioner who has seen many cases die in spite of the free exhibition of these astringents and a few recover, may be allowed, with Liebermeister, to indulge some scepticism with regard to their utility. It is not absolutely proved that these astringents reach the bleeding focus to exercise there any styptic action.

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[1] Les vaso-moteurs, tome ii, p. 519.

It has been said that authorities are not united as to the treatment of the hemorrhages of enteric fever, some favoring ice-cold compresses over the abdomen and cold lavements, and others condemning these measures as irrational and pernicious. There is, doubtless, more general agreement as to the utility of the opium treatment.

Dr. McCorkle,[2] for instance, affirms that opium has "a marked sustaining action on the heart," and a tonic effect on the nervous system. He thinks it a great cerebral and spinal stimulant, and an "equalizer of the circulation." In the later stages he has often withdrawn the opium and found the ataxic symptoms become more pronounced, the heart's action feebler, with return or increase of delirium, all of which symptoms have abated on resumption of the opium. He regards it as the sheet anchor in hemorrhage, not because it *paralyzes*, but because it *stimulates* the vasomotor system! In looking over our files of medical journals we everywhere find similar testimony, and those who still cling to the opium treatment of intestinal hemorrhages have the support of the very best clinical authorities for that theory and practice.

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UNIFORMITY IN THE REGISTRATION OF VITAL STATISTICS.

The following statement from the last number of the *Monthly Bulletin of Vital Statistics of Michigan*, shows that progress is being made in several States, together with two of the British Provinces and Mexico, in the matter of an improved system of nomenclature and classification of diseases and causes of death. The movement in this direction is chiefly due to the energy and intelligence of the Superintendent of Vital Statistics of Michigan, who has taken a deep interest in the subject of uniform methods in this country.

It is quite significant that Massachusetts, once the foremost in this important branch of public work, should now be lagging so seriously behindhand.

"At the Annual Conference of State and Provincial Boards of Health of North America, Detroit, August 10–11, 1898, the following resolutions were unanimously adopted:

"*Resolved*, That the Conference of State and Provincial Boards of Health of North America recommends the adoption of the Bertillon classification of causes of death as soon as such change can be conveniently made from the systems now in use in registration offices;

"*Resolved*, That the governments of the United States, Mexico and Canada be likewise requested to make this classification the basis of the mortality statistics of the censuses of 1900 and 1901.

"The progress of the movement for a uniform and perfectly comparable classification of causes of death is indeed very gratifying. The following State registration offices now use the Bertillon system, or will put it into use in the near future, all of which, excepting only Quebec and Mexico, have adopted it during the present year — Canada: Province of Ontario, Province of Quebec. United States: State of Connecticut, State of Indiana, State of Maine, State of Maryland, State of Michigan, State of Minnesota, State of Rhode Island, State of Vermont, State of Wisconsin. Mexico: (Superior Board of Health).

"Its acceptance by several other States may be expected in the near future, so that perfect comparability will soon be attained.

"The final action of the American Public Health Association on the adoption of this classification will take place at the meeting to be held at Ottawa on September 27–30, 1898. As most of the members of the Association actively interested in vital statistics belong also to the Conference of Boards of Health, the action of the Association cannot be doubted. There will then remain to be decided the exact time and means of putting the system into effect in the several offices, the establishment of the measures for periodical revision of the classification in order to keep it abreast of scientific progress, and the work of the first regular revision before the registration offices put it into practical effect. This work will be an arduous one, but ought to be thoroughly done, with the co-operation of all the countries using the system, including France and South American countries, in time to be officially promulgated in the year 1900 — perhaps in connection with the session of the International Congress of Hygiene and Demography at Paris in that year. This will enable statisticians all over the world to begin their compilations for the first year of the next century on a uniform system."

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MEDICAL NOTES.

Corsets Prohibited. — The Russian Minister of Public Instruction has issued a decree, prohibiting the use of corsets by women.

Women Honored. — An Italian woman, Signorina Esther Bonomi, has obtained at the University of Genoa the first doctorate in medicine granted to a female student, in modern times at least, in Italy. Another woman, named Dr. Katharina van Tusschenbroek, has been appointed to the professorship of gynecology in the University of Utrecht.

A Positive Danger. — Professor Vincenzi is said to have been making investigations regarding the purity of certain holy water used in a popular church in his native city. He found that one drop of the water taken on Saturday while people were applying it to lips or brow, when spread on a gelatin sheet, yielded within forty-eight hours about 2,300 colonies of bacteria. On Sunday when the holy water was in more constant use the professor could not estimate the innumerable colonies, but his tests proved that there were diphtheria bacilli among them, and cases of diphtheria in Sassari at the time emphasized the revelation.

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[2] North Carolina Medical Journal, June, 1897.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, September 7, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 18, scarlet fever 13, measles 9, typhoid fever 19.

Sailing of the "Bay State." — The *Bay State*, thoroughly provisioned, and with the addition of Dr. Richard C. Cabot to her medical staff, sailed yesterday for Porto Rico, with the expectation of being gone about three weeks. She is expected to bring those members of the Sixth Massachusetts Regiment, who are ill, to Boston.

Death of Dr. Cleon M. Hibbard. — We announce with regret the death of Dr. Cleon M. Hibbard, of St. Louis, house-physician at the Planters' Hotel, and formerly Assistant Superintendent of the South Department of the Boston City Hospital. He fell through a passenger elevator-shaft from the seventh floor, August 22d, and was almost instantly killed. Dr. Hibbard had already done considerable scientific work of significance, particularly in connection with diphtheria. His death is a distinct loss to the medical profession.

NEW YORK.

Mortality from Heat.— The extreme heat of the last two days of August and first four days of September caused a considerable increase in the mortality of the city. On September 2d, there were 21 deaths from the direct effects of the heat reported, and on September 3d, no less than 64, by far the largest record of any one day during the present season; 45 of the deaths occurred in Manhattan Borough; 17 in Brooklyn and 2 in Queens. On Sunday, the 4th, there were almost as many fatalities, 60, and the death-list would no doubt have been still greater if it had been a working day. One of the victims of sunstroke was a member of the Seventy-first Regiment, New York Volunteers, now on furlough, who had safely passed through the tropical campaign of Santiago. It must be understood that these reports represent only a part of the actual mortality from the heat, as they do not include any cases regularly attended by physicians, but only those coming under the notice of the police, when the patients actually died on the street or shortly after their removal to hospitals.

Distribution of Sterilized Milk. — In view of the excessive heat and the consequent suffering among the tenement-house population, Mr. Nathan Strauss ordered that all the depots for the distribution of sterilized milk which he has so generously established, some of which are usually open only at certain hours and others entirely closed on that day, should remain open all day Sunday. At most of these infants' food, prepared after the formulæ of Drs. A. Jacobi and R. G. Freeman, can be procured gratis by those too poor to pay the cost price charged to others.

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Miscellany.

RAILWAY ACCIDENTS IN 1897.

From statistics furnished by the Interstate Commission, we learn that the total number of casualties to persons on account of railway accidents in the United States, for the year ending June 30, 1897, was 43,168. Of these casualties, 6,437 resulted in death, and 36,731 in injuries of varying character. Of railway employees, 1,693 were killed and 27,667 were injured during the year. According to the three general classes these casualties were divided as follows: Trainmen, 976 killed, 13,795 injured; switchmen, flagmen and watchmen, 201 killed, 2,423 injured; other employees, 516 killed, 11,449 injured. The casualties to employees resulting from coupling and uncoupling cars were: killed, 214; injured 6,283. The corresponding figures for the year ending June 30, 1896, were 229 killed and 8,457 injured. The casualties from coupling and uncoupling cars were assigned as follows: Trainmen, killed, 147; injured, 4,698; switchmen, flagmen and watchmen, killed, 58, injured, 1,325; other employees, killed, 9; injured, 260. The casualties resulting from falling from trains and engines were as follows: Trainmen, killed, 325; injured, 2,726; switchmen, flagmen and watchmen, killed, 32; injured, 357; other employees, killed, 51; injured, 544.

The casualties to the three general classes of employees mentioned caused by collisions and derailments were as follows: Trainmen, killed, 250; injured, 1,327; switchmen, flagmen and watchmen killed, 11; injured, 74; other employees, killed, 42; injured, 251. The total number of passengers killed during the year under review was 222, injured, 2,795. Ninety-three passengers were killed and 1,011 injured in consequence of collisions and derailments. Other than employees and passengers the total number of persons killed was 4,522; injured, 6,269. Included in these figures are casualties to persons classed as trespassers, of whom 3,919 were killed and 4,732 were injured. From summaries showing the ratio of casualties, it appears that one out of every 486 employees was killed and one out of every 30 employees was injured during the year. With respect to trainmen, including enginemen, firemen, conductors and other trainmen, it appears that one was killed for every 165 employed, and one injured for every 12 employed. One passenger was killed for every 2,204,708 carried, and one injured for every 175,115 carried. Basing ratios upon the number of miles travelled, it appears that 55,211,440 passenger-miles were accomplished for each passenger killed, and 4,385,309 passenger-miles for each passenger injured.

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THERAPEUTIC NOTES.

M. Lefour[1] tells of a case of vomiting in a pregnant woman, which became so intractable, that he was called upon to empty the uterus, but instead he did an energetic pulverization over the dorso-cervical portion of the spine with methyl chloride and as a result the vomiting ceased, and has not returned since.[2]

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[1] Journal de Méd. de Bordeaux, February, 1898.

At a meeting of the Académie de Médecine of Paris, held April 12th, Cadet de Gassicourt [2] communicated a case of congenital goitre in an infant, treated successfully by administering to his nurse — his mother — thyroid extract. The three months old infant had a two-lobed goitre, his mother — a woman of twenty-two — had also a goitre, but presented no signs of myxedema or cretinism. The mother was given daily two tablets of the dry thyroidine during five days, when the treatment was interrupted for four or five days, and then renewed again. Neither the mother nor the infant presented any symptoms of thyroidism. At the end of six weeks a diminution in the size of the mother's goitre was observed, while after four months of treatment the goitre in the infant disappeared entirely, the general condition improving considerably. Although the mother's milk was not analyzed, it is reasonable to assume, that the active agency of the thyroid-gland extract was communicated to the infant by the mother, through her milk.[8]

For Pruritus of the Scrotum:

℞ Hydrarg. corrosivi . . . . gr. i.
Alcoholis }
Aquæ chamomill } āā . . . . . . ʒ v.
Chloroform . . . . gttas. v.
Aquæ lauzoceras. . . . . . . ad. ℥ iiss.
M. et Sig. For external use. (Leistikow.)

Sturwitz [4] tells of a case of scarlatinal nephritis in a seven-year-old boy, attended by ascites and edema, which could not in the least be relieved by the ordinary treatment in use. He resorted to the almost entirely forgotten venesection — which he considers as an effective diuretic agency under certain circumstances — and an abstraction of a small cupful of blood brought on rapid diminution of the edema on the very next day.

For Pediculi:

℞ Bals. Peru. . . . . ʒ ii.
Spir. Æth. . . . . ʒ x.
M. et. Sig. Rub in as directed. (Therap. Monatsch.)

In connection with Dr. Sturwitz's case we find that Professor Larache [5] resorts to blood-letting in cases of uremia. One patient suffered with anuria of pyelonephritic origin for six days. Venesection brought on abundant secretion of urine, which placed the patient at once beyond any danger. The amount of blood extracted in this case amounted to twenty-five ounces, in other cases to half or a little more of that quantity. In another case, that of a woman of twenty-nine, who was brought into the hospital suffering with severe uremic convulsions due to a chronic nephritis, venesection brought on almost at once a cessation of the convulsions, and abundant secretion — about 8 litres in 24 hours — of urine. In the third case, that of a twenty-one-year-old girl suffering with uremic convulsions due to an acute nephritis, the convulsions disappeared a few hours after the venesection, but diuresis was not influenced to any marked extent. Investigation of the blood showed that the number of the red blood corpuscles reached the normal in from two to five weeks. As an indication for blood-letting, Larache considers a favorable general condition, as well as increased blood pressure, as evidenced by the condition of the pulse.

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[2] Bulletin Général de Thérapeutique, June 8, 1898.
[3] Russkiy Archiv. Pataologii et cet., May 31, 1898.
[4] Therap. Beilage de. Deutsch. med. Woch, June, 1898.
[5] Deutsch. med. Woch., Centralblatt f. d. gesam. Therapie, July, 1898.

METEOROLOGICAL RECORD

For the week ending August 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.92	72	84	60	76	66	71	W.	W.	12	10	C.	C.	
M..22	29.84	78	88	67	72	75	76	W.	S.W.	11	12	C.	O.	
T...23	29.86	78	88	69	82	98	90	W.	S.	8	14	O.	R.	.36
W..24	29.88	82	94	69	81	88	84	S.W.	N.W.	9	10	C.	R.	.04
T...25	29.74	78	84	71	80	83	82	S.W.	S.W.	12	9	O.	C.	.26
F...26	29.83	72	78	66	66	53	60	W.	W.	15	12	C.	C.	
S...27	30.01	68	74	62	70	47	58	N.W.	N.	10	9	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H. hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, August 27, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Whooping-cough.
New York . .	3,438,899	1492	719	22.56	9.36	15.08	2.46	2.04
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	189	83	24.38	13.78	21.18	1.59	1.06
Boston . . .	517,732	278	114	21.96	9.36	12.96	2.52	1.44
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	98	51	32.00	7.00	21.00	6.00	5.00
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	53	21	30.24	5.67	20.79	—	—
Nashville . .	87,754	43	18	11.65	4.66	6.99	2.33	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	105,050	38	19	23.67	5.26	18.41	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Lowell . . .	87,193	52	23	34.56	3.84	30.72	1.92	—
Cambridge . .	86,812	43	24	37.18	9.32	32.62	2.33	—
Lynn	65,220	29	19	48.30	—	31.05	—	6.90
New Bedford .	62,416	29	14	31.05	10.35	31.05	—	—
Somerville . .	57,977	26	0	34.65	3.85	30.80	—	—
Lawrence . .	55,510	—	—	—	—	—	—	—
Springfield . .	54,790	16	8	37.50	19.75	37.50	—	—
Holyoke . . .	42,364	25	16	52.20	4.00	48.00	—	—
Salem	36,062	17	12	23.32	—	23.32	—	—
Brockton . .	35,353	—	—	—	—	—	—	—
Malden . . .	32,891	5	3	60.00	—	60.00	—	—
Chelsea . . .	32,716	12	8	16.66	16.66	16.66	—	—
Haverhill . .	31,406	16	7	81.25	6.25	75.00	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	5	4	20.00	—	20.00	—	—
Fitchburg . .	28,392	—	—	—	—	—	—	—
Taunton . . .	27,812	14	5	42.84	—	35.70	—	
Quincy . . .	22,562	6	2	33.33	16.66	33.33	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	6.	2	33.33	16.66	33.33	—	—
Everett . . .	21,575	—	—	—	—	—	—	—
North Adams .	19,135	—	—	—	—	—	—	—
Chicopee . .	17,368	—	—	—	—	—	—	—
Medford . . .	15,832	2	0	—	—	—	—	—
Newburyport .	14,794	—	—	—	—	—	—	—
Melrose . . .	11,965	2	0	50.00	—	50.00	—	—

Deaths reported 2,510: under five years of age 1,183; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping cough, erysipelas and fevers) 668, consumption 241, acute lung diseases 131, diarrheal diseases 507, typhoid fever 60, whooping-cough 51, diphtheria and croup 24, cerebro-spinal meningitis 16, scarlet fever 6, measles 2, erysipelas 2

From diphtheria and croup New York 16, Baltimore 4, Boston 2, Nashville and Lowell 1 each. From cerebro-spinal meningitis

New York 7, Lynn 3, Providence and Worcester 2 each, Baltimore, Cambridge, Somerville and Holyoke 1 each. From scarlet fever New York 6. From measles New York 2. From erysipelas New York 2.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TWENTY-ONE DAYS ENDING SEPTEMBER 1, 1898.

MURRAY, R. D., surgeon. To proceed to Galveston, Tex., for special temporary duty. August 12, 1898. To proceed to Key West, Fla., for special temporary duty. August 17, 1898. To proceed to Tampa, Fla., for special temporary duty. August 25, 1898.

CARTER, H. R., surgeon. To proceed to Franklin, La., for special temporary duty. August 13, 1898.

WHEELER, W. A., surgeon. To proceed to Cairo, Ill., and assume temporary command of Service. August 19, 1898.

CARMICHAEL, D. A., surgeon. Detailed as chairman of board to select site for national quarantine station at or near the mouth of the Columbia River, Washington. August 18, 1898.

KALLOCH, P. C., surgeon. To proceed to Fort Pierce, Fla., for special temporary duty. August 19, 1898. To proceed to Franklin, La., for special temporary duty. August 29, 1898.

PECKHAM, C. T., surgeon. To proceed to New Orleans, La., for temporary duty. August 30, 1898.

WHITE, J. H., surgeon. Unexpired portion of sick leave granted by Bureau letter of July 30, 1898, revoked, and directed to rejoin station at New York, N. Y. August 16, 1898.

VAUGHAN, G. T., passed assistant surgeon. Granted leave of absence without pay during war with Spain. August 18, 1898.

COBB, J. O., passed assistant surgeon. Granted three months' leave of absence without pay from August 8, 1898. August 11, 1898. Leave of absence granted by Department letter of August 11, 1898, revoked, and directed to proceed to Ponce, Porto Rico, for special duty. August 19, 1898.

STONER, J. B., passed assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 16, 1898. To report at Bureau for special temporary duty. August 18, 1898 To proceed to Miami, Fla., for special duty. August 22, 1898.

STEWART, W. J. S., passed assistant surgeon. Granted leave of absence for one day September 3, 1898. August 31, 1898.

SPRAGUE, E. K., passed assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 16, 1898.

WICKES, H. W., assistant surgeon. Upon expiration of leave of absence to proceed to Cleveland, O., and assume command of Service. August 12, 1898.

CUMMING, H. S., assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 25, 1898.

PARKER, H. B., assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 23, 1898.

ANDERSON, J. F., assistant surgeon. To proceed to the Tortugas Quarantine Station and report to commanding officer for duty and assignment to quarters. August 26, 1898.

GWYN, M. K., assistant surgeon. To proceed to Montauk Point, N. Y., for special temporary duty. August 25, 1898.

AN ARMY MEDICAL BOARD

Will be in session at Washington City, D. C., during October next for the examination of candidates for appointment to the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before October 1, 1898, for the necessary invitation, giving the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal acquaintance, from at least two reputable persons, as to his citizenship, character and habits. The candidate must be between twenty-two and twenty-nine years of age and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Successful candidates at the coming examination will be given a course of instruction at the next session of the Army Medical School.

Further information regarding the examinations may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

GEO. M. STERNBERG,
Surgeon-General, U. S. Army.

SOCIETY NOTICES.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.—This Association will hold its eleventh annual meeting in the banquet hall of the Monongahela House at Pittsburg, Pa., Tuesday, Wednesday and Thursday, September 20, 21 and 22, 1898.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.—The eighth annual meeting of this Association will be held at the Academy of Medicine in New York City, November 17, 1898, under the presidency of Dr. C. B. Herrick, of Troy.

GEO CHAFFEE, M.D., *Secretary*, Brooklyn, N. Y.

RECENT DEATHS.

GEORGE ALBERT COBURN, M.D., M.M.S.S., died in East Cambridge, September 2, 1898, aged fifty-two years.

JOSEPH BARTLETT FORBES, M.D., M.M.S.S., died in East Bridgewater, August 30, 1898, aged eighty-three years.

BOOKS AND PAMPHLETS RECEIVED.

The Purification of Public Water-Supplies. By John W. Hill, Consulting Engineer, Member American Society of Civil Engineers, Member American Water Works Association, etc. New York: D. Van Nostrand Company. London: E. & F. N. Spon. 1898.

Observations upon the Relations between Leukæmia and Pseudo-Leukæmia. By C. F. Martin, B.A., M.D., Lecturer on Pathology, McGill University; Assistant Physician Royal Victoria Hospital, Montreal; and G. H. Mathewson, B.A., M.D. Reprint. 1896.

Branchial Carcinoma. External Esophagotomy for Impacted Foreign Body. Two Recent Cases with Recovery in Each. Question of Operative Interference in Recent, Simple Fractures of the Patella. By Charles A. Powers, M.D., Denver. Reprints. 1897–1898.

A Manual of Surgery for Students and Practitioners. By William Rose, M.B., B.S. Lond., F.R.C.S., and Albert Carless, M.S. Lond., F.R.C.S. One volume, 8vo, 1162 pages, very profusely illustrated by wood-engravings. New York: William Wood & Co. 1898.

A Manual of Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D., Clinical Professor of Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, etc. With 386 illustrations. Philadelphia: W. B. Saunders. 1898.

Handbook for the Hospital Corps of the U. S. Army and State Military Forces. By Charles Smart, Deputy Surgeon-General, U. S. A. Approved by the Surgeon-General of the Army. Second Revised Edition. 12mo, 358 pages, illustrated. New York: William Wood & Co. 1898.

Wounds in War. The Mechanism of their Production and their Treatment. By Surgeon-Colonel W. F. Stevenson, Professor of Military Surgery, Army Medical School, Netley, England. One volume of 588 pages, 8vo, profusely illustrated. New York: William Wood & Co. 1898.

A Manual of Bacteriology, Clinical and Applied. With an Appendix on Bacterial Remedies, etc. By Richard T. Hewlett, M.D., M.R.C.P., D.P.H. (Lond.), Assistant in the Bacteriological Department, British Institute of Preventive Medicine, London. Philadelphia: P. Blakiston, Son & Co. 1898.

The Mental Affections of Children: Idiocy, Imbecility and Insanity. By William W. Ireland, M.D. (Edin.), H. M. Indian Army (Retired List), Corresponding Member of the Psychiatric Society of St. Petersburg and of the New York Medico-Legal Society, etc. London: J. & A. Churchill. Edinburgh: James Thin. 1898.

On the Stages and Forms of Syphilis, with more Especial Reference to the Hepatic Manifestations of the Disease. Upon the Existence of a Minute Micro-Organism Associated with Cases of Progressive Portal Cirrhosis. By J. G. Adami, M.A., M.D., F.R.S.E., Professor of Pathology, McGill University, Montreal. Reprints. 1898.

Manual of Physical Diagnosis for the use of Students and Physicians. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania and Physician to the University Hospital; Physician to the Philadelphia Hospital, etc. Third Edition, revised and enlarged, with colored and other illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

Medical Diagnosis, a Manual of Clinical Methods. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S.Ed., Assistant Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine in the School of Medicine of the Royal Colleges, Edinburgh. Fourth edition, revised and enlarged. With 112 illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

Lecture.

TALKS ON THE HISTORY OF MEDICINE.[1]

No. IV.— Practical Medicine in the Seventeenth Century: Sydenham.

BY DAVID HUNT, M.D., BOSTON.

We have seen that ancient medicine was hardly more than a parasitic attachment of ancient philosophy; at the Renascence we found physiology continuing this relation, with perhaps more life and activity, while Vesalius with a genius, not even yet fully appreciated, really began the foundations of modern medicine. It was Harvey, who, continuing the methods of Vesalius, did more than any one man to make physiology a possibility.

When we attempt to follow the development of practical medicine during the succeeding epoch we discover certain plausible generalizations which having passed current for centuries seem to be established truths. The principles of medical history have been, at least in England and America, deduced mostly from these generalizations. They may be stated as follows: Bacon restored the sciences and established the inductive method, Harvey followed it and established modern physiology; Sydenham, our great medical fetish, reformed practical medicine by continuing the lines so established. Nothing can be farther from the truth than these generalizations, they rest upon a confusion of philosophical and scientific truths and have resulted in numerous misconceptions of medical relations according to which great men and principles have suffered from neglect, and plausible mediocrity has been unduly honored.

The modern scientific estimate of Bacon agrees fully with that of Harvey, "he wrote of science like a Lord Chancellor." He was very ignorant of methods of science and of research. Harvey, conscious of the work of Padua, and of his own long-continued labors in demonstrating the circulation, and in his observations in embryology, felt a sympathy with the methods of Vesalius, Copernicus, Kepler and Galileo which Bacon, ignorant of mathematics and of laborious research in nature, could not feel. It is easy now to see that Bacon's prosaic, routine use of the senses alone, his neglect of proper verified deductions, constituted a philosophical defect which a real observer was bound to feel even if his philosophical culture had not attained that degree of perfection which enabled him clearly to express it. Tyndall has stated the gist of the matter, ' The domain of the senses in Nature is almost infinitely small in comparison with the vast region accessible to thought which lies beyond them." Bacon's merit as a philosopher in throwing off the old metaphysical bondage will always remain; his greatness and his littleness are secure; anything like an estimate of him would include a study of Descartes and his successors as well as a thorough study of his doctrines in the line of philosophers who are his lineal descendants. We must content ourselves in this relation with the statement, that while Bacon pointed out fully the importance of the study of nature he had only the crudest and narrowest ideas as to the methods of research. Harvey's and Newton's practical disregard of his teachings in this direction are but confirmations of their true estimate of them, estimates wholly in accord with those of modern scientific thought. In fact modern medicine, resting as it does mainly upon principles derived from great verified deductions, is itself the best example of the insufficiency of Baconian methods.

Six years after Bacon's death (1632) John Locke was born. Americans will never forget his services for liberalism in politics and philosophy: "The Fundamental Constitutions for the Government of Carolina" has fixed his name among those of the greatest of our founders. His philosophical work fixes his place among the leaders of English enlightenment; his medical connection is with Sydenham; unfortunately in this connection we have to deal chiefly with his weakest side. This we shall see by looking at Locke and Sydenham together. For a time they were almost partners; Locke's view of the methods of induction, of the supreme importance of the senses, exaggerated all the defects of Bacon's doctrines as applied to scientific research; Sydenham's strong, practical but uncultivated common-sense, was readily captured, and together they represented a philistinism which has held nearly supreme control of English medicine.

In H. R. Fox Bourne's "Life of Locke" (page 228, Vol. I) a fragment of a paper by Locke and Sydenham on "Anatomy" is quoted. A part in Sydenham's handwriting reads as follows: "Others of them have more pompously and speciously prosecuted the promotion of this art by searching into the bowels of the dead and living creatures, as well sound as diseased, to find out the secret of discharging them, but with how little success such endeavours have been and are like to be attended, I shall in some measure make appear."

Locke continues as follows: "But that anatomy is like to afford any great improvements to the practice of physics, or assist a man in the finding out and establishing a true method, I have reason to doubt. All that anatomy can do is only to show us the gross and sensible parts of the body, or the vapid and dead juices, all which, after the most diligent search, will be no more able to direct a physician how to cure a disease than how to make a man; for to remedy the defects of a part whose organized constitution, and that texture whereby it operates, he cannot possibly know, is alike hard as to make a part he knows not how is made." (Dated 1668, Locke 36, Sydenham 44 years old.)

We may leave Locke to the philosophers; as to Sydenham, any one who will be at the pains to read his works carefully will find that he never rises above this medical philistinism. Harvey, Willis, Highmore, and all who were truly great in seventeenth-century English medicine had no significance for him; he knew next to nothing of the science of his time; he was extremely unfair to his brother practitioners, men whose practice in the main was as good as his own,—his is one of the most overrated reputations in medicine.

As far as the science of medicine is concerned one is tempted to say he had no relation; he probably knew less of seventeenth-century science than any physician whose name has come down to us. It is not without significance that the name of Hippocrates is always on his lips; the simple art which was a merit two thousand years before his day, when it meant a rejection of the word-play of the philosophers, was an altogether different matter in the blooming science of Sydenham's time. The fact that his reputation lasted up to the date of the formation of the Sydenham Society is suggestive in relation to the history of English medicine; the fact that since the days of Lyell, Huxley, Tyndall, Darwin and Spencer we have heard much less of Sydenham and of the Hippocratic method is equally suggestive. A study of the cause of his waxing and waning fame would include a thorough study of the history of English medicine. Let Sydenham speak for himself as to his art:

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[1] A course of four lectures delivered by invitation before the Harvard Medical Alumni Association, February, 1898.

"The only causes that can be known to us, and the only ones from which we may draw our indications of treatment, are those which are proximate, immediate and conjunct.

"As it is clearly impossible that a physician should discover those causes of disease that are not cognisable by the senses, so also it is unnecessary that he should attempt it.

"The brain is the source of sense and motion. Yet no diligent contemplation of its structure will tell us how so coarse a substance (a mere pulp, and that not over nicely wrought) should subserve so noble an end."

Having given these extracts as evidences of Sydenham's conceptions of medicine let us look to his practice, and first, in small-pox upon which so much eulogy has been spent. The most striking fact in this connection is the poor description; he is really tripped by his notable unfairness to his fellow practitioners; in the interest of "cool treatment" he gives a picture of the disease which lacks all vitality in color and drawing. Read it as carefully as possible and you will see that he gives only the coarsest characterization of a discrete and confluent kind; there is no account of the numerous complications, everything not included in his meagre and too favorable account of the disease is caused by the bad treatment of other physicians, yet Dr. Whittaker at the same time or a little earlier gave as good or as poor a description and the same "cooling" treatment. Sydenham regarded the ptyalism and the diarrhea when occurring in this disease as nature's efforts at relief, and with no apparent suspicion of a cause other than what appeared by his superficial observation he forms his therapeutic methods according to his guesses. All the phenomena suggest to him, as he puts it, the "idea of inflammation; of an inflammation specifically different from all others; of an inflammation both of the blood and humors. In cleansing herself of this Nature is at work during the first two or three days, striving at the digestion and concoction of the inflamed particles, with the intention of afterwards discharging them upon the surface of the body, for the sake of maturation, and finally of expelling them from her boundaries under the form of little abscesses.

"With these premises two indications of treatment present themselves: (1) The ebullition of the blood must be kept to a regular rate, so that it neither hurry over the work of separation too quickly and too violently, nor yet check it by any torpidity of movement. Still less must it work it out insufficiently. (2) The little abscesses, or pustules, must be carefully kept up, so that they may go through their proper stages, void the matter that they contain, and, finally, themselves disappear."

It is difficult to find in Sydenham's conceptions anything constituting the wonderful advances attributed to him in this disease; his hypotheses are all as old as the Arabians; his descriptions are not anything beyond the best of his time, and his physiology and anatomy are far below the level of a number of his contemporaries. As to complications, he refers incidentally to inflammation of the eye, but he gives no description and merely speaks of it as an indication of a violent inflammatory nature of the disease which should be met by a "blood letting" about the "one-and-twentieth day"; he had a notion of having the patient out of bed a few hours every day, and he pushed this idea to a decidedly dangerous limit in small-pox, scarlatina and rheumatism.

He delivers himself as follows as to "Intercurrent Fevers": "Now, since the different species of these fevers originate in peculiar inflammations of the blood, different for different diseases, I make my whole practice turn upon its regulation and moderation; I vary my method with the ailment, and apply to the elimination of the morbific matter that treatment which experience has appropriated to each kind of disease. The full and perfect practitioner is he who knows how the febrile matter enters the system and how it is to be ejected, whether by bleeding, by sweating or by purging. This is the result of careful consideration of the phenomena of its therapeutics" (page 242, Vol. I).

Of venereal diseases, he says: "A century ago, however, it took the form of a virulent gonorrhea, and this is the form it takes now. In such cases, the most manifest symptom is the presence of a small ulcer, commonly called a 'shanker,' on the private parts, this being the first sign of the disease. In case, however, the virus be not sufficiently eliminated by means of the gonorrhea, the mass of the blood is quickly tainted and pervaded. Beware of astringents in gonorrhea; they cork up the virus in the system, and lues is the result."

In his old age he shows at his best in his treatise on dropsy; he regarded the cause as a "weakness of the blood" which "is not able to convert into its own substance the matters taken as aliments from without." He begins to gain an idea of the importance of anatomy; his favorite ideas of the "ebullition of the blood," of concoction, putrefaction, etc., do not aid him in explaining the phenomena of this "cold disease," and he observes "I will state plainly, that, as far as I can discover by the most attentive thought, and from what I observe in practice — the touchstone of those who profess medicine — it is very necessary for a physician to know well and thoroughly the structure of the human body, so that he form true ideas concerning nature, and concerning the causes of certain diseases. How can one who knows not the structure of the kidneys, and the ducts that lead from them to the bladder, see his way to those symptoms which arise from a calculus, impacted either in the pelvis or the ureters? A surgeon should know anatomy equally, otherwise how can he in his operations avoid vessels and other parts which he should keep clear from; and which, if divided or injured, will kill the patient? Nay, he cannot even set a limb, or reduce a dislocated joint to its natural position unless he have curiously inspected and well understood the bony framework of the body which is called the skeleton.

"So necessary is this knowledge that he who wants it is like a man fighting blindfold, and a mariner without a compass. Moreover, the knowledge is easily obtained; and in comparison with many other more difficult studies, may be reached by a short road. It may be learned well and thoroughly by dissection —

either of human bodies or the bodies of brute animals; and that easily, and by men whose wit and judgment are limited. Nevertheless, in all acute diseases — and two-thirds are acute — we must fairly own that there is in their nature, θειοη. τι some specific property which no speculations deduced from the contemplation of the human frame will ever be enabled to discover and exhibit. Hence I think that all which was meant by Hippocrates was this: That men should not spend their labor in dissections only, but that they should rather promote the art of medicine by the diligent observation of natural phenomena, especially the juvantia and lædentia. I do not for an instant believe that he undervalued or depreciated a general knowledge of the structure of the human frame. . . . So much is human genius limited by the limits of human nature, that we must know what our five senses teach. Prudent, a man may be; a philosopher, in the most august sense of the term, no man can be. The whole philosophy of medicine consists in working out the histories of diseases, and applying the remedies which may dispel them; and experience is the sole guide. This we obtain by observing (as noted elsewhere) the method that right reason dictates — the suggestions of common-sense rather than of speculation."

We may get a good idea of the manner in which Sydenham impressed the regular practitioners of his time from a treatise by Henry Stubbe, entitled "The Lord Bacon's Relation of the Sweating-Sickness Examined in a Reply to George Thomson, Pretender to Physick and Chymistry, Together with A Defence of Phlebotomy, In General and also particularly in the Plague, Small Pox, Scurvy and Pleurisie. In opposition to the same Author, and the Author of Medela Medicinæ, Doctor Whittaker and Dr. Sydenham, etc., by Henry Stubbe, Physician at Warwick." London, 1671.

The gist of Stubbe's book is something as follows: George Thomson, who pretends to dissect bodies of those dead of the plague, to study in short *à la* Bacon, this objective side of the matter, is an ignorant apothecary, with a purchased degree, who makes no mention of, and pays no respect to, all the records of the Greeks and Arabians; he is no artist. Sydenham, with his old nurses' tales as to the treatment of small-pox, is of the same class; he is too ignorant of medical literature to realize how foolish he appears in gathering these precepts of popular practice and presenting them to our learned profession as a novelty, although Dr. Whittaker has said it all before him. Both are victims of the prevailing appetite for novelties, created by that arch innovater Bacon, whose character was no better than it should be. As to the discovery of the circulation, I was surprised to find that the effects of blood-letting were just what, by Harvey's hypothesis, it should be, so that if our old principles were false our practice was just right, and I reasoned that if the circulation of the blood and other modern discoveries taught us the same practice we were already following it was useless; if, on the other hand, it contradicted our practice it was false.

In the course of a few pages Stubbe mentions the names of Lower, Highmore, Glisson, Needham, Willis, Riolan, Mœbius, Schenck, Blondel, Forrest, Becher, Simon Pauli, Regne de Graaf, Bartholin, van der Linden, Columbus, Spigelius, Vesling, Coyter, Vesalius, Fernelius, Malpighi, Pecquet, Reusner, Plater, Sanctorius; he is acquainted with their researches and practice; he quoted the embryologists as to the formation of the blood in the embryo; he disposes of Servetus's idea of the blood as the seat of the soul in a very creditable manner.

Let us endeavor to put ourselves in his place in judging Sydenham who rarely mentions a medical author excepting Hippocrates; who, as a fact, made no contribution to the science of medicine, and who, in his art, in spite of all the eulogies which have been lavished upon him, was not discernibly above, if on an equality with, the best of his time; who exaggerated in a most aggravating manner the errors which he *thought* he saw in his fellow practitioners; who ascribed in a very unjust manner all aggravations of diseases, like small-pox for instance, to their alleged false treatment, intimating strongly that with his improved method such aggravations never occurred — all of which we now know to be absurd; who, as Stubbe says, taught nothing of the dangerous complications affecting the eye, throat, lungs and intestinal tract in this disorder. Honestly, no doubt, in love with his own prescriptions, as absurd in their polypharmacy as the average of the time, squinting, perhaps, more than most physicians to popular and domestic remedies but making of them a jumble, as though he thought some of them must hit the case; neglecting all the fruitful suggestions which anatomy and physiology were at that time so richly furnishing; ignorant, arrogant, honest, narrow, a sort of Dr. Johnson in medicine, without his learning, confident in his one-sided conceptions of Locke's ideas; in short, a man who saw the outside imperfectly and guessed at the inside as freely as the rest of the profession; hiring Dr. Havers and Mapletoft, as Stubbe openly charges, in his lifetime, to do his Latin translations when Latin was the common tongue of the profession; who is always talking Hippocrates, and boasting of imitating him, forgetting or ignorant of all that had happened in the two thousand years between them. Putting ourselves in the position of the seventeenth-century practitioner, I think we might justly challenge comparison between the great Sydenham and the unknown Stubbe and, as far as medical matters are concerned, find as much to admire in the one as in the other.

Sydenham and Stubbe were both in error. The former, no doubt influenced by a praiseworthy feeling of liberalism, applied his common-sense to problems which it was incapable of solving; his immense confidence in his views as to the art of medicine led him to an almost complete neglect of the science of his day — he shows this incidentally by his absolute confidence in Hippocrates as a model. As we have seen, there was nothing more than the art possible for Hippocrates; there was no science of medicine; but a full century after Vesalius there was no excuse for Sydenham's ignorance and indifference, not even the excuse of custom, for the best men of his time were continuing the noble work of Harvey.

To argue that an attempt to use the science of his day might have resulted in errors in practice, that it might have led him to false hypotheses, is like criticising the mistakes of Tyco Brahe, Kepler and Galileo, though they led up to Newton. But what did Sydenham's conservatism amount to? It merely resulted in his using the worn-out hypotheses of the Arabians and the aphorisms of Hippocrates: his observations were as superficial as though made in the time of his great master. "I am writing histories, not solving problems," he says; but since the days of the ancients problems had been stated by Vesalius, by Harvey, by Willis, Glisson and a host of earnest students, of which the best interests of the science of medicine demanded a solution. The reputation of the English Hippocrates can only be preserved by ignoring all the progress which our science had made during the two thousand years which had elapsed from the time of the real Hippocrates. If Vesalius and his followers and Harvey and his successors are worthy of honor, Sydenham deserves less of a place than has been accorded him in our annals. Sound progress in the art of literature has been favored by an improved, historical basis for criticism; probably progress in the art of medicine will be aided by a reversal or a change in many of our past opinions.

Stubbe's error was different. Sydenham idolized his common-sense; Stubbe made an idol of conventional, professional learning; his estimate of Harvey's great discovery shows that he had no real appreciation of the science of medicine. In Paris at this epoch lived Guy Patin, one of the most spirited and gifted of the physicians of his day. His name is chiefly preserved by his charming letters which exhibit an intense humanity, a sympathy with all that was grand in French Protestantism; he was a tender father, a proud and faithful citizen, a devout man in the best sense, but his medical philistinism was as narrow as that of Stubbe's; he simply hated antimony and the Jesuits' bark; he would hear nothing of the circulation of the blood; he adored Fernelius and Riolan; he worshipped the classics; he wanted nothing more in practice than bleeding and purging. Stubbe and Patin were of the same medical stripe; neither had an idea of the vital meaning of the facts of the science of their day as they concerned medical practice or medical teaching; they were up to date in their information, but they were as much philistines as Sydenham in all that related to progress; none of them seem to have had a notion of the grand movement by which the increase of science was crowding out the dogmas which had so long cursed our profession.

All this misunderstanding was not confined to the seventeenth century; only a little more than a quarter of a century ago Dr. John Brown treated of Locke and Sydenham in a manner that almost as completely ignored the existence of a science of medicine; he held up Hippocrates as a practical model to the physician with the same good faith in which he accepted Dr. Adams's ideas as to medical history. He eulogized Sydenham as a pattern of medical virtues and in so doing he exercised an injurious influence, great, since it was proportioned to his charming art. As a contrast, in 1877, nearly at the same time, Virchow wrote as follows: "Thirty years ago the Hippocratic method was still spoken of as a something so elevated and so important that nothing more holy could be conceived of. To-day it must be said that this method is destroyed almost to its root."

When Virchow wrote that the Hippocratic method was destroyed in Germany, he described the result which the development of the science of medicine had produced; he, no doubt, had a truer admiration of Hippocrates, in his environment, than many who made that name a shibboleth for simple empiricism. But the method of Stubbe and Patin were not covered by the term "Hippocratic"; they were learned in the science of their day, yet, as we have seen, their relation to medical progress was hardly more sympathetic than that of Sydenham. The latter would have carried medicine back to the epoch when it was a simple art; the former would have tied the profession to the present. We can look back to the seventeenth and eighteenth centuries and see the facts plainly; a retrograde movement was hardly more to be dreaded than a static condition; the former might, carried to a certain extent, produce a reaction, the latter meant no movement. If the retrograde movement has been destroyed "almost to its roots" how are we related to the conventional and traditional views which tie us to our present?

Let us attempt to answer this question by a brief sketch of the development of modern embryology and its relations to medical methods and medical progress in Germany.

At the very beginning of the seventeenth century, the great teacher of Harvey, Fabricius ab Aquapendente, began in earnest the modern study of embryology; Spigelius, Harvey, Needham, de Graaf, Swammerdam, Leeuwenhoek, Ruysch, Havers and Malpighi continued his work to the beginning of the eighteenth century; then the movement received something of a check during the controversy of those who debated whether the embryo was præformed complete in all its parts, in the ovum, or whether the parts were developed from a simple germ contained in it. Casper Friedrich Wolff solved the question, and, overturning Haller's and Leibnitz's views of the existence of the præformed 'animalcule,' he made modern embryology a possibility. Such were the results which followed Wolff's demonstration of the formation of a complete organ from a blastodermic layer; it was one of the most striking medical achievements of the eighteenth century. Wolff died at the end of the century and it seemed as if his great discovery died with him. In 1806 Oken published a similar account without knowing the work which Wolff had accomplished before him. Thus it is perfectly evident not only that the profession took no notice of the work of Wolff, but that even the special workers in embryology had overlooked it. Hunter's work made as little impression upon the medical profession in England. Sömmering found an appreciative student in Goethe but not in the profession (in passing, it may be said that the scientific connection of Goethe and Sömmering offers much of interest to those who wish to gain a thorough understanding of the many-sided poet and philosopher). Pander did all in his power to call attention to Wolff's merit, and then came the great Carl von Baer, one of the greatest names in the history of the sciences of development. Müller, Wagner, Wharton Jones, Allen Thomson, Valentin, Burdach, Prevost, Dumas, Coste, Rathke, Reichert, Bischoff and their co-workers formed a noble line leading to the innumerable workers of our own day.

Now if we take any epoch in this highly important movement, intimately connected as it is with our underlying sciences of anatomy and physiology, we shall find that medical practice and medical teaching were as little related to it as the medicine of the latter half of the seventeenth century was to the discovery of the circulation or to the embryological work of that day. This is not saying that medicine gained nothing. After Schwann had shown that the tissues were made up of cells, an important fact derived directly from embryological research, his notions that they were independently-formed elements were corrected by Reichert and Kölliker, who established what then was regarded as a universal truth, that all cells were descendants of parent cells. Then, Virchow, accepting this discovery, applied it to pathology; with the cellular pathology the medical profession to a great extent rested as far as the application to the teachings of embryology are concerned. Medicine was made immensely more scientific, particularly in Germany, but with all her research, her laboratories and her scientific accumulations, has she made anything like the improvements in methods, particularly of the teaching and practice, that might rationally be expected to follow the development of embryology? No one can doubt, who is at all conversant with embryology, that it has created an entirely new conception of the study of anatomy. Tiedman demonstrated this fact before most of us were born, in his sketch of the anatomy of the brain; he showed how to make the incomprehensible comprehensible; the same statement applies equally to the anatomy of the eye, to all the viscera, and, in fact, to the anatomy of the body in general. Then embryology adds immensely to our understanding of innumerable enigmas connected with the correlation of parts of our anatomy. Sympathies and associations in diseases which form the standpoint of anatomy, as usually studied, were mysteries become plain when the associations of the forming parts are studied. These things being true does it not naturally follow that methods of teaching anatomy should have been wholly made over? Gegenbaur has said that no simple collection of facts such as anthropotomy or zoötomy furnishes can be called scientific; but a history of the formation of the parts and the many comparisons which they facilitate, together with the principles furnished by which the isolated facts may be ordered, furnish scientific relations of the utmost importance; these make anthropotomy or zoötomy scientific. This being allowed, it would, it seems to me, follow that the German student of medicine should learn the *methods* of zoötomy upon the plentiful material which the domestic animals furnish; that complexities of the developed organism should be made plain by simultaneous study of their formation; that histology and histological methods would be naturally taught in the process and, incidentally, that the saving of human material should enrich the departments of topographical and surgical anatomy. The improvement might not follow the lines we have sketched but something of the sort would probably have been almost as fruitful for the profession as the undoubted advance which has resulted from the establishment of cellular pathology. It would probably have aided the application of that great discovery. But as no German school has attempted such a change in its methods of anatomical teaching we may be mistaken, and nineteenth-century medicine may not, like seventeenth and eighteenth century medicine, be living in close contact with a mass of scientific material which it does not fully use as reason and science would seem to show they might be used. If, however, nothing more than existing traditions and conventionalities stand in the way of some such change they are influencing us as they influenced Stubbe and Patin in the seventeenth century; surely changes as revolutionary have been made in teaching geology, botany and other disciplines; in some universities indeed something like these methods are used by students of psychology in gaining a knowledge of the structure and function of the brain.

Almost all medical historians have alluded to the ultra conservatism of our profession as Sprengel has in the following quotation: "But alas! it has been the fortune of our art to be almost the latest among all departments of human learning to be illuminated by the beneficent beams of enlightenment." It is our purpose here merely to throw out suggestions; a proper discussion of many statements made would occupy more time than we can devote to any of our talks; here, then, may we suggest that if a germ of truth is contained in any of these ideas the scientific study of medical history is one of the most powerful means for furnishing us an estimate of it and for directing us in the cultivation of it.

Medicine and astronomy are about the only sciences with histories reaching back to the golden age of Greece; how different their histories make the development of these sciences appear; scientific facts have been gradually added to medicine in a manner so isolated and separated that they have floated for a long time on the great stream of dogma and tradition before enough of union and coherence has been established to furnish material for rational deductions. Astronomy, on the other hand, has often been presented with an abundance of great observations, sources at once of the most important and far-reaching deductions. These facts of development cannot be changed, but extra effort in the study of our history might enable us by conscientious effort to acquire and establish principles much sooner than in the natural course of events they would come to be accepted; these attempts would aid the establishment of medical logic, and directly favor the advance of practical medicine.

There are numerous illustrations of this statement, but one striking one, which will excite the astonishment of the future historian, occurs to me in a question which for many years has agitated what is, I think, the most scientific portion of modern medicine; I refer to the question as to the causation of myopia among the opthalmologists. Monograph after monograph has been written to prove this, that or the other hypothesis as to the causation of myopia; the lives of hundreds have been made miserable by the insistence upon notions derived from the acceptance of this, that or the other hypothesis of causation, and by the exaggeration of this, that or the other accompanying symptom or condition; schools have been accused of causing what in all probability they simply aggravate, since school life happens to coincide with the period of life in which myopia develops; but it is perfectly obvious that this statement of the question is one-sided and illogical. The question was stated in its present form for the reason that the trouble was prevalent in Germany and it interfered considerably with the development of the German army. The question from the first should have been, What causes the variability of the human eye? Myopia is but one phase of this variability; daily practice and the common but neglected annals of the manufacture of glasses would show that the increased use of glasses is of all kinds, convex and cylindrical as well as concave. Myopia is but one phenomenon of the variability of the human eye among civilized races. It is evident that to the question thus stated entirely different conceptions of causes would be formed; mechanical causation is at once excluded almost altogether; the same statement is true as to the exercise of the functions of the organ, unless all physiological doctrines are to be thrown overboard; but exclude these causes and you exclude the mass of primary causes. The variability of the eye then bebecomes probably included under what Darwin has treated of so luminously as secondary variations and the history of the variations of the lobes of the cerebrum; the consequent variations of the orbit, the resulting changes thus caused in the parts which go to form the globe shed a flood of light on the matter. Incidentally we are comforted by the assurance that as a secondary variation it is fixed within limits which it has not progressed beyond in several thousand years and probably will not in the next hundred thousand. But we have gone beyond our proper limits in treating of a solution of this question on this occasion; our purpose was to call attention to an illogical statement of a question, to a partial statement rather, and to insist that such statements often defeat the solution; the knowledge of the laws of the cycles of planets could not have been deduced from a statement which presented the cycle of one planet as subject of the solution. We have chosen a striking example, but modern medicine presents many such half-stated problems. Scientific study of medical history is the most direct and most valuable means of founding a medical logic that will help us in correcting this too natural tendency.

There is one other subject connected with practical medicine which will illustrate another benefit which we may hope to derive from a study of medical history.

The marvellous advance of bacteriological science has made its relations a matter of serious thought to the profession at large. Will the sudden influx of new methods and new material cause a lack of balance, so to speak, resulting in the neglect of even more important researches? Many have thought so; many fear the results upon practice; from such fears grow prejudice and hostility. How reassuring is the study of our history, which displays the value of every increase of science and which teaches us plainly that any interference with symmetrical professional development should be met by a more active and thorough cultivation of neglected truths rather than by unscientific prejudices against new truths.

We have tried to show that medical history as it now exists contains many misstatements and misconceptions; that these not only do injustice to our greatest benefactors but that they also favor a false regard for those whose reputations have been for the most part chance products. We have regarded these erroneous judgments as signs of an undeveloped condition of medical history, which is properly a branch of the science of medicine; that as such it is valuable as an antidote to our natural conservatism and an addition to the body of science which is destroying old dogmas and traditions; that it is a natural source of improvement in logic which will directly lead to a better statement and a readier solution of many medical problems; that it also is a natural corrective of lack of balance in our development and that in this relation it is highly important in these days of rapid growth.

If medical history is a branch of medical science, as general history is a branch of general science, it is surely neglected; but the practice of medicine is related chiefly to the latest acquisitions of the sciences of our own day. There is but little in it which naturally suggests historical methods, as there is in the practice of law, for instance; hence *it* more than any part of our science demands the fostering care of those who have the higher interests of the profession in their hands, interests often lost sight of in the cares and struggles of everyday life and practice.

Original Articles.

CORRECTION, BY OPERATION, OF SOME NASAL DEFORMITIES AND DISFIGUREMENTS.[1]

BY GEORGE H. MONKS, M.D., BOSTON.

It is not my intention to take up the time of the Society by reading a long paper which pretends to cover the correction of all possible deformities of the nose by operation. I propose simply to call your attention to a few of the ordinary deformities and disfigurements, and to briefly refer to some cases which illustrate the results obtained by certain operative procedures, some of which procedures are new and some old.

It is hardly necessary, I think, for me to dwell on the desirability of doing such operations. After considerable experience I have become convinced, as probably most of you have, that few patients suffer more of mental discomfort than the unfortunate possessors of some unsightly disfigurement on the face which attracts constant notice, few are more solicitous for any operation which promises relief, and none are more grateful for the slightest improvement in their condition.

The first subject I shall speak of is

VENOUS AND CAPILLARY CONGESTION OF THE NOSE,

what is known as "Red-nose" or "Toper's Nose."

One meets with all degrees of this form of passive hyperemia; but the variety which is permanent, and especially that kind which is associated with numerous visible and arborescent vessels, often reaching well back upon the alæ, is usually very annoying to the person affected, especially if he be of a sensitive temperament, and often prevents his getting employment on account of a supposed alcoholic tendency.

In such cases much can be done in the way of treatment, by destroying the little vessels by ***scarification*** or ***electrolysis;*** but in order that the effects shall be permanent the treatment must extend over many sittings and must be conscientiously carried out.

To properly scarify such a nose, it should be first of all thoroughly cleansed with soap and hot water; then firmly squeezed between the thumb and finger of the left hand, and a few minims of a weak cocaine solution injected. When the part is no longer sensitive to pain, multiple incisions should be made in different directions all over the affected area with a small sharp knife (see Fig. 1). These cuts need not be very long but should all be deep enough to divide the superficial vessels, whose trunks may often be seen through the skin. If the patient will keep in the house for a few days afterwards, the whole of the reddened area may be thoroughly scarified at the first sitting, after which the surface may be covered with cotton and collodion and the escaping blood allowed to dry and form a crust under it. If the patient, however, cannot keep quiet for some days, only a few of the largest vessels should be divided at a sitting. In any case the operation will have to be repeated several times, before a satisfactory and permanent result is secured. Though there is reason to believe that the continuity is restored in many of the divided vessels, yet the contraction of the fibrous tissue which forms in all the little incisions will at least prevent the part from returning to its former condition of vascularity.

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[1] Read before the Massachusetts Medical Society, June 7, 1898, and recommended for publication by the Society.

This congested condition at the tip of the nose can be treated equally well by electrolysis,— indeed, some surgeons prefer it, and claim that by its use less scar results than is the case when scarification is used.

HYPERTROPHIC ACNE

is a condition which is occasionally seen on the nose, and always interests the surgeon, though unfortunately few cases are induced to come to operation.

Some years ago a man with an enormous enlargement of the end and alæ of his nose, due to one form of this condition, came to me, asking for an operation to relieve his deformity. He stated that he was unable to get anything to do in the way of work, as everybody thought him a drinker, which he certainly was not. The whole nose, but especially about the end of it and the alæ, was greatly thickened, nodulated and reddened, with here and there acne pustules in all stages. All over this area little depressions or pits were to be seen, representing the openings of the sebaceous follicles, and from all of these long worms of sebum could be squeezed out. After thoroughly cleansing the parts, I split the skin and underlying tissue of the nose down the middle line for its entire length, from base to tip, turned back the two flaps to the sides and removed all the subcutaneous tissue I could get hold of. I then replaced the flaps and sewed them together. The alæ, which projected like two small cherries from the sides of the nose, were also treated in this same way, and so much underlying tissue was cut away that the nose was considerably diminished in size. Although the result was not so perfect as one might wish, it showed at least a distinct improvement, and the man was apparently perfectly satisfied.

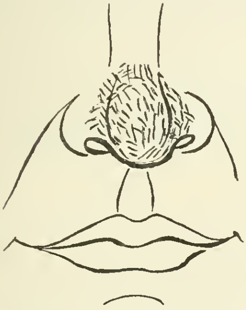
Fig. 1

Thorough scarification at the end of the nose.

Some time after this operation I described it to one of my colleagues, and showed him the case. He seemed much interested, and was pleased when, some months later, a similar case came under his own charge. He operated upon the man by the procedure which I had employed. Imagine his disgust, however, when, soon after the operation, the flaps sloughed! I fancy he had been more radical in his operation than I should have dared to be, and did not leave enough tissue for his pedicles. In time, however, the dead flaps separated, and left the nose without any cutaneous covering, the raw surface granulated, and finally cicatrized; and the man was ultimately glad to possess a small, thin, white nose (even if it was nothing but the framework of a nose, covered with one enormous scar), in place of the large, reddish, nodulated organ which he formerly had, and he (who, by the way, thought that the sloughing process had been intended as a part of the operation), pronounced the result a complete success! Referring to the result of his operation, my colleague suggested that the best treatment for these cases was probably, after all, simply to pare them down with the knife to the desired size and shape, and leave the raw surface to granulate. I should seriously consider doing this very thing if another of these extreme cases should come to me, only I should certainly prefer to cover the raw surface with skin grafts rather than to leave it to granulate.

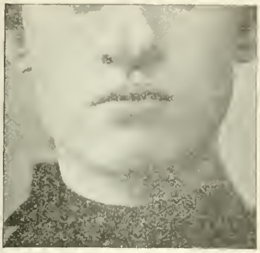
Fig. 2.

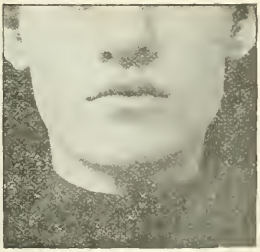
Fig. 3.

BIFID NOSE.

This is a congenital condition, though a rare one. It would appear in these cases that during the developmental period of life the two halves of the nose fail to approach sufficiently near each other in front, and for this reason a long vertical depression remains in the middle line. This depression is permanent, and causes a very noticeable deformity. It of course belongs to that large group of malformations known as "defects in the median line of the body."

Some years ago I operated upon such a case. The patient, who was sent to me by Dr. Gilbert N. Jones, then of Gloucester, was a young girl of fourteen years (see Fig. 2), who had always been particularly sensitive about the deformity; her acquaintances having done their best that she should not forget it. I removed an elliptical piece of skin and underlying tissue from the depression, brought the two sides together, and united them with buried and superficial stitches. The result was very satisfactory, for instead of the peculiar double-pointed nose (see Fig. 4), which attracted so much attention wherever she went, she now had a nose that was normal in appearance, except for a slight scar in the median line. (See Figs. 3 and 5.)

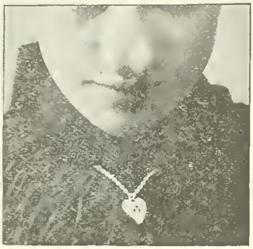

Fig. 4.

DEFORMITIES DUE TO OLD INJURY.

We frequently meet with noses deformed by injury in which the displacement occurring at the time of the accident has been allowed to remain unreduced. The appearance of such injured noses naturally varies; they may be bent, twisted or depressed, or there may have been loss of substance. Probably the commonest form is that in which there is a certain deviation of the bridge to one side or the other. The upper or bony part of the bridge may deviate, or it may be straight while the lower or cartilaginous part may be deviated, or the entire nose may be pushed to one side or the other. Such conditions may be congenital, but they are far more frequently due to some blow or fall. While in certain cases the nasal bones are undoubtedly fractured, and perhaps also the septum, I think it probable, judging from many of the cases I have seen, that the cartilaginous part of the nose is quite frequently torn away from the nasal bones, for in many cases where the nose has been injured we later see a bunch, indicating probably a new bone formation, on one side of the nose at a point exactly where the bony and cartilaginous parts should join.

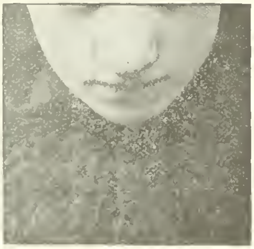

Fig. 5.

I have operated upon one such case by chiselling off the little bony hump through a small incision in the skin at one side of it. The patient expressed himself as pleased with the result. Although the procedure was satisfactory in this special case, I felt that it would not do in all cases, for one meets with many of them where the bony projections on the bridge are so large that they cannot be cut away without making very large incisions, and also running the risk of opening into the nose and thus leaving a permanent hole through the bone.

In seeking to discover some means of fracturing the bony bridge of a nose without bruising or cutting the skin, I devised a method which has worked very well indeed. After the patient is under an anesthetic a small incision is made just beneath the tip of the nose, its axis being continuous with that of the columna. Through this incision the points of a small pair of blunt-pointed scissors are inserted. It is now found that by opening and closing the scissors laterally so far as the limited size of the incision will allow and pushing them upwards the points of the scissors can be made to travel in that direction, and a narrow pathway or, more properly speaking, a long flat tunnel is cut in the tissue between the skin and the bridge of the nose. This subcutaneous tunnel is continued well up to, and upon, the bony bridge (see Fig. 7). The projecting bony parts are then depressed, to any desired degree and extent, by a process to which I should like to call your special attention; for by its means the bony bridge of the nose can be fractured without leaving in the skin over the bridge any sign of injury except two or three minute punctures. Two little instruments (A and B, Fig. 8), besides a mallet, are necessary for this operation, each instrument being about two or three inches long. Instrument A has a flattened extremity at one end and a handle at the other. On one side of the flattened extremity the surface is roughened like a coarse file, and on the other side is a minute depression which receives the point of instrument B. Instrument B closely resembles a very sharp-pointed lead pencil.

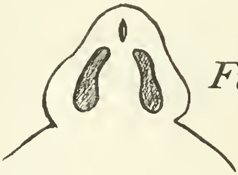

Fig. 6

Showing the incision just below the tip of the nose — being the opening of the tunnel leading upward to the area between the skin and the framework of the bridge of the nose.

Instrument A is inserted into the incision, just below the point of the nose, and is then pushed upwards along the subcutaneous tunnel already spoken of, until its roughened end is made to rest over the projecting part of the bony bridge which it is desired to fracture (as in Fig. 8). The point of the instrument B is then gently inserted through the skin into the little hole already referred to on the back of the flattened extremity of the instrument A. The two instruments, being then in the position shown in Fig. 8, are rigidly held, a few taps of the mallet on the end of the instrument B being sufficient to cause the fracture and depression desired at any point in the bony bridge. It may, in certain cases, be necessary to fracture the bone over a larger area. This of course can be easily accomplished by the same method.

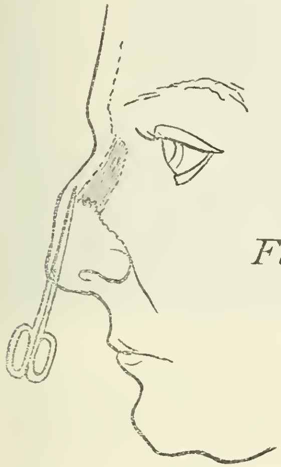

Fig. 7

Showing the method by which the subcutaneous tunnel is made with the scissors.

After the operation has been completed there remain on the bridge of the nose where the bone has been fractured only a few minute punctures, which eventually cicatrize and are not noticed. This method of fracturing the bony bridge of the nose is of course only applicable to cases where there is undue prominence confined to a limited area on the bridge, and is not to be used in cases where there is deviation to one side or the other of the entire bony framework of the nose.

The method of tunnelling under the skin by means of scissors is one which I devised some years ago for other purposes than that mentioned here, and which I have found most useful in many cases.

SADDLE-BACK NOSE.

Another kind of deformed nose is what is called "Depressed or Saddle-Back Nose." This may be due to injury or disease, and the operation selected for its relief naturally varies with the cause or the special deformity in each case.

One case of this kind, already reported at length,[2] and simply referred to here, was a young girl of sixteen, who, as a result of inherited disease, had a saddle-back nose of such an extreme degree that the bridge of the nose was sunken to nearly the level of the cheeks, and was covered with a dense scar. The end of the nose was tipped up and the nostrils looked forwards. On account of her deformity she could get no employment. In this case, for certain reasons too many to be mentioned here, I thought it best to dissect off the scar over the depressed bridge, and, after freeing the tip and nostrils by a horizontal cut directly backwards through the lower part of the nose, I depressed them downwards into place, and then covered the gaping wound and the raw surface left by the removal of the scar with a flap from the left forearm. The result was satisfactory; the flap grew in place and covered both raw surface and gap. The tip of the nose faced forwards instead of upwards, and the nostrils faced downwards instead of forwards.

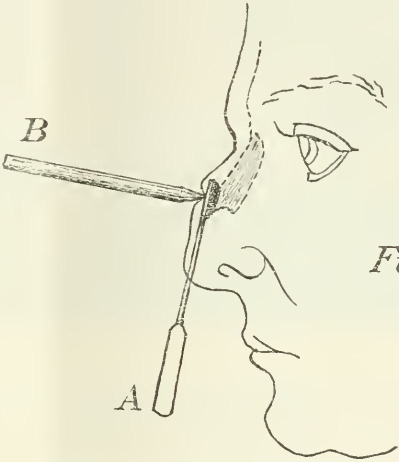

Fig. 8

Instrument A has been inserted into the subcutaneous tunnel until its roughened extremity rests upon the projecting bone. The point of Instrument B, having punctured the skin, is made to rest in the little depression on the back of Instrument A.

In another case, a young woman of twenty, with depressed nose from inherited disease, I inserted a platinum plate, which lifted up the bridge and gave perfect satisfaction until one day, many months after the operation, she was in sport peeping through a keyhole, when another girl gave her head a push, driving it against the door so violently that the end of the plate came out. This was of course followed by suppuration which necessitated the removal of the plate. In spite of this, however, the collapse of the nose was apparently not so marked as before the operation, and the patient declared that she thought the nose was firmer and that there was more bone in the bridge than before the plate was inserted. I did another operation on this nose, trimming a little here and there, and finally inserting a small bit of bone (from which the animal matter had been removed) which bone seemed to elevate the bridge somewhat, and which to this day — the operation was done three or four months ago — has given no trouble.

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[2] See Boston Medical and Surgical Journal, June 25, 1896.

A young woman of twenty was referred to me some time ago by Dr. Mahoney, of Medford. Two years previously she had a fall upon the ice, which had apparently caused a permanent depression of the cartilaginous bridge of the nose, giving rise to very unsightly depression in the lower part of the bridge, and a corresponding elevation of the tip of the nose. (See Fig. 9.) A celluloid piece (A, Fig. 10) was inserted through an incision below the tip, which raised the bridge of the nose, so that the line of the entire bridge was nearly a straight one, and the patient was very well satisfied. The appearance of the nose after operation is well shown in Fig. 11.

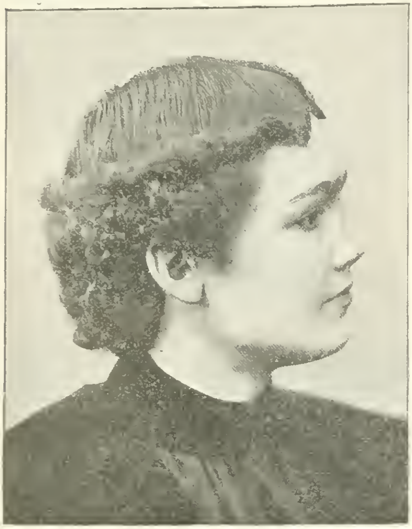
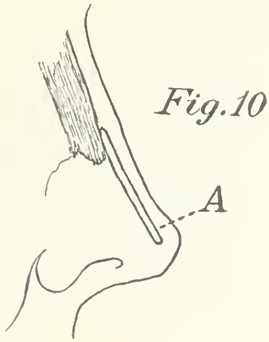


Fig. 9.



Showing where the piece of celluloid should rest in order to restore the lower part of the bridge.

The photographs from which Figs. 9 and 11 were taken are now in my possession.

In another case, a young lady, referred to me by Dr. E. H. Bradford, where there was a depression of the entire bridge, but especially of its upper part, I inserted a piece of celluloid high up on the bridge under the skin, having extended my subcutaneous tunnel higher upwards for that purpose. The operation was done several months ago, and the result has been an entirely satisfactory one. Not only is the depression, as seen in profile, far less marked than formerly, but the patient writes me that since operation she can breathe more freely through the nostrils than ever before.

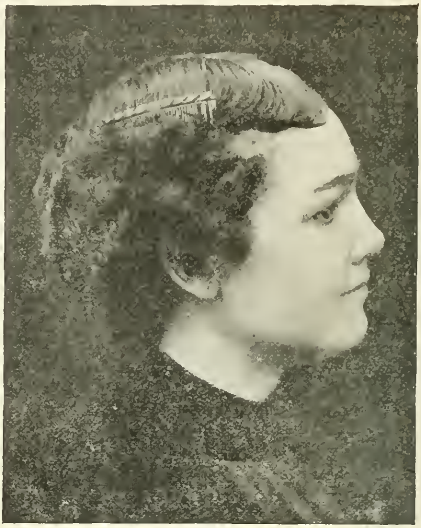


Fig. 11.

DEPRESSION OF LOWER HALF OF NOSE.

Occasionally one meets with cases where both the cartilaginous bridge and also the tip of the nose are collapsed. In such cases operative procedures are of no great avail; for unless some pretty extensive artificial framework is inserted under the skin there is nothing to support the parts. In one case of this kind where the tip of the nose and the cartilaginous bridge were greatly depressed as a result of disease, and the columna of the nose (that is, the narrow isthmus in the median line which connects the base of the nose with the tip) was wanting, I was able to supply a new columna from the skin of the arm, thus giving the man a somewhat more sightly organ, but I could not raise the tip and keep it in position.

The plan has been advocated, and put into operation in a few cases, of inserting a large artificial framework to overcome a collapsed condition of the nose. Judging from the reported cases I have seen, the good results have not been sufficiently lasting to lead us to hope much from the operation, for the apparatus, which it must be extremely difficult to cover up completely in the tissues, probably acts as a constant irritant, causing chronic suppuration and necrosis, necessitating its ultimate removal.

In conclusion I would say that, while many cases of deformed nose are so extreme that nothing can be done for them in the way of operation, there are many others in which a distinct *improvement* may be brought about, which, though not always entirely satisfactory to the surgeon, is almost invariably appreciated by the grateful patient.

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ON THE VALUE OF LABORATORY RESEARCH TO THE CLINICIAN.*

BY HERBERT C. EMERSON, M.D., SPRINGFIELD, MASS.,
Pathologist of the Springfield Hospital, Springfield, and of the Dickinson Hospital, Northampton, Mass.

It is my purpose to call your attention to some of the methods of laboratory study of medical and surgical cases, and to emphasize the clinical advantages of general pathological work.

It is but a very few years ago that the busy general practitioner gave absolutely no attention to bacteriology, and almost none to pathological work. Save for an occasional examination of a tumor, physicians, as a rule, had no direct dealings with a pathologist. This is not to be wondered at, as laboratories were to be found only in connection with medical schools, the great hospitals themselves referring such pathological examinations as were important to the instructors in these schools.

Fifteen years ago, however, the discoveries in bacteriology gave an impetus to laboratory work which has steadily increased in power and scope and clinical usefulness. Continued examination and investigation led to new facts as to the cause and nature of morbid processes, and it soon became a necessity for the large hospitals to have thoroughly appointed laboratories as a part of their general equipment. Many of the smaller hospitals soon demanded the same outfit on a smaller scale, and so, within a few years, the general practitioner has been brought into very close touch with the work of hospital laboratories.

The one great end of all general practice of medicine, higher and broader than all others, is to relieve the suffering of humanity; and this is done, not in the laboratory, but by the physician, whenever and wherever opportunity presents itself. But as a means to this end, to enable the physician to make the correct diagnosis, to choose the successful remedy to relieve this suffering, the knowledge and assistance that laboratory investigation and research furnish is one of the dominant factors in successful scientific medicine today.

The most complete and painstaking clinical examination often fails to give us the definite information we ask, leaving questions like the following still in doubt:

Is this typhoid or malarial fever?

Has this patient a pelvic abscess, or chronic inflammation without pus?

Is this tonsilitis or diphtheria?

Answers to questions of this nature are in many cases determined by methods of study available only through laboratory investigation, which can be carried out only in pathological and bacteriological laboratories. This work really constitutes a distinct department of clinical pathology and bacteriology, and the catalogues of medical schools present courses of this character, both to graduates and undergraduates.

Permit me to quote one sentence from a recent address [1] by one of the foremost clinicians of our day, Dr. F. C. Shattuck, of Boston. "The day is not far distant when every large hospital must have its pathological laboratory, as much as its operating room, with a trained and well-paid head, busied as much with the solution of problems arising in the living, as with the determination of the cause of death."

In presenting this subject to you in the way in which I am about to do, I make no pretense of complete and exhaustive treatment of the subjects as they are taken up, but I do aim to place before you some of the methods that are available to-day in our study of disease.

Blood. One of the most recent, as well as one of the most interesting side-lights of medical knowledge has been developed through the study and examination of the blood.[2] Although an immense amount of work has been done along this line, it is only comparatively recently that such examinations have become common and essential to the diagnosis of various conditions. Not merely the estimation of the number of the red and white corpuscles, but the individual characteristics of these cells must be determined — their size, shape, staining capacity and structural composition.

The study of the numerous varieties of white blood-corpuscles, or leucocytes, has given rise to many new diagnostic factors in many diseases, while our more exact knowledge of the different conditions that the red cells exhibit, is of great value, especially in the so-called blood diseases. Doubtful anemias and the degree of anemia are quickly determined by a study of the red cells; and the more or less severe secondary anemias at once differentiated from the primary or pernicious forms. Cases which present glandular swellings as the important feature should always be subjected to a complete blood examination, which will definitely settle the question of the presence of either variety of leukemia and Hodgkin's disease.

Aside from the help obtained from the blood in this class of diseases, the condition of the blood in many other diseases has been determined, and affords valuable data for making a differential diagnosis. This assistance is gained through the knowledge of the number of leucocytes present, an increase being constantly present in many diseases. This increase is called leucocytosis, and must consist of an increase in the adult form of white cells, or the polymorphonuclear variety. The normal number of leucocytes in adult blood is about 7,500 cells to the c. mm., and while they are increased in various physiological conditions, we are interested chiefly in the increase in pathological processes. For example: the white cells are largely increased in scarlet fever, and are usually normal in measles and German measles. They are increased in pneumonia, and normal in typhoid fever. Many cases of meningitis present the same symptoms as typhoid fever, but the presence of the leucocytosis at once excludes the consideration of typhoid. Uncomplicated tuberculosis in all its forms presents an approximately normal count of the white cells, and if a meningitis is present its non-tubercular character would be at once diagnosticated by an examination of the blood.

This increase in the white cells is also always present in septic cases generally, and knowledge of this is of great practical benefit where deep-seated suppuration is going on, and the question is, Is pus present or not? Let me illustrate the value of this method of diagnosis by citing the following two cases which have lately been observed at the Springfield Hospital, in the service of Dr. R. H. Seelye:

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* Read at the meeting of the Hampden District Medical Society, Springfield, Mass., April 19, 1898.

Case I. P. H., thirty-three years old; bar-tender; was operated on December 1st, for appendicitis; large abscess was found and the wound drained. Blood-count before operation showed 14,000 white cells. Patient did well, but on December 6th, 7th and 8th the temperature rose, and patient complained of some pain. It was thought that there might be a pocket of pus below, and the advisability of opening up the wound was discussed. The blood-count, however, on each of these three days, showed a practically normal count of 8,000 white cells, and no operation was done. Under the free use of salines the temperature came down to normal, and convalescence has been uninterrupted.

Case II. F. N., thirty-one years of age, housewife. Entered the hospital with the diagnosis of pus tubes, which the symptoms and physical signs seemed to bear out clearly. The blood showed but 6,000 white cells. At the operation no abscess or pus whatever was found, but large, thickened tubes and ovarian hematocele on either side.

Examination of the blood for micro-organisms gives positive results in some cases, and it is probable that this line of work will receive more attention in the future; but in all cases in which we suspect malarial infection, search should be made in the blood for Laveran's organism, the plasmodium malariæ, and if carefully sought after may be often demonstrated, and a doubtful diagnosis made positive. Thayer,[3] whose brilliant and scientific study of malarial conditions renders his opinion invaluable, says: "The discovery of the parasites in the blood is the only diagnostic sign of malarial infection."

Typhoid Fever. The present laboratory methods of diagnosticating typhoid fever deserve a moment of special consideration. Ever since Eberth's [4] discovery of this bacillus as the true causative agent of typhoid fever, its identification has been a matter of considerable difficulty, and never of practical application. The difficulty lies in the isolation of the organism, owing to the very close resemblance it and its cultures have to the cultures of the bacillus coli communis, which is universally found in the intestine. Several new methods [5] for the cultivation of this organism and its differentiation from the colon bacillus have lately been tried, and with success, and it is now possible and practicable to make a diagnosis of this disease by isolating this specific organism from the feces, usually inside of forty-eight hours. Cultures may also be obtained from the urine [6] of the patient, and the bacilli may persist for a long period of time, — a fact of much practical importance in convalescent cases.[7]

Another most valuable laboratory means of diagnosis of this disease consists in the Widal reaction,[8] or serum test. The bacilli of typhoid fever are most actively motile organisms, and the serum reaction consists in the total arrest of their movements and their clumping together, when brought into direct contact with the blood or serum of a patient having typhoid fever, — the admixture being composed of one part of the serum, or watery solution of the blood, and 10 to 20 parts of the fresh culture of the bacilli in bouillon. This cessation of movement and agglutination is generally complete in from fifteen to twenty minutes, but it may require an hour or even longer. The use of this test is especially valuable in those doubtful cases of typhoid resembling grippe, meningitis, appendicitis, malarial fever and certain pulmonary affections. This reaction cannot generally be seen till at least the fourth day of the disease, and the fact that it may be observed for a varying number of weeks after recovery has served to somewhat discredit its reliability as a diagnostic factor. But in a given case of suspected typhoid, a positive reaction is a most valuable diagnostic sign, and the fact that it is constantly present in typhoid and absent in other diseases adds great weight to its value.

In a recent article in the *New York Medical Journal*,[9] 4,879 cases of typhoid taken from literature were reported, in which this reaction was tested, and positive results were obtained in 4,781 cases, or 97.9 per cent.

Diphtheria. In 1883 and 1884 the micro-organism known as the Klebs Löffler bacillus [10] was demonstrated to be the infective agent in diphtheria, and the experience of the years since then has not served to throw doubt on the accuracy of this discovery. The bacilli are easily identified through their morphology and staining properties, when examined from a sixteen to twenty-four hours' growth on blood serum. The cultures are obtained by rubbing sterilized swabs in the pharynx and then over the surface of the media.

It is generally recognized now that the diphtheritic bacilli may cause a very mild morbid process in the throat, as well as the extensive severe lesions. The nature of the disease in this last class is easily recognized, but it is absolutely impossible, in a large number of sore throats presented for treatment, to decide upon the character of the process, without a bacteriological examination. The pyogenic cocci, staphylococci and streptococci may give rise to exactly similar local conditions as the bacilli of diphtheria, and cases doubtful in character should always receive the benefit of this decisive test. The greatest danger of infection from this disease comes through the unknown exposure to the mild, unrecognized cases of true diphtheria. While I never would put off using the antitoxin in any urgent case I suspected to be diphtheria, until a bacteriological examination could be made, I consider this means of diagnosis most valuable in indicating the use of antitoxin in many cases in which it would otherwise not be thought of.

It is in daily evidence that the bacilli remain in the throat for a varying length of time after all symptoms of diphtheria have disappeared, and the throat is perfectly clean. Such cases should be considered, and are, sources of danger and further infection, as the bacilli persisting in the throat for three weeks after the disappearance of all symptoms [11] have been proved to be as virulent as at the height of the disease; and until the throat of a patient that has had diphtheria is proved to be bacteriologically free from the bacilli, such a person should not be allowed to go and come in society, and be a source of concealed danger.

Sputum. The examination of the sputum of patients suspected to be tubercular has long been a routine practice with many men; but I wish to emphasize the importance of this procedure, particularly in cases in which the slightest suspicion is aroused, and as early in the case as possible.

A young man of fairly good health came to me last summer, with the history of coughing up a very small quantity of blood on the day before, and again on the morning of this visit. He brought the specimen to show me, but said he did not think much about it, as he had always had catarrh. The specimen consisted of 20 c. c. of bright frothy blood, in which I found fairly numerous tubercle bacilli. The physical signs were almost nothing, and yet the establishment of the diagnosis at this early stage of the process was most opportune for the patient.

The very early diagnosis of tuberculosis means an immense increase in the chances for arrest of the process and healing of the wound, and the sputum should be examined as early as it is possible to secure it.

The bacteriological examination of all fluids and exudations in the body, occurring in all sorts of pathological conditions, gives us new insight into the etiology of morbid processes, and often affords us help when it is least expected.

The detection of the gonococcus, if present, in the discharge from a doubtful urethritis, in many cases of vaginal discharge, in purulent conjunctivitis in infants and adults as well, is of the greatest importance to the physician and patient, and may further serve to suggest the preferable treatment.[12] The bacillus of diphtheria does not confine its visitations to the throat and nose, but may also be found in pus from the eye, ear and vagina.

Examination of the urine and feces will frequently give results of positive value for diagnosis in cases otherwise obscure — tubercle bacilli, for instance, may be often demonstrated in these excretions in doubtful intestinal and genito-urinary disorders.

In cases of meningitis it is now considered practicable for purposes of diagnosis to withdraw some of the cerebro-spinal fluid by lumbar puncture.[13] In this fluid tubercle bacilli may be demonstrated, or in the epidemic cerebro-spinal variety the specific organism, a diplococcus, may be easily found.

Microscopical examinations of new growths constitute a large part of a pathologist's work, and yet in this field alone there is room for a great deal more study and investigation of value to both patient and surgeon. Routine examination of all tumors, large and small, is a practice not at all common, except possibly in the medical centres; yet without such routine practice most valuable information of early malignancy must occasionally escape the surgeon's notice. I have in mind two cases of aural polypi, in which nothing unusual was suspected at time of operation, yet the malignancy of the one and the tubercular character of the other established at once the real cause of symptoms that shortly appeared.

AUTHORITIES REFERRED TO.

1. Shattuck. Boston Medical and Surgical Journal, June 24, 1897.
2. Cabot. Clinical Examination of the Blood, 1897.
3. Thayer. Yale Medical Journal, January, 1898.
4. Günther. Bacteriologie, 1895.
5. Hiss. The Journal of Experimental Medicine, November, 1897.
6. Richardson. Boston Medical and Surgical Journal, October 28, 1897.
7. Richardson. Loc. cit., February 17, 1898.
8. Mallory and Wright. Pathological Technique, 1897.
9. Brille. New York Medical Journal, January 8, 1898.
10. Günther. Bacteriologie, 1895.
11. Stone. Boston Journal for Medical Sciences, vol. ii, No. 2, 1897.
12. Standish. Boston Medical and Surgical Journal, August 5, 1897.
13. Williams. Medical and Surgical Reports of Boston City Hospital, 1898.

A department for the treatment of hydrophobia by Pasteur's method has been opened at the Berlin Institute for Infectious Diseases.

Clinical Department.

LOCAL MUSCULAR WEAKNESS AS A CAUSE OF JOINT IRRITATION.[1]

BY ROBERT W. LOVETT, M.D., BOSTON.

In formulating what must be common experience to you all, I am anxious to insist upon a factor which has not yet found its way into literature to any extent, and which seems to me to play an important part in joint affections, especially in the late history of joint injuries and inflammations.

Joints must depend for their proper mechanical use not only upon the well-being of cartilage, synovial membrane, and ligaments, but also upon the tone and strength of the muscles controlling them. Strong muscles protect joints and render them less vulnerable, weak muscles deprive the joints of their normal support, increase the liability to injury and throw an undue proportion of work upon the ligaments and joint structures. I beg your consideration of some cases illustrating these points:

Case I. A case of synovitis apparently due to muscular weakness. A healthy young girl, sixteen years old, was referred to me in November, 1897, by Dr. W. L. Richardson. Six years ago she had wrenched her right knee while crossing the ocean and the knee was sore after it for a long time. She could walk upon it and was never confined to bed. It got better, although it did not entirely recover, and a year later she wrenched it again. Three years ago she sprained it so badly that she was in bed with it; slight sprains have been occurring ever since and have become more frequent during the last year. Two years ago she sprained the other knee and has had some slight sprains on that side which have also increased in frequency, but the right knee continued the worst and was more frequently injured. For the last few months pain has been present in both knees most of the time, but this pain has never been severe enough to suggest a dislocation of the patella or of the semilunar cartilages. It was aggravated by standing or walking and the patient was unable to walk one-half mile without severe pain. There is no rheumatism in the family and no personal history of any.

The girl was well developed, tall but slender; she walked with an unsteady swaying gait evidently due to imperfect flexion of the knees. There was no flatfoot or marked pronation of the foot, motion was perfect and there was no grating, the patellar reflexes were normal and there were no symptoms of any organic nervous disease. On examination the small size of the thighs was the striking feature, the calves were better by comparison, but were poorly developed. There was a moderate effusion in the right knee-joint with some thickening of the synovial membrane and a little tenderness. There was a slight effusion in the left knee-joint. It was obviously for these reasons not a purely hysterical affection, and I made the diagnosis of double synovitis due to constant traumatisms of the joints on account of imperfect muscular support. As the knee-joints when seen were obviously in a condition of subacute inflammation, it seemed to me that fixation was first needed to cure this irritation; the treatment therefore consisted of fixation by a ham-splint, with compression to the right knee-joint to prevent motion and cause the absorption of the fluid. Little or no walking was permitted, and douching with hot and cold water was begun in a few days; daily massage was commenced in about a week. In three weeks the effusion had disappeared in the worst knee and motion was gradually allowed by removing the splint for an increasing time each day. The muscles improved rapidly in firmness and size and the pain disappeared.

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[1] Read by title before the American Orthopedic Association, Boston, May 17, 1898.

In April, 1898, the patient reported that she had been apparently well for some weeks. She has had no pain in the knees, the muscles are firm and of average size, she can walk several miles without discomfort, and the contour of the legs has wholly changed. Whether the muscular disability was due originally to sprains or was the cause of them cannot be definitely determined. The history of the case led me to suspect that the muscular disability was primary, permitting the various sprains rather than resulting from them; certainly in November, when she came under my care the muscular disability was quite enough to be the cause of her symptoms.

Case II. A healthy young man, twenty-one years old, well developed but decidedly neurotic, fell in January, 1897, while skating and struck both knees; they were lame for some time, but apparently recovered. In April, 1897, his left knee began to be painful. May 17, 1897, he wrenched his left knee while playing ball by swinging the bat forcibly while his knee was bent. I saw him eight days later, he had had no treatment previous to seeing me beyond wearing an elastic knee cap. He limped badly and suffered much discomfort. At that time there was slight synovial effusion and tenderness over the patella tendon; there was also some bulging at the sides of the patella tendon. He could not fully extend the leg by active effort when sitting without extreme pain when a certain point was reached, although passively it was not painful. The atrophy of the left thigh was very marked, especially over the vastus internus. I made the diagnosis of slight synovitis of the knee-joint with probably bursitis of the deep pretibial bursa. A heavy flannel bandage was applied, the knee improved and later massage three times a week was given. In June he went to his home, in a western city, nearly well and was placed under the care of a surgeon there. He did well there, but a slight sprain brought back the symptoms in the left knee. In September, 1897, eight months after the original injury, he came to Boston to be again under my care. There was no longer synovial effusion, but much pain in active extension of the leg when a certain point was reached. There were no signs of present inflammation in the knee or bursa. After a short period of fixation, frequent massage to the leg was begun on the supposition that the muscular weakness was at least a very large factor in the disability. At this time he was conscious of numberless slight sprains to the joint, the result of unguarded motion. Gradually the daily accidents which caused pain diminished, and he could actively straighten the leg without much discomfort. Active exercises with weight and pulley were begun to develop the extensors and adductors of the thigh, and just as the muscles developed the pain diminished; he is now practically well and the leg is nearly as large as the other. The muscles are firm, but there is still slight grating of the joint. He can walk, ride a bicycle, skate and ride horseback without discomfort.

Here the condition seemed to be a muscular weakness the outcome of an accident, outlasting the inflammation by many months and yielding only to measures directed to the development of the muscles.

Case III. A boy, fourteen years old, of poor general muscular development, was brought to me in October, 1897, for disability in the left knee which caused a limp. He had always had a click in the knee in full extension, but three years ago he had wrenched the knee and it had been the source of pain and discomfort ever since. There had been no serious sprain at any time. On inspection the atrophy of the left thigh was very noticeable, the muscles were flabby and an inch less in circumference than those on the other side; the calf muscles, however, were the same on both sides. There was some synovial effusion, slight thickening of the synovial membrane, but no marked heat or tenderness.

When the boy extended his leg, just before full extension was reached, a click was felt, and the tibia was felt to rotate outward with a jump. This click was painful. An x-ray photograph showed no abnormality. This click seemed to be an exaggeration of the normal outward rotation which should occur as the joint locks in full extension. It seemed to me that the muscular weakness might be a factor in exaggerating this although the click was so marked that some congenital anomaly, probably in the semilunar cartilages, must have existed independently of any muscular weakness. The situation was explained to the parents who proved willing to act on the supposition that muscular weakness was the chief cause of pain and discomfort. The leg was first fixed and the synovitis cured and then massage and exercise given three times a week. The muscles are now nearly alike on both sides, all pain and discomfort have been absent for three months. The click is still present to a slight degree, but is not painful and seems only a very small part of what it was originally. Here was a joint apparently imperfect from the beginning, kept in a state of irritation by muscular weakness, and the congenital disability which, with proper muscular support, is not a source of trouble, became a troublesome and painful factor when the muscles were weak.

Here, then, were three cases which suggest the relation of muscular weakness to joint pain as in some instances that of cause and effect. They all show some points in common, a slight injury followed by complete or partial recovery, certain symptoms recurring after other slight injuries or spontaneously and then a gradual increase of these up to a point where surgical advice becomes necessary. The histories of all these cases are long, they stretch over months and the progress is discouraging to every one concerned.

That muscular atrophy occurs at once in connection with all joint inflammation is well established.[2] It seems from the history of these cases as if the inflammation may get well or nearly well and leave the muscular atrophy. Later the poorly supported joint may become injured again and again as the result of trifling accidents, or the continued lack of proper support, without the intervention of accidents, may cause the recurrence of joint irritability of a more or less severe type. Consequently, in a joint which is the source of trouble months after accident, when there are no signs of extensive chronic joint disease, an investigation of the muscular condition becomes of value.

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[2] Valtat: L'atrophie musculaire dan les mal. artic., Paris.

If there is primary chronic joint disease or inflammation, the muscles will of course be atrophied, but it must be borne in mind that what resembles chronic joint inflammation very closely may apparently result from muscular atrophy as well. This calls attention to the importance of limiting so far as lies in the surgeon's power the muscular weakness which occurs necessarily in connection with joint inflammations. If this is not done, the muscular weakness alone may become a source of joint irritability. It enforces the importance of determining when the joint inflammation proper has ended in order to begin upon massage and strengthening exercises. Fixation and bandaging continued beyond the time of necessity thus become not only unnecessary but harmful in that they promote and prolong local muscular weakness from disuse. At the same time imperfect treatment which fails to control the inflamed joint and to quiet the inflammation promotes muscular atrophy by aggravating the joint inflammation. If any joint injury is severe enough to require fixation, this fixation should be complete enough to be efficient while it lasts and should be discontinued as soon as the inflammation is over; if the joint injury is not severe enough to require fixation massage should find an early place in the treatment. In joint injuries, half-way measures have very little to commend them and are responsible for many cases of local muscular atrophy lasting indefinitely.

I have purposely left out the consideration of neurasthenic joints and joints affected by chronic rheumatic arthritis in this connection. It seemed simpler to consider first simple inflammatory cases as demonstrating the relation of muscular atrophy to joint irritation. But in these cases the relation is of even greater importance than in such cases as have been described above.

Reports of Societies.

THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

THE TWENTIETH ANNUAL CONGRESS HELD IN BROOKLYN, N. Y., IN THE HALL OF THE LONG ISLAND HISTORICAL SOCIETY.

(Concluded from No. 10, p. 250.)

SECOND DAY, TUESDAY, MAY 17TH.

DR. S. W. LANGMAID, of Boston, read a paper on

THE HOARSENESS OF SINGERS.

This is a disease of occupation in the same sense as writer's cramp, housemaid's knee, etc. It has peculiar characteristics which differentiate it from the ordinary hoarseness caused by talking. In order to properly understand the condition requires the widest knowledge of the whole region of the throat as well as of general pathology. The treatment requires less skill than the proper diagnosis and prognosis of the affection.

The symptoms are swelling of the nasal mucous membrane, enlarged turbinates and congested larynx. Occasionally there is absence of catarrhal affection. There is disability resulting from impaired muscular power of the glottis. The acute catarrhal condition may be superimposed upon long existing infection of the cavity by catarrh of the nose. Neuroses, anemia, constitutional defects, rheumatism, atmospheric conditions, etc., are predisposing factors. Weakness of the intrinsic muscles — the tensors, the adductors and the sphincters — always exists. The bending inwards of one or both cords, the divulgence of the posterior portion of the cord, and what is more constant, deflection of one or both cords, are conditions often noted. First remove inflammatory conditions, reduce swellings and remove stenosis, if it exists. Remove any deflected septum or septal spur that may be present. The glands in the posterior laryngeal space often interfere with singing in young persons. Inhalations of steam are beneficial for a dry and painful state of the throat. Strychnine may be employed in case of muscular weakness. Complete rest for the voice is most desirable. Attention should be called to the improper use of the voice in very young singers.

DR. J. EDWIN RHODES, of Chicago, read a paper on

SPASM OF THE TENSORS OF THE VOCAL CORDS.

Dysphonia spastica is a very rare condition. Dr. Mackenzie was the first to describe it, and he had seen only thirteen cases. The causes of the affection are an abnormal use of the voice and possibly a neurotic condition not yet understood. It is present in incipient multiple neurosis and is usually connected with some nasal affection. The symptoms appear on attempted pronation. The voice jerks when an attempt to pass from a low note to a high one is made, and there is difficulty in getting started. There is involuntary breaking in the speech. One of the peculiarities of the disease is that cocaine used in the nose relieves the spasm for some time. In two cases that have come under my observation, improper use of the voice was an element in the causation. In another instance there was a nervous strain present for several years. Disturbances of reflexes and hysteria are also elements in causation. The prognosis is very unfavorable. Local applications, strychnia, sprays, etc., are of no value. The best treatment is long rest for the voice, general tonics, such as iron, arsenic, iodide of potassium, electrical treatment, etc., which may give some relief. Astringent applications are occasionally of some value. The use of cocaine cannot be recommended. We cannot hope for a cure in any fixed line of treatment.

DR. SIMPSON spoke of the importance of this affection to those who gained a livelihood by the use of the voice. The fundamental cause of a singer's hoarseness is found in the fact that the human larynx was never intended for constant use in singing. Over-use of the voice is the primary cause of this condition. In regard to the proper time to begin the use of the voice, he said there was danger in beginning too soon and also in beginning at a too advanced age. Instances were cited illustrating the bad effects in both cases.

DR. MACKENZIE considered the unicoid or falsetto voice running up from a whisper to the falsetto, as he had been particularly successful in the treatment of these cases. He related the case of a boy of sixteen who had been troubled since puberty by his voice changing to falsetto. Examination revealed a nasal spur which caused difficulty in breathing, but this did not seem to account for the trouble. The larynx was pushed up one and one-half inches, and the muscles seemed to have contracted too much. By placing one finger over the Adam's apple and introducing the other into the throat the larynx was pushed into its proper place; then the boy was told to talk, which he did as well as ever. Muscular training will probably be the treatment of the future.

Dr. Delavan thought that anything that caused a relaxation of the system in general would also cause a relaxation of the vocal cords. Stammering is always worse when the patient is not feeling well. Cocaine should be strenuously avoided because of the alluring nature of the drug; it should be used only to carry a public speaker through in case of emergency.

Dr. Clarence C. Rice thought that singers affected by changes in the vocal bands should go for treatment only to those who understood vocal phonation. The condition could often be cured by proper voice formation. In the strain of intrinsic vocal muscles where the vocal bands were not approximated as they should be, he had not seen inaction or weakness of the posterior arytenoidei muscles.

Dr. F. W. Hinkel, of Buffalo, read the

REPORT OF A CASE OF LIPOMA OF THE LARYNX.

This patient, age fifty-five, was in excellent health in 1895. In 1883 she was conscious of a tumor at the back of her tongue and consulted Dr. Park who removed it. After some years there was a gradual return of the symptoms, and Dr. Park again removed a tumor smaller than the first. In 1894 another tumor was removed similar to the last. In 1895 the patient consulted me for a cough and difficulty in swallowing. She stated that her father had died of cancer of the face. From the left epiglottis a pinkish body projected, which was soft or doughy in consistency and varicosities existed at the root of the tongue. As there was some difficulty in drawing the loop through the snare, it was necessary to remove the growth in three pieces. It was dense and hard, and no bleeding accompanied the operation. Behind some fulness of the glottis remained. In 1898 she again consulted me for discomfort, and a tumor was found at the free edge of the epiglottis and bending towards the right. The left aryepiglottic fold was thickened. There was no involvement of the ventricular band. The growth had the appearance of a polyp. It was readily removed with forceps and scissors, and was found to be three-quarters of an inch in length. The epiglottis presented a curious appearance, the epiglottic fossa being filled with tissue similar to that just removed. The persistent recurrence of the tumors led to a microscopical examination. Dr. Wright, after making an examination, reported the case to be one of lipoma of the larynx.

Dr. Wright said that the first specimen was 45 millimetres long and 8 millimetres wide. In 1896 there had been but ten cases of lipoma reported.

Dr. John W. Farlow, of Boston, said that a patient came to his office with a growth protruding between his lips. The tumor dropped two and one-half inches below the vocal cords, was pedunculated and protruded outside his lips. The growth was cut off with the galvano-cautery and proved to be a pure lipoma.

Dr. Whitehill F. Kinkel read a paper reporting

A DEATH FOLLOWING IMMEDIATELY AN OPERATION FOR NASOPHARYNGEAL ADENOIDS UNDER CHLOROFORM ANESTHESIA, WITH REMARKS ON ANESTHETICS IN THIS OPERATION.

A boy, six years of age, never a mouth breather or snorer, complained of ear trouble and deafness. Examination revealed a moderate amount of lymphoid tissue in the vault of the pharynx. The attacks of deafness continued to recur, and when he was eight years old it was decided to operate. Chloroform was used, the mask being applied dry, and the chloroform being dropped on by an experienced anesthetist who was prepared for any emergency. The boy had a systolic murmur, which was probably not due to organic lesions.

Vomiting and spasm of the glottis occurred. Only one ounce of chloroform was used. The lymphoid tissue was found to be quite firm. Careful watch of the respiration and pulse was kept. A temporal pulse was observed. The operation was finished when, after about three minutes, respiration ceased suddenly. No pulse could be felt and there were no heart-sounds. Digitalis, strychnia and other drugs were given, and also hypodermics of ether, atropia and digitalis. Cold effusions were also tried. Artificial respiration was kept up for two hours without avail. No post-mortem was allowed. As the quantity of chloroform was so small, and there seemed to be no circulatory disturbance, the death seems to have been due to some nervous disturbance. Dr. T. Lauder Brunton considers neuroparalysis as the cause of death. The chloroform has a direct action on the respiratory centres.

In 1893 the medical press of Great Britain called attention to the great fatality attending adenoid operations. In 1896 Halloway tabulated 14 deaths under chloroform; of the 14 cases reported in 1895 that had occurred since 1892, 11 took place during operations upon nasal and naso-pharyngeal adenoids.

Of the 11 cases which Halloway reports, 6 occurred during the operation for adenoids alone, 3 during operation for adenoids and hypertrophied tonsil, and 2 for hypertrophied tonsil alone. In the last 2 cases death occurred before the operation was begun. In 4 cases death occurred before the operation; in 3 cases a few minutes after the operation was completed.

All the cases of death from chloroform anesthesia are not reported. In many cases enlargement of the thymus gland was observed. Brunton claims that spasm of the glottis, which occurs frequently in the administration of the anesthetic, is the cause of death, acting on the reflex inhibition.

In adenoid operations six deaths have been reported due to hemorrhage, and these were bleeders. We should avoid giving chloroform to patients of a lymphatic temperament. Ether should be used if a general anesthetic is required; or, if the operation is very short, we may use nitrous oxide gas.

We may note that statistics show an exceptionally high mortality from chloroform. Sufferers from adenoids belong to a constitutional type that are peculiarly susceptible to chloroform. The general use of chloroform in these cases is inadmissible.

Dr. Arthur Ames Bliss, of Philadelphia, read a paper entitled

THE RECURRENCE OF ADENOIDS AFTER EXCISION.

Out of three cases where there had been recurrence, the operation had been done from the region of the vomer in two instances. To prevent the return of the tumors, the best method was complete and thorough removal. Their return is usually due to incomplete operations.

Dr. D. Bryson Delavan, of New York, read a paper entitled

PRESENT METHODS FOR THE OPERATIVE TREATMENT OF PHARYNGEAL ADENOIDS.

In the surgical treatment of these adenoids two points are of primary importance: thoroughness and humanity. Thoroughness means the complete removal of the condition as any tissue left behind is unhealthy. Half-way measures are useless in both adults and children. As to the humanitarian side, we should employ, as far as possible, those methods which produce the least pain, shock and injury. The statement that this operation is not painful is incorrect. All the patients questioned during a number of years had agreed in saying that the removal of the adenoid had been accompanied by sharp pain. Cocaine may be used as an anesthetic if the operator is very skilful and has a steady hand. Four classes of instruments are generally used: 1st, the curette; 2d, the forceps (Gotstein); 3d, adenotome with plain edges; 4th, the wire loop or snare. The finger-nail should also be mentioned in this connection. The sharp spoon should not be used as it may cause hemorrhage. The Gotstein knife is very popular. If a general anesthetic is required ether is probably the most satisfactory; nitrous oxide gas is generally too evanescent in effect.

Dr. J. W. Gleitsmann said that he had read a paper a few years ago in which he had stated that four per cent. of the operations were followed by recurrences. He had noted recurrences of the faucial tonsil, and others had had the same experience. As to the use of an anesthetic, he used ethyl bromide extensively in his office, but at the patient's home he always had a general anesthetic administered.

Dr. Casselberry, of Chicago, used ether exclusively where a long operation demanded a general anesthetic. Bromide of ethyl might be good in short operations. If the anesthetic be properly given on an empty stomach there would be little nausea.

Dr. Wagner had used bromothine frequently in adenoid operations and had never had a death. It was both quicker and safer in its action than chloroform. In operating for adenoids he used a hook with which he pulled the growth down, and then with a special set of instruments that he had made he dissected everything out. He had seen no recurrences following this method; there was no bleeding and no pain.

Dr. A. B. Thrasher, of Cincinnati, thought the fatalities from the use of chloroform due to the method of administering it. He had seen a number of deaths due to an inflamed condition produced by this drug. The head should be lower than the body. Marion Syms emphasized this point. This position prevents blood from getting into the larynx. A blood-clot in the larynx causing blood poisoning from carbon dioxide gas may cause death. Ether should not be used in young subjects, as the bronchial tubes are small and there is danger of catarrhal pneumonia. Children often die after two or three weeks from the effects of the ether. He had used ethyl bromide in twenty cases. He usually operated, however, in the primary stage of chloroform narcosis.

Dr. J. E. Logan, of Kansas City, never used anesthetics on adults, and so considered them only in their relation to children. He did not think chloroform so dangerous if properly used. We should look carefully for functional or heart troubles. He used forceps in adults nearly always; in children the curette with the finger-nail properly cleansed. He advised the use of the finger-nail in operating in the region of the Eustachian tube in order to avoid injury to these orifices.

THIRD DAY, WEDNESDAY, MAY 18TH.

Dr. Swain advocated operating during the primary stage of chloroform anesthesia. He had had no bad effects from its use and he expected to continue using it.

Dr. Bryan, of Washington, while recognizing the importance of operating under full anesthesia, thought that the patient should not be so completely under the influence of the anesthetic that the reflexes would be abolished and he would be unable to expel foreign matter. He had used nitrous oxide gas for a number of years in older children. Though this gas was considered harmless, he had found six deaths from its improper administration. In operations upon the upper air passages he thought the patients were more likely to die from hemorrhage than from the effects of chloroform or ether. In his observation in adenoid cases he had often noted that obstruction came from the mechanical effect of the secretions. The removal of the adenoids and turbinates does away with many of the symptoms, and he had found where there was supposed to be a recurrence of the trouble, that the throat and pharynx were free, but there was present an acute rhinitis and an engorgement of the inferior turbinate. The speaker then cited a case to illustrate the point in question. As to instruments, he did not think that any one instrument would answer in all cases. He used the curette and the forceps. From casts made of children's throats a pattern of a curette was obtained from which he had had one made.

Dr. Rice said there might be other reasons why they did not breath well: small nostrils, infiltration as well as other conditions tend to prevent unimpeded respiration. A catarrhal bronchitis is set up, and in winter time it is usually several weeks before the child recovers. The speaker referred to a change in the contour of the superior maxilla as a result of the presence of the adenoids.

Dr. Hinkel said that de Roaldes had written him that he had used bromide of ethyl several hundred times with perfect satisfaction. In young children he preferred chloroform.

Dr. Delavan closed the discussion. During the first two years he used chloroform, and in operating upon over two hundred cases he had had two accidents, neither of them fatal. Unfavorable reports that came from abroad, together with these accidents, caused him to discontinue the use of chloroform. Ether was often not given properly, and produced a complete relaxation of the pharynx while only a partial relaxation was wanted. People in this country were more familiar with the administration of ether than with that of chloroform. Adults do not require a general anesthetic; the paper read referred only to children. In operating about the orifices of the Eustachian tubes the finger should be used, and that with great care. Any nasal obstruction may give rise to a failure of the adenoid operation. He did not think that ether had anything to do with the amount of hemorrhage present. Certain anomalies, such as stammering, had been removed after adenoid operations.

DR. J. C. MULHALL, of St. Louis, read a paper entitled

THE UPPER RESPIRATORY ORGANS AND THE GENERAL HEALTH.

The national triad of affection, are catarrh, dyspepsia, nervous prostration — all due to our bad habits of living. Diseases of the upper air passages may produce disturbances of the general health, and it is equally true that if the general health suffers there may result diseases of the upper air passages. He related the case of an elderly man who was plethoric from high living, champagne, etc.; his catarrhal condition was due to his general health; he needed dieting and exercise, but refused to take this treatment. After six months of spraying, burning and all manner of other things, at the hands of numerous physicians, he returned without any marked improvement. He then followed my advice, walking three miles a day and dieting, which treatment was followed by disappearance of all his symptoms. This case illustrates a very common condition and a common error in the treatment of diseases of the upper air tract.

A factor to be taken into consideration is that of auto-intoxication from the intestinal tract. The American people eat too much candy, hot bread and rolls, cereals and sugar, etc., thus laying up a large supply of fuel that is not worked off, and as a result become dyspeptic. The surgeon always has the intestinal tract cleared out before operating in order to prevent infection from within. It has been noted that a cut in the skin will heal more rapidly if the intestinal canal is cleaned out by a calomel purge. Opera singers are acquainted with the fact that careful dieting and an abundance of outdoor exercise are productive of better voices. Pugulists are frequently subject to pharyngeal catarrh produced by their wild habits of living; but as soon as they train for a fight these symptoms disappear.

In the purulent catarrh of adolescence, the patient must be taken away from the books and the piano and placed on iron, outdoor exercise and good food, etc., if we hope to make a cure. It is difficult to induce Americans to adopt proper habits; they seem to prefer the disease so long as it does not endanger life. If attention to the general health and simple cleanliness are neglected all other treatment is superfluous. Prophylaxis should begin in childhood. There should be as near an approach to outdoor life as possible. The head-covering should permit of free ventilation; the same should be true of foot-covering. But three meals a day should be eaten. Hot bread should be eschewed. Rubber shoes and mufflers should be done away with. Careful diet does as much for the outside skin as it does for the inside. Nasal affection cannot be properly treated until the ptomaines are swept from the system. The Salsberry method, consisting of beef diet, hot water and plenty of exercise is very beneficial in properly selected cases. Many affections of the upper air tract are tinctured by neurasthenia; here treatment should be directed to the nervous system. With all due modesty, I would say, "long live the general health; away with the spray."

DR. MAYER considered the paper a very valuable one, as it called attention to the general health which specialists were prone to lose sight of.

DR. DELAVAN thought that dietetics had much to do with the improvement of the last named cases.

DR. HENRY L. WAGNER, of San Francisco, read a paper entitled

NATURAL IMMUNITY (A BIOLOGICAL RESEARCH).

DR. J. H. BRYAN, of Washington, reported two cases illustrating

FURTHER RESULTS OF OPERATIVE TREATMENT OF FRONTAL SINUSITIS.

DR. J. W. FARLOW, of Boston, reported

A CASE OF DISEASE OF THE ACCESSORY SINUSES.

This case was of particular interest from the fact that it followed scarlet fever. There was a thickening of the superior maxilla and absence of discharge from the nose. The eye was pushed outwards, downwards and forwards, and there was possibly a secondary involvement of the antrum of Highmore.

DR. WAGNER referred to the use of hot air in those cases where the condition cannot be treated surgically.

DR. HENRY L. SWAIN, of New Haven, read a paper entitled

SOME OBSERVATIONS ON THE USE OF AQUEOUS EXTRACT OF SUPRARENAL GLANDS LOCALLY IN THE UPPER AIR PASSAGES.

His conclusions were as follows:

(1) We have in the aqueous extract of suprarenal glands, a powerful, local, naso-constrictor agent, and a contractor of erectile tissue, which it is safe to use in very considerable amounts without any dangerous or deleterious effects, locally, or to the general constitution of the individual.

(2) These local effects can be reproduced in the same individual apparently any number of times without entailing any vicious habits to either the tissue or the individual.

(3) The use of the extract seems rather to heighten the effects which may be expected from any given drug which may be used locally after it.

(4) In acute congestions it has its widest application and greatest opportunity for good, but in certain chronic conditions of the hay-fever type, where redundant tissue seems prone to develop, it can be relied upon as one of the most helpful adjuvants which we have at command.

(5) The only difficulty seems to be the producing it in quantities and preventing its decomposition on standing.

DR. CLARENCE C. RICE, of New York, read a paper on

ACUTE INFLAMMATORY CONDITIONS OF THE UPPER AIR PASSAGES ACCOMPANIED BY LARYNGEAL EDEMA.

The following papers were read by title: "Clinical illustrations of malignant growths of the epiglottis," by Dr. J. Solis Cohen, of Philadelphia; "The surgical treatment of lupus and tuberculosis of the larynx in connection with tracheotomy," by Dr. E. L. Shurley, of Detroit; "Foreign body in the larynx, and a modification of Kirstein's autoscope," by Dr. E. Fletcher Ingals, of Chicago; "Submucous operation on the nasal septum, with attempts at membrane grafting," by Dr. T. Emory DeBlois, of Boston; "Influence of lymphoid hypertrophy on epilepsy," by Dr. U. G. Hitchcock, of New York; "A case of nasal fibroma, supplementary report," by Dr. W. E. Casselberry, of Chicago; "Observations on the value of lactic acid as a remedy for certain conditions of the upper respiratory tract," by Dr. Alexander W. MacCoy, of Philadelphia; "The uvula in its relations to various abnormal conditions," by Dr. G. B. Hope, of New York; "Thyrotomy for papilloma of the larynx," by Dr. T. Melville Hardie, of Chicago; "Sarcoma of the nasal septum," by Dr. J. Payson Clark, of Boston; "Some remarks on facts not found in text-books," by Dr. W. P. Porcher, of Charleston.

At the executive session, the following were elected to active fellowship: Dr. J. L. Goodale, of Boston, Mass., — thesis, "A contribution to the histo-pathology of acute tonsillitis"; Dr. D. Braden Kyle, of Philadelphia, — thesis, "The position of the orifice of the Eustachian tube and the possibility of catheterizing through the mouth"; Dr. G. Hudson Makuen, of Philadelphia, — thesis, "Artistic breathing."

Officers elected for the ensuing year: President, Dr. William E. Casselberry, of Chicago; First Vice-President, Dr. John W. Gleitsmann, of New York; Second Vice-President, Dr. F. Whitehill Hinkel, of Buffalo; Secretary and Treasurer, Dr. Henry L. Swain, of New Haven; Librarian, Dr. Jonathan Wright, of Brooklyn; Delegate to the Council, Dr. Thomas R. French, of Brooklyn; Representative to the Congress of Physicians and Surgeons, Dr. W. K. Simpson, of New York. Members of the Council, Dr. Thomas R. French, of Brooklyn; Dr. John O. Roe, of Rochester; Dr. W. H. Daly, of Pittsburg; Dr. Charles H. Knight, of New York.

Chicago was chosen as the next place of meeting, the time to be at the discretion of the Council.

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Recent Literature.

The Purification of Public Water-Supplies. By John W. Hill, Consulting Engineer, etc. New York: D. Van Nostrand Co. London: E. & F. N. Spon. 1898.

The object of this very full and complete treatise, as stated by the author, is to present

(1) The fact and the causes of pollution of sources of public water-supply.

(2) The effect of such pollution upon the death-rates from typhoid fever in large cities.

(3) Examples of the reduction in typhoid mortality by the introduction of pure water, and by the filtration of polluted water.

The author very properly takes the position that the best test of the public water-supply is its effect upon the health of the community to which it is supplied, and for this reason a very considerable portion of the book is devoted to the subject of typhoid fever in its relation to public water-supplies.

In the Appendix several tables are presented giving the statistics of many cities, American and foreign, the figures presented being the population and the death-rates per 100,000 from typhoid fever for a series of years.

The book is well illustrated with cuts and diagrams illustrating the different methods of filtration, and will be found very useful as a work of reference, for water boards, engineers, health officials and all persons who are interested in the subject of pure water-supplies.

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THE GOULSTONIAN LECTURES ON THE PATHOLOGY OF THE KIDNEYS.

Some of the problems connected with the functions of the kidneys, both in a normal and pathological state, have been much elucidated — though not altogether cleared up — by the experiments of Dr. Rose Bradford as recorded in the Goulstonian lectures recently published in the *Lancet.*

It has, for instance, long been remarked that in chronic interstitial nephritis whose ultimate lesion is known as the small contracted kidney, polyuria is a common symptom, and the urine voided is of low specific gravity. In this disease there is gradual destruction of the parenchymatous or secreting elements of the kidney by a connective-tissue overgrowth and life is only maintained by the increased activity of such portions of the renal substance as still remain sound. Naturally all the urea and other urinary solids must pass out through this texturally healthy and functionally active part of the renal mechanism, but why the great excess of watery secretion? This has never been satisfactorily explained.

It is interesting to observe that a similar result was obtained by Dr. Bradford in his experiments of partial nephrectomy in dogs. Excision of a portion of one kidney is followed by a slight increase in the amount of urine, sometimes transient, in others more permanent in its duration, but unaccompanied by any permanently increased excretion of urea, or by any deterioration in the general health. The excision of portions of both kidneys is followed by a very great augmentation in the amount of urine; thus it may be trebled and even quadrupled in amount, and this increase is permanent. The excision of a portion of one kidney and the subsequent removal of the whole of the other also causes this extreme hydruria, and provided that at least one-third of the original total kidney weight is left, the mutilated animal will remain in fairly good health for prolonged periods, for example, eighteen months. Such an animal, however, is unable to excrete a concentrated urine, and if very large amounts of nitrogenous foods are given, the urea formed is readily excreted, but only by means of a still further increase in the amount of urine. Such an animal, Dr. Bradford remarks, resembles a case of diabetes insipidus or contracted kidney, but the urine is not albuminous. The natural explanation of this would be that in interstitial nephritis there is always more or less accompanying alteration of the epithelium of the glomeruli, hence the albuminuria; that is, there is a mixed inflammation, a condition which did not exist in Dr. Bradford's mutilated animals. The cause of the increased excretion of urine when the amount of available kidney is thus reduced is by no means clear; Dr. Bradford declares that it has not in his observations been associated with any very great increase of blood pressure. Some physiologists have urged that the kidney not only excretes water but also that it reabsorbs water, and it may be that if the quantity of kidney tissue is diminished, the excretion may continue and the reabsorption may fail; this, however, does not seem to be the probable explanation.

Normally an animal, such as a dog, if it requires to excrete a large amount of urea can do so in two ways, either by increasing the percentage of urea in a given quantity of urine, or by increasing the total amount of urine. It would seem that after the partial nephrectomies, as well as in cases where large destruction of renal parenchyma is effected by disease, the process is likely to be the latter. Dr. Bradford noted that after partial nephrectomy there is a slight increase in the amount of urea in the blood, and it is possible that this may be the cause of the hydruria, and if so, there is a still greater resemblance between this experimental hydruria and that seen in renal cirrhosis, since the blood in this malady often contains a notable excess of urea. Some of Dr. Bradford's nephrectomized animals excreted three times as much urinary water with one-tenth of the original kidney weight as they did with intact kidneys. This shows the extreme facility with which small fragments of healthy kidney will excrete the urinary water. After excising portions of the kidneys, an increased excretion of urea sets in in from one to three days later than the increased excretion of water, so that the animals in which three-fourths of the total kidney weight has been removed present for the period of one to two days a condition of simple hydruria before the polyuria sets in. This polyuria is persistent, and being accompanied with great emaciation, it leads to death in periods varying from one to six weeks. In the cases where three-fourths or more of the total kidney weight had been removed, the polyuria was marked and persistent and invariably led to death; when, however, two-thirds of the total kidney weight had been removed, there was quite exceptionally a slight increase in the urea excretion accompanied by slight wasting, but this was never marked in amount or fatal in its course. All this is of interest in its application to renal cirrhosis, and it would appear that a very small difference in the amount of kidney substance will turn the scale from the condition of simple hydruria, which is compatible with good health for prolonged periods, to a condition of polyuria accompanied by great wasting and leading rapidly to death.

In our judgment, a principal point of interest in the physiology of the kidney as bearing on the pathology is the amount of kidney substance necessary in order for life to be maintained. This can be deduced from a comparison of the two series of Dr. Rose Bradford's experiments — the fatal one where three-quarters of total kidney weight had been removed, and the other, the non-fatal series where two-thirds had been excised and where life was maintained for an indefinite period in good health. The comparison of these two series shows that when the animal possesses some two grammes or more of kidney per kilo of body weight, life can be maintained in good health, but when the amount of kidney substance is less than two grammes per kilo, severe disturbances of nutrition set in and the animal dies. The normal amount of kidney in dogs is approximately some 6.7 grammes per kilo. As soon, then, as there is less than one-third of the normal quantity of kidney to do the work of that organ, the danger limit is reached and a very small amount of renal tissue will turn the scale.

The physician in active practice is continually encountering cases of renal cirrhosis which are nearing the danger line, where care and prudence will long avert a fatal issue, but where imprudence and excesses may precipitate all the evil consequences of failure of the renal function. Where the well-known symptoms of uremia are constantly present, he will realize that the danger limit is already past and the condition irremediable.

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THE STUDY OF TROPICAL MEDICINE.

In the first number of the *Journal of Tropical Medicine*, a new monthly published in London, devoted to medical, surgical and gynecological work in the tropics, and edited by James Cantlie, M.B., F.R.C.S., together with W. J. Simpson, M.D., M.R.C.P., appears the announcement that a school for the study of tropical diseases is to be established in London.

This school, which has been warmly and efficiently promoted by Mr. Chamberlain, the present British Minister for the Colonies, and initiated by a substantial gift of money by the Colonial Office, is to be attached to the Branch Seamen's Hospital at Greenwich, which is to be enlarged for the purpose. The school is to be under the direction of Dr. Patrick Manson, president of the Section on Tropical Diseases at the recent Edinburgh meeting of the British Medical Association, and an abundant supply of material for study is assured, as the cases treated at the hospital are natives of India, Africa, China, the West Indies, and other tropical countries, brought from the vessels lying at the London docks. The school will require a two months' course of demonstrations and clinical work, and judging from the number of British medical men who proceed each year to the tropics, either in the service of the government, or as private practitioners, and who will doubtless be glad to avail themselves of this means of preparation for their chosen work, the number of students will probably be large.

The school ought to serve an excellent purpose in fitting men who intend to practise in the tropics for the treatment of the special class of diseases with which they will be called upon to deal, and enabling them to start with some knowledge of their work, and not, as heretofore, be obliged to depend entirely on the too often bitter teaching of experience.

If, as now seems probable, no inconsiderable number of the medical men of our own country are to be compelled to deal with tropical medicine and hygiene in connection with our new territorial acquisitions, there will be urgent need, at least, for the establishment of courses in tropical medicine in our more important medical schools, if not for the establishment of a special school for the study of tropical diseases. In the light of present conditions the work of the new school in London will be watched with interest in this country.

The city of London is peculiarly well fitted for the supply of clinical material to such a school, owing to the extent and cosmopolitan character of its commerce, which supplies its hospitals with cases of disease from a very large number of tropical lands. Whether any seaport in this country could supply an adequate amount of clinical material for a school devoted to tropical diseases is open to doubt, but it is nevertheless true that the study of tropical diseases in this country will demand increased attention, and measures should be taken as soon as possible to ascertain what can be done in this regard.

The establishment of the *Journal of Tropical Medicine,* the first publication in English devoted to tropical diseases, calls to mind the fact that already in Germany, France and Holland journals of a similar character are published.

MEDICAL NOTES.

Professor Koch in Italy. — Professor Koch is at present engaged in the study of malaria in the hospitals of Milan, and expects to make a special investigation of the subject in Italy.

A Dinner to Professor Virchow. — A dinner, at which Lord Lister will preside, will be given to Professor Virchow on October 5th, on the occasion of his visit to London, to deliver the second Huxley lecture.

Yellow Fever at Ponce. — The occurrence of several cases of yellow fever among the troops at Ponce, Porto Rico, has been announced. The diagnosis is based upon the results of an autopsy. So far this case has been the only fatal one. The army authorities are confident of keeping the disease under control.

Correction. — The title of the paper by Dr. F. B. Lund, in the last issue of the Journal, was by mistake made to read "A Report of Ten Operations for General Peritonitis with Two Recoveries." It should have read, "A Report of Ten Operations, etc., with Four Recoveries."

The Study of Decreased Natality. — Few subjects in anthropology have more practical bearing than that of the decadence of races. This comes most directly from a diminished birth-rate. It has been calculated according to service, that a minimum of four living children is required to each marriage under ordinary conditions, in order merely to prevent diminution. Decrease in natality, therefore, is an ominous outlook for a community.— *Science.*

BOSTON AND NEW ENGLAND.

A Vacant Instructorship. — The position of Instructor in Histology at the Harvard Medical School is vacant. The appointment is an annual one with a salary of four hundred dollars. The holder is expected to give twenty hours a week to the work of the Laboratory and to devote the remainder of the time to original investigation in Histology or Embryology under the supervision of the senior officers of the department. Applications should be addressed at once to Prof. Charles S. Minot, Harvard Medical School, Boston, Mass.

Arrival of the Hospital Ship "Relief." — The hospital ship *Relief* reached Boston early Tuesday morning, September 13th, from Montauk, with 250 sick soldiers. It had been expected that the greater part of these men would be Massachusetts troops. This was, however, not the case, but seven being Massachusetts Volunteers. Most of the men were of the regular army. Very few were dangerously ill, though all showed the effects of their exposure and hardships. Those most ill were sent to the City Hospital, and the others distributed to the Massachusetts General, the Homeopathic, the Marine Hospital and the Long Island Hospital. At the latter institution excellent accommodations are provided in one wing of the large hospital building; several of the soldiers expressed pleasure at no longer being obliged to sleep in tents. The *Relief* sailed soon after discharging the soldiers.

NEW YORK.

A Munificent Gift. — It is now announced that the gift to the new medical department of Cornell University, in New York, of Col. Oliver H. Payne, brother-in-law of Ex-Secretary of the Navy Wm. C. Whitney, which was some time ago reported to be $500,000, in reality amounts to the munificent foundation of over $1,500,000, and that the new building which it provides for will be begun within the next thirty days. It is stated that several years ago Colonel Payne formed the determination of endowing the medical department of the University of the City of New York through his esteem for the late Dr. Alfred L. Loomis, at that time the foremost professor of that school, for whom he entertained a warm feeling of personal gratitude on account of his recovery from a serious illness under the latter's treatment. In 1892 he made a donation of $150,000 to the Loomis Laboratory connected with the University, by means of which that institution was entirely freed from debt, with the proviso that his name was not to be made public in the matter, and it was understood by those to whom the gift was known that this amount was only preliminary to further endowments which he purposed to bestow upon the University Medical School. When, a few months ago, the trouble arose between the heads of the University and the Faculty of the Medical School, Colonel Payne, who had for some time been in the Council of the University, sympathized entirely with the latter, and when the majority of the professors sent in their resignations and joined the new Cornell Medical Faculty, he, in common with several other members of the Council, also resigned.

He accordingly transferred his generous designs from the University to the new institution which is now to benefit so handsomely therefrom, the gift announced being one of the largest ever made to a university, and larger than any previously devoted to the advancement of medical education. The architects of the college building, Messrs. McKim, Mead & White, have been instructed to spare no expense in meeting every material need of the students and teachers in the college and of the patients and physicians in the dispensary department. The cost of the building and land will be about $600,000, and the remainder of the donation is to form an endowment fund which is expected to yield a revenue of at least $40,000 a year. The site selected is on First Avenue, between 27th and 28th Streets, directly opposite Bellevue Hospital, so that the students will have the full benefit of the clinical material afforded by that institution. The building is to be in a severe style of Renaissance architecture, and constructed of Joliet or Indiana limestone and red brick. It will be 200 feet long, 100 feet deep and 85 feet high, with five stories. The dispensary department will be the largest in the city, occupying more than one-half of the first two floors. It is designed to push forward the work of construction so rapidly that the entire building will be ready for occupancy by October, 1899.

Fatalities of Hot Weather. — The recent long-continued term of excessively hot weather was attended by great mortality up to the end. On Monday, September 5th, there were 47 deaths reported from the heat. On the 6th, when the high temperature and humidity began to moderate, there were 20 deaths, and on the 7th, when the hot wave was finally broken by a violent storm, the number was reduced to 11.

Aid for Sick Soldiers. — The Soldiers' Comfort Committee and the Red Cross Society have been doing a magnificent work at the station at the terminus of the Long Island Railroad, where hundreds of sick soldiers arrive every week from the camp at Montauk Point, and where an efficient hospital service has been established. Not only has an immense amount of suffering been relieved, but undoubtedly many lives have also been saved by these agencies.

Conditions at Camp Black. — At Camp Black, on Hempstead Plains, Long Island, where several regiments of New York Volunteers who responded to the President's second call for troops have been encamped for a considerable period, there has been a number of cases of typhoid fever, with three deaths from the disease. Dr. Doty, Health Officer of the Port, recently made an investigation of the outbreak and arrived at the conclusion that the cause of the trouble was the contamination of the water of some driven wells formerly in use, but which have now been filled up for some time. As there have been no deaths of late and all the cases are reported as doing well, it is hoped that there will be no cause for further anxiety.

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Miscellany.

GENERAL MORTALITY IN NEW YORK DURING AUGUST.

The general mortality in the city during the four weeks ending August 27th represented an annual death-rate of 22.51 per thousand of the estimated population, against 23.26 for the four weeks ending July 30th. The deaths from diarrheal diseases averaged 320 per week and the deaths from diarrheal diseases in children under two years of age, 284, against 384 and 384 and 343.5 respectively in the four weeks of July. These figures go to confirm the fact that the mortality from this class of diseases is always greater in July than in August and the highest in any month during the year. The deaths from typhoid fever averaged 21.75 per week, against 6.75 in the four weeks of July. This marked increase is unquestionably due for the most part to the deaths of soldiers, large numbers of whom, suffering from this disease, have been received into the various hospitals of the city. The increase in the deaths from typhoid is a progressive one from the time the sick soldiers first began to be brought to New York for treatment. In the week ending July 23d there were but four deaths from the disease in the city. In the week ending July 30th there were 8, in that ending August 6th, 15, in that ending August 13th, 13, in that ending August 20th, 18, and in that ending August 27th, 41.

When we come to look at the deaths from diphtheria, scarlet fever and measles, we find the lowest mortality of the year. The deaths from diphtheria averaged 13.5 per week, against 24.5 in the four weeks of July. This is a peculiarly gratifying showing; for, while the mortality from this class of diseases is always smaller in midsummer than at other seasons, it is probably several years since the death-rate from diphtheria has been so low as that now recorded. The deaths from scarlet fever averaged 5 per week, against 11 per week in July, and the deaths from measles 5.75, against 11.25 in July. In the four weeks ending July 2d, the mortality from measles averaged 17.75 per week. The deaths reported from sunstroke amounted to 60, against 99 during the four weeks ending July 30th. In comparing the general mortality of the different boroughs of the city, we find the same curious circumstance that was noticed in July, namely, that the summer deathrate is much higher in the comparatively sparsely populated boroughs of Queens and Richmond (Staten Island), than in the more thickly populated boroughs of Manhattan and Brooklyn. This is particularly noticeable in the week ending August 20th, in which we find the death-rate in Richmond (37.77) nearly double that in Manhattan (19.79).

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AUTOPSY FINDINGS IN YELLOW FEVER.

A timely article appears in the *Medical News* for September 3d, by Dr. Eugene Wasdin, Passed Assistant Surgeon, U. S. Marine-Hospital Service, "On the Value of the Autopsic Findings in Subjects Dead from Suspected Yellow Fever." Evidently the matter is of much importance in a campaign such as we have just gone through, and it is altogether desirable to render mistakes as few as possible.

Dr. Wasdin says: "The yellow-fever cadaver has assuredly a most characteristic appearance. All subjects dead from the disease bear a close resemblance to each other; indeed it would not be difficult to make a diagnosis, other facts being favorable thereto, from the cadaver alone. The body is usually quite rigid, this change in the muscles coming on early and persisting. The color is invariably more or less intensely yellow, and is due to a mixed hepatogenous and hematogenous jaundice. The entire skin is tinted. the scalp usually presenting a startling contrast to the parted hair, and the whites of the eyes are yellow, the change taking place in the conjunctivæ early in the disease, the scleræ becoming tinted later. This yellow tint is always contrasted with the deep purple discolorations from hypostasis which quickly appear in the skin of the dependent portions of the body after death, and which frequently appear before. It is at the edges of these hypostatic areas that the mixture of biliary and blood jaundice is particularly noticed as a muddy, thick, grayish-yellow tone. Hypostasis is common to all cadavers, but particularly is it prominent in this disease. It is not confined to the lower portions of the body, as the buttocks, loins and shoulders, but invades the neck, chest, ears and face; the genitals, as a rule, and the finger- and toe-nails are of a deep purple color. This discoloration occurs quickly, and is prominent within an hour after death. The pupils are usually dilated, the tongue foul, and the gums bloody; the anterior nares are caked with blood. This is a picture of a typical yellow-fever cadaver, and the appearances may be accentuated or softened, but the characteristic ensemble will be present in all."

The resemblance externally of the yellow-fever cadaver to that of a person who has died of malarial fever is often very striking. In such cases dependence must be placed upon conditions found in the internal organs. There is in yellow fever a general yellow tinting on section, and the spleen in uncomplicated cases is of normal size and appearance. The kidneys are always congested and swollen, and on section show fatty areas, particularly about the base of the pyramids within the cortex. The liver, the author has usually found normal in size and showing marked fatty changes. The vessels of the stomach walls are congested, the mucosa thickened and presenting numerous patches of extravasation and shallow erosions. The lungs are congested and yellow; the pleuræ and pericardium present numerous ecchymoses, as well as the heart muscle.

Histologically the fatty changes are best seen in the liver and kidneys. The liver cells are more granular, stain more faintly and contain numerous fat droplets; those of the kidneys lining the tubules, especially of the cortex, are also filled with drops of fat. The so frequent importance of an immediate diagnosis often renders the demonstration of the finer histological changes impossible for practical purposes.

The writer discusses briefly the bacteriology of the disease, and some personal experiments in which he was able in many cases to isolate a bacillus which give rise on inoculation to characteristic lesions. This experience has been that of many other observers. These organisms elaborate a toxin which exerts a characteristic and powerful influence upon the vasomotor system, as evidenced in the intense engorgement of the vessels, the gaseous, toneless pulse, and the full diastolic heart, prior to and post-mortem; also, in that rapid metamorphosis of the albuminoids of the highly organized cells of the liver and kidneys. The intention is not to contrast these organisms, but to accentuate the fact that there is no constant sign at these autopsies by which we can name the particular one which has produced the disease.

Dr. Wasdin quotes an interesting case occurring recently at Key West, in which, after careful examination, he concurred in the conclusion that the patient had died of yellow fever, but was later convinced that it was simply an intoxication from auto-infection with some member of the colon group of organisms.

"Finally," he says: "I would suggest that typical autopsic findings should always be regarded with suspicion, and demand immediate investigation of their cause. Should there be, or not, any local centre of auto-infection, there should be an investigation of the immediately preceding history of the patient, and should there prove to be evidence of exposure to infection of yellow fever, and should the clinical charts and history present the evidences of the disease which we have learned to recognize, then and only then can the information gained post-mortem be of decisive value to the diagnostician."

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Correspondence.

THE CHICAGO ACADEMY OF MEDICINE.

Chicago, September 4, 1898.

Mr. Editor: — The recently issued catalogue of the Chicago College of "Osteopathy" contains the assertion that the "orificialist surgeon," E. H. Pratt, one of its faculty, is a member of the Chicago Academy of Medicine. He has never been a member nor is he eligible. He is probably a member of the Chicago Academy of Homeopathic Physicians and Surgeons, an organization with totally different objects and purposes.

Kindly publish this in justice to the Chicago Academy of Medicine.

Jas. G. Kiernan, *Secretary.*

METEOROLOGICAL RECORD

For the week ending September 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	30.28	62	69	55	53	62	58	N.	N.	5	8	C.	C.	
M..29	30.11	67	75	59	66	81	74	S.	S.	12	12	O.	F.	
T...30	29.95	77	86	68	79	63	71	S.W.	W.	9	9	C.	C.	
W..31	29.99	78	85	70	66	67	66	W.	W.	10	7	O.	C.	
T....1	29.96	74	79	69	80	82	81	N.E.	W.	5	4	C.	O.	
F....2	29.90	76	85	68	75	80	78	W.	S.	6	4	C.	O.	
S....3	29.82	78	92	65	72	70	71	W.	E.	12	9	C.	C.	.27
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 3, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Whooping-cough.
New York . .	3,438,899	1518	776	22.68	8.40	17.34	1.44	1.68
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	—	—	—	—	—	—	—
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	208	100	28.80	7.68	21.12	4 32	1.92
Boston . . .	517,732	246	122	26.24	9.02	10.09	2 46	1.64
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	96	40	35.36	9.36	20.80	11.44	1.04
Washington .	277,000	109	36	15.64	8.28	6.44	7 36	1.84
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	82	32	32.94	9.76	25.62	1.22	—
Nashville . .	87,754	27	10	18 50	7.40	18.50	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	105,050	47	25	36.21	—	27 69	2.13	2.13
Fall River . .	95,919	29	18	37.95	6.90	37.95	—	—
Lowell . . .	87,193	37	21	43.20	10.80	40.50	2.70	—
Cambridge . .	86,812	36	19	42.78	8.31	27.70	2.77	—
Lynn	65,220	20	8	25.00	—	20 00	—	—
New Bedford .	62,416	24	15	49.92	12.48	45.76	—	—
Somerville . .	57,977	21	14	61.88	4.76	23.32	—	4.76
Lawrence . .	55,510	23	9	17.40	—	17.40	—	—
Springfield .	54,790	—	—	—	—	—	—	—
Holyoke . . .	42,364	25	17	48.00	4.00	32.00	4.00	—
Salem	36,062	13	6	46 14	—	46 14	—	—
Brockton . .	35,353	11	5	36.36	27.27	36.36	—	—
Malden . . .	32,891	14	9	35.70	14.28	35.70	—	—
Chelsea . . .	32,716	11	3	—	—	—	—	—
Haverhill . .	31,406	12	7	8.33	16.66	8 33	—	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	4	3	—	—	—	—	—
Fitchburg . .	28,392	13	8	7.69	23.07	—	—	—
Taunton . . .	27,812	13	5	30.76	15.38	30.76	—	—
Quincy . . .	22,562	8	2	37.00	—	37.00	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	5	1	—	20.00	—	—	—
Everett . . .	21,575	9	6	44.41	—	33.33	—	—
North Adams .	19,135	11	6	27.27	9.09	27.27	—	—
Chicopee . .	17,368	6	5	66.66	16.66	66.66	—	—
Medford . . .	15,832	10	6	60.00	—	50.00	10.00	—
Newburyport .	14,794	4	1	25.00	—	25.00	—	—
Melrose . . .	11,965	—	—	—	—	—	—	—

Deaths reported 2,705: under five years of age 1,339; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 742, consumption 236, acute lung diseases 152, diarrheal diseases 565, typhoid fever 65, diphtheria and croup 42, whooping-cough 36, cerebro-spinal meningitis 19, scarlet fever 7, measles 5, erysipelas 3.

From whooping-cough New York 23, Providence 4, Haverhill 3, Boston 2, Pittsburgh, Cambridge, Holyoke and Fitchburg 1 each. From cerebro-spinal meningitis Somerville 5, New York 3, Boston, Worcester, Cambridge and Holyoke 2 each, Baltimore, Lynn and New Bedford 1 each. From scarlet fever New York 5, Baltimore and Pittsburgh 1 each. From measles New York 4, Boston 1. From erysipelas New York 2, Baltimore 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending August 20th, the death-rate was 22.0. Deaths reported 4,727; acute diseases of the respiratory organs (London) 196, diarrhea 994, whooping-cough 74, measles 57, diphtheria 53, fever 42, scarlet fever 30.

The death-rates ranged from 8.6 in Halifax to 31.1 in Liverpool; Birmingham 24.1, Bradford 16.3, Cardiff 17.3, Croydon 18.0, Gateshead 16.1, Hull 19.3, Leeds 24.7, Leicester 17.7, London 23.4, Manchester 22.6, Newcastle-on-Tyne 18.2, Nottingham 14.8, Portsmouth 21.5, Sheffield 26.9, Swansea 13.8, West Ham 20.4.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending August 27th, the death-rate was 23.2. Deaths reported 4,988; acute diseases of the respiratory organs (London) 135, diarrhea 1,321, whooping-cough 84, measles 53, diphtheria 45, scarlet fever 19, fever 19

The death-rates ranged from 13.7 in Huddersfield to 38.5 in Wolverhampton; Birmingham 24 4, Bradford 18.3, Croydon 21.0, Gateshead 21.6, Leeds 25.7, Leicester 24.0, Liverpool 30.9, London 21.5, Manchester 24.4, Newcastle-on-Tyne 26.7, Nottingham 16.8, Plymouth 24.2, Salford 28.8, Sheffield 30 5, Sunderland 35.2.

SOCIETY NOTICE.

American Academy of Railway Surgeons. — The fifth annual meeting of the American Academy of Railway Surgeons will be held at the Auditorium, Chicago, Ill., Wednesday, Thursday and Friday, October 5, 6 and 7, 1898.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Lachrymal Passages: Their Causes and Management. The Prevention of Diseases now Preying upon the Medical Profession. By Leartus Connor, A.M., M.D., Detroit, Mich. Reprints. 1898.

Studies on Trichinosis, with Especial Reference to the Increase of the Eosinophilic Cells in the Blood and Muscle, the Origin of these Cells and their Diagnostic Importance. By Thomas R. Brown, M.D. Reprint. 1898.

The Association of American Medical Colleges, Proceedings of the meeting at Denver, June 6, 1898, President's Address and Papers Read, Constitution, By-laws and Rules and Rulings of the Judicial Council, List of Colleges in 1896–98. Reprint.

The Office Treatment of Hemorrhoids, Fistula, etc., without Operation. Together with Remarks on the Relation of Diseases of the Rectum to Other Diseases in Both Sexes, but especially in Women, and the Abuse of the Operation of Colostomy. By Charles B. Kelsey, A.M., M D., late Professor of Surgery at the New York Post-Graduate Medical School and Hospital, etc. New York: E. R. Pelton. 1898.

Atlas and Epitome of Operative Surgery. By Dr. Otto Zuckerkandl, Privat-Docent in the University of Vienna. Authorized translation from the German. Edited by J. Chalmers Da Costa, M.D., Clinical Professor of Surgery in Jefferson Medical College; Surgeon to the Philadelphia Hospital, etc. With 24 colored plates and 217 illustrations in the text. Philadelphia: W. B. Saunders. 1898.

Text-Books of Diseases of the Kidneys and Genito-Urinary Organs. By Prof. Dr. Paul Fürbringer, Director of the Friedrichshain Hospital, Berlin; Royal Medical Counsellor and Member of the Royal Medical Council of the Province of Brandenburg, etc. Translated from the German with annotations by W. H. Gilbert, M.D., Physician in Baden Baden, etc. In two volumes. Vol. II. London: H. K. Lewis. 1898.

Manual of the Diseases of Children. By John Madison Taylor, A.M., M D., Professor of Diseases of Children, Philadelphia Polyclinic; Assistant Physician to the Children's Hospital and to the Orthopedic Hospital; Neurologist to the Howard Hospital, etc.; and William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic, Instructor in Obstetrics in the Jefferson Medical College of Philadelphia, etc. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1898.

A System of Practical Medicine. By American Authors. Edited by Alfred Lee Loomis, M.D., LL.D., late Professor of Pathology and Practical Medicine in the New York University, and William Gilman Thompson, M.D., Professor of Medicine in the Cornell University Medical College; Physician to the Presbyterian and Bellevue Hospitals, New York. Volume IV. Diseases of the Nervous System and Mind; Vasomotor and Trophic Disorders; Diseases of the Muscles, Osteomalacia; Rachitis; Rheumatism; Arthritis; Gout; Lithemia; Obesity; Scurvy; Addison's Disease. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1898.

Address.

AUENBRUGGER AND LÆNNEC, THE DISCOVERERS OF PERCUSSION AND AUSCULTATION.[1]

BY EDWARD O. OTIS, M.D., BOSTON,
President of the American Climatological Association.

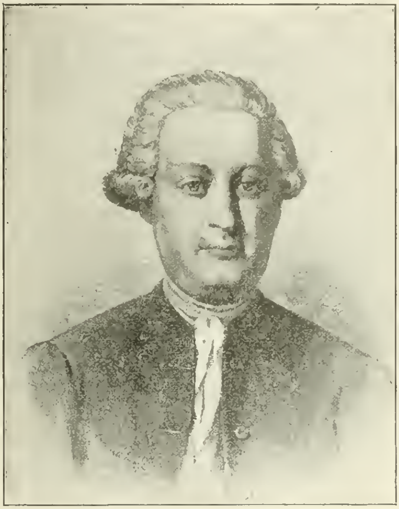
It is quite improbable, I think, that we should be here to-day, or, indeed, have an existence as a society largely devoted to the consideration of diseases of the chest, were it not for the methods of thoracic examination which Auenbrugger and Lænnec have given us in their discoveries of percussion and auscultation. Without these two precious methods of investigation we could scarcely have arrived at any degree of precision or certainty in thoracic pathology, and might have been not unlike the old physicians and surgeons who would "swear," as Morgagni says, that there was fluid in the chest, when in reality there was not a "single drachm"; or perform paracentesis of the thorax upon a duke for an empyema which did not exist.[2]

It has seemed to me, then, eminently fitting that this Society should honor the memory of these illustrious men, by reviewing their lives and work, and be not unmindful of the debt of gratitude we owe them for their inestimable contributions to the science of our art and to humanity. In entering into their labors as we percuss the chest and apply the stethoscope, which reveals so exactly to the trained ear the condition within, let us not forget the years of patient toil and investigation of Auenbrugger and Lænnec, which, with native genius, resulted in their immortal discoveries.

Leopold Auenbrugger, whose "Inventum Novum" was given to the world in 1761, was born in the historic town of Grätz, Austria, in 1722. His father, Sebastian Auenbrugger, was a well-to-do freeman of blameless character; and both he and his wife, Maria Theresia, were well known for their kind-hearted and charitable dispositions, the kind of ancestry that has so often produced illustrious descendants. Leopold, their son, was brought up in a good, plain fashion, with pious and Christian instruction, and studied literature and philosophy at the university then existing at Grätz. Undoubtedly his parents discovered more than ordinary ability in him and determined to give him "privileges." What influences, if any, directed his attention to medicine we do not know; not unlikely he was "born to it," as we say, as some people seem to be destined almost from birth to certain careers, they develop a taste for them so early. At all events, he devoted himself to its study with extraordinary application and untiring industry, and completed his studies at the University of Vienna under van Swieten, graduating with great distinction.

He settled in Vienna, and after some years of private practice he was appointed at the age of twenty-nine, in 1751, physician to the Spanish Military Hospital, which was the best and largest at that day in Vienna. This position he held for seventeen years until 1768, when, a change taking place in the hospital, he retired to private practice, devoting himself untiringly to the study and practice of his profession. He manifested the same kind-hearted and charitable disposition characteristic of his father. To the poor he gave his valuable services freely, and with the same care and attention as to those who paid him well; particularly was this the case towards those from his own province. His benevolence and kindness extended to all about him, to his family, his servants, his poor patients and every one who came in contact with him. Charity, the leading trait in his character, was a virtue with him. He took poor students, clothed and fed them until they could finish their studies; and many physicians and surgeons were indebted to him for their start in life. What a beautiful picture this of the unselfish, humanity-loving physician, often enough repeated, be it said, to the honor of our profession, in this and all ages.

Possessed of an excellent constitution and enjoying good health, he continued untiring and indefatigable in his professional duties even to his latest days, full of goodness and philanthropy, as his great-grandson says.



Auenbrugger.

In chest diseases he was considered most skilful. His door-bell led to his sitting-room, and his little hand lantern was always in readiness, by the light of which he not infrequently went alone to visit his patients even to the remotest suburbs. One can see in imagination the kindly old physician trudging through the empty streets of the city at night, guided by the feeble flicker of his lantern, bound on his errand of mercy: to detect perchance some thoracic disease by the use of his own discovery; eager to the last to prove again and again the value of percussion. He was always a student and investigator, and was accustomed to make voluminous notes and histories of his important cases. He possessed a large library, rather unusual in those days, I fancy, and was a friend of the philosopher Werner. He was also fond of music, and for a great many years he used to frequent a certain baron's house every Sunday in the winter season to attend a musical matinee. He wrote a comic opera entitled the "Rauchfangkehrer" (chimney-sweeper) which attracted the attention of the Empress Maria Theresa who asked him to write another; but he replied that he had something better to do than to write comedies.

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[1] The President's Address at the meeting of the American Climatological Association, at Maplewood, N. H., August 31, 1898.
[2] Holmes, Oliver Wendell: Dissertation on Direct Exploration in Medical Practice, Bolyston Prize Essay. 1839.

His home life was a happy one, having been married at a comparatively early age (thirty-two) to Mariana von Priestersberg, with whom he had fallen in love when a student. They celebrated their golden wedding in 1804, a few years before his death. He had two children, daughters, one of whom spoke and wrote both Latin and Greek, and was a remarkable pianist; the other was noted for her beauty and wit. In the latter part of his life he lost the sight of one eye, but the other was so sharp that he could use it in reading and writing, and from his house could tell the time upon the tower of St. Stephen's Cathedral. His mode of life was very simple; and in his latter years he rarely touched meat but subsisted upon soup, vegetables and light farinaceous food. Two years before his own death his beloved wife Mariana died, and from that time he took little interest in life, remained most of the time in his study, and saw with pleasure only his granddaughters. His death was from the result of a cold, probably the pneumonia of old age. He retained his senses to the last, and predicted the day and hour of his demise. Looking up to the clock upon the wall of his room, he said, "When two strikes the end will come." And so it happened, in 1809, in the eighty-seventh year of his age.

Auenbrugger was ennobled by Kaiser Josef in 1784, and given the title of Elder von Auenbrugg, "in consideration," as it states, "of his useful services rendered to the public through his ability and excellent skill in medicine." "His life," says Dr. Clar who collected the fragmentary sketches of his career, "was a model of modesty, philanthropy, genuine devotion to the science and art of medicine, and of kindly regard towards the poor as well as the rich." In him was exemplified the highest type of the physician in private practice, uniting an extraordinary talent for investigation, intense devotion to his patients, and — an indispensable attribute for a practical physician — a sympathetic disposition. And, after all, is not the varied experience in the school of private practice the finest kind of training to make a well-rounded physician and man? keeping his medical sense keen and alert, his sympathy acute, his intellect active, his charity and compassion great, and his manners gentle, refined, and gracious. Each patient is a clinic, and often a liberal education to him. It has sometimes seemed to me that excessive hospital practice has proved rather an injury to some physicians, at least to their manners, if not to a thorough and careful analysis of their cases; perhaps, however, it is in the man rather than in the circumstances of his environment.

Although we possess but these meagre and fragmentary records of Auenbrugger's life, yet it is enough to enable us to fill in the lines and gain a pretty distinct idea of his personality and character. With some persons one does not need to be acquainted with much of the detail of their lives in order to know what manner of men they are; a few characteristic illustrations here and there in their career reveal the spirit and motive in life, and show the kind of men they are, quite as well and clearly as an extended and continuous biographical narrative. Always enthusiastically devoted to the study of disease, Auenbrugger escaped the not infrequent misfortune of the student — a loss of sympathy with one's kind. His love for his fellow-men, for suffering humanity, for struggling students in his own profession, kept pace with his love for medical study. He never sacrificed the *man* for the scientist; nor did he lose his interest for other things in life, as happens sometimes with men intensely devoted to one pursuit. "A man of original powers," as some one has truly remarked, "can never be confined within the limits of a single field of activity."

He was interested in music, philosophy, and the drama, and well illustrates what Dr. Da Costa has so happily styled "the scholar in medicine." With dignity, sympathy, enthusiasm in his profession even to the last; ever seeking to improve and add to his art; modest like most great men; never refusing to give of his best to suffering humanity, he richly lived out his long life. As we teach our students percussion, as a matter of just recognition and due honor, let us tell them something of the life of its discoverer, at least his name, which I fear but few who avail themselves of the result of his long and arduous labors know.

Besides the "Novum Inventum," Auenbrugger published several papers, but his reputation rests, of course, upon the first. He was thirty-nine years of age when it appeared and had then had a hospital service of ten years. For seven years, as he says in his preface, he had been observing and reflecting upon it. "Scripsi illa, quæ sensum testimonio inter labores et tædia iterum iterumque expertus sum." "I have written that which I have proved again and again by the testimony of my own senses, and with laborious and tedious exertions." It is written in Latin, as most scientific works were in those days. He has not been ambitious of ornament, he says, in his mode or style of writing, being content if he should be understood. He begins his preface with the fact of his discovery. "Sisto tibi, benevole lector, signum novum in detegendis morbis pectoris a me inventum." "I present to you, charitable reader, a new sign which I have discovered for detecting diseases of the chest. This consists in the percussion of the human thorax, from the varying resonance of the sounds of which an opinion can be formed of the internal condition of this cavity. In making public my discoveries respecting this matter, I have been actuated neither by an itch for writing, nor a fondness for speculation, but by the desire of submitting to my brethren the fruits of seven years' observations and reflection. In doing so I have not been unconscious of the dangers I must encounter; since it has always been the fate of those who have illustrated or improved the arts and sciences by their discoveries to be beset by envy, malice, hatred, detraction and calumny." Alas! he had to endure what was perhaps harder to bear than any of these evils — neglect. "For many years after the discovery, Stoll alone acknowledged its value,"[3] having both used and taught it during the years from 1776 to 1784, and refers to it in his writings.

It was not, however, until forty-seven years later, in 1808, a year before Auenbrugger's death, that Corvisart, the first Napoleon's physician, and teacher of Laennec, revived the discovery by translating the "Novum Inventum" into French with copious commentaries; thus, in truth, making almost as great a discovery himself by discovering the original discovery. Corvisart,[4] when he commenced his studies, had never heard of the name of Auenbrugger, and was completely ignorant of his discovery, until, in reading the works of Stoll, he became aware of it. From that time he practised percussion with perseverance upon the living as well as upon the cadaver, and after twenty years of observation and experience he translated Auenbrugger's work with his own voluminous commentaries. He demonstrated daily in his clinic the immense advantages of percussion, and popularized it among his pupils, who soon extended the knowledge of it throughout France and in all Europe. "The complete ignorance," says Mailliot, "of Auenbrugger's work in France; the works, great reputation, and high position of Corvisart would have made it very easy for him to have appropriated Auenbrugger's work"; a lesser man might have yielded to the temptation, but not the noble-minded Corvisart. "I know very well," he says in his introduction, "how little honor there is in a translation with commentaries, and I might have elaborated anew Auenbrugger's discovery and made an independent work upon percussion and so attained the rank of an author, and in this way sacrificed Auenbrugger's name to my own vanity. This I did not want to do; "C'est lui, c'est sa belle et legitime découverte (inventum novum, comme il le dit justement) que j'ai voulu faire revivre." Corvisart was a great physician, but this fine act shows him to have been a great man as well.

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[3] Gee: Auscultation and Percussion, London, 1893.
[4] Mailliot: Traité Pratique de Percussion, Paris, 1843.

At the conclusion of his preface, Auenbrugger adds a sort of note, or, as he calls it, "Monitorium ad omnes medicos," in which he says: "I declare from experience, that this sign of which I treat is one of the greatest importance not only in detecting disease but also in curing it, and therefore merits the first place after exploration of the pulse and respiration. For, indeed, in whatever disease an unnatural sound of the thorax shall be observed, it will always indicate a grave danger." He closes his treatise with these memorable words: "Cedant hæc miseris in solatium, veris autem medicinæ cultoribus in incrementum artis; quod opto" — "May this work yield solace to the wretched, but to the students of true medicine an addition to their knowledge of the art; this I hope for." And Corvisart adds: "The concluding wish and prayer of the author have not been made in vain. This little treatise, as every candid practitioner may readily convince himself, contains most luminous precepts respecting the practice of percussion, and most exact and faithful observations on several diseases which were previously either misunderstood, singularly neglected, or respecting which very erroneous notions were for the most part entertained." And Skoda remarks: "Auenbrugger, with the fullest right, deserves the honor of being considered the founder of the new method of diagnosis."

Why a discovery of such evident and inestimable value, and of such practical and simple application should have remained so long unappreciated and neglected, it is difficult to say. One reason readily occurs to us: Auenbrugger was never a teacher, and, unlike Lænnec, he had no pupils to learn and extend his discovery. "It is possible," says Hudson,[5] "that had not Lænnec survived his discovery for some years and continued to demonstrate its employment and results to the younger generation, it might have left as slight an impression on the minds of the profession as had the treatise on percussion by Auenbrugger, which preceded it." Another reason may have been a tendency in the profession of that age to devote itself inordinately to the study of the Hippocratic doctrines and their elaboration, rather than a desire to enlarge the boundaries of medical science by experiment and investigation.

To rest content with present achievement is always fatal to future progress, and is likely to produce an unfavorable mental attitude towards any new discovery. How Auenbrugger felt about it himself we can only conjecture. That he was convinced that it was a substantial and important contribution to the science of medical diagnosis we can feel assured, from the fact that he was content to leave it to time to establish, for he never wrote regarding it again. He would not have been human, however, if he had not experienced a bitter disappointment, as the years rolled by, in observing how little recognition it obtained, and how little it was used, but his philosophy and experience doubtless taught him that this had been, and would be, the fate of many another discoverer. Nevertheless, he had the satisfaction of using it himself during his long years of practice, and while the rest of the medical world were groping in darkness over the diseases of the chest, he was enabled to illumine them by the light of his matchless discovery.

The treatise is written in Latin, as I have said, in the curious form of observation, axiom and scholium. Dr. Forbes, who translated it into English in 1824, says, "It is certainly written in no very classical style of Latinity." It is, however, for the most part clear and simple. The principles are two, as Gee[6] says: "first, that the sounds produced by percussion must be regarded simply as acoustic phenomena, and named accordingly; secondly, that the sounds are to be explained by reference to corresponding physical states, that is to say, to the presence or absence of air in the parts percussed." Upon these principles, as we know, percussion stands firmly established to-day.

Auenbrugger begins by describing the natural sounds of the chest, the method of percussion, and then the unnatural or morbid sounds. He next proceeds to describe the acute and chronic diseases in which these morbid sounds are observed. An observation or chapter is devoted to fluids in the chest; another to affections of the chest not indicated by percussion. One, treats of the appearance of the organs on dissection in cases where the preternatural sounds of the chest had been observed. The tenth observation treats of scirrhus of the lungs and its symptoms. The eleventh, of vomicæ in general. The twelfth, of dropsy in the chest; hydrothorax, pleurisy and dropsy of the pericardium. The thirteenth, of copious extravasation of blood; and the fourteenth and last, of aneurism of the heart. In his first observation he strikes the keynote of his subject, when he begins, "Thorax sani hominis sonat, si percutitur." "The thorax of a healthy person sounds when struck." The sound thus elicited from a healthy chest resembles the stifled sound of a drum covered with a thick woollen cloth or other envelope. The most sonorous region is from the clavicle to the fourth rib anteriorly. While undergoing percussion on the foreparts of the chest, the patient is to hold his head erect, and the shoulders are to be thrown back, in order that the chest may protrude, with the skin and muscles drawn tight over it; a clear sound is thus obtained.

One should percuss many well persons in order to obtain an idea of the variation of the percussion noted in individuals of different form and condition. Percussion should also be practised in natural respiration and upon full inspiration. What better directions for learning good percussion does any modern manual upon the subject give? Regarding sound and tone, "Auenbrugger," says Gee, "in a sentence of fourteen words has summed up the acoustic phenomena of percussion 'Sonitus vel altior, vel profundior, vel clarior, vel obscurior, vel quandoque probe suffocatus deprehenditur.' The sound is a tone, clear or muffled, even to complete privation; the tone is of a pitch higher or lower." In treating of percussion of the chest in disease, he says: "If over the foredescribed pulmonary region, we perceive not the foredescribed pulmonary sound, equal on both sides, the force of percussion being equal, we may predicate the existence of disease where the sound is unnatural." "This," as Gee says, "comprises the whole theory of percussion."

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[5] British Medical Journal, vol. lx, 1879.

[6] Gee: "Auscultation and Percussion," 1893.

"If a sonorous part of the chest," he continues, "struck with the same intensity, yields a sound duller than natural, disease exists in that part. If a sonorous region of the chest appears, on percussion, entirely destitute of the natural sound, that is, if it yields only a sound like that of a fleshy limb when struck, disease exists in that region. The duller the sound, and the more nearly approaching that of a fleshy limb stricken, the more severe the disease. The want of the natural sound behind indicates more danger than it does on the anterior and superior part of the chest." In speaking of mental affections as causes of pectoral disease, he says: "I have observed none more powerful in rendering obscure the natural resonance of the chest than the destruction of cherished hopes." This reminds one of Shakespeare's well-known lines:

"She never told her love,
But let concealment, like a worm i' the bud,
Feed on her damask cheek; she pined in thought."

Dr. Clar thinks he came perilously near the discovery of auscultation when, in treating of vomicæ, he says: "Si ad locum, ubi vomica percussionis signo delecta est, volans manus spuenti imposueris, strepitum puris manifeste distingues in pectore interno, idque dum tussiverit æger." "If one lays the hand over the spot where the percussion has indicated a vomica (pus cavity) and has the patient cough, he can clearly distinguish the rustling of the pus within the chest. "If, instead of the hand," says Clar, "he had said the ear, it would have been auscultation."

In distinguishing dropsy (pleuritic effusion) of one side of the chest he says:—"Besides the general signs of this disease, the affected side, if completely filled with water, is enfeebled and appears less movable during inspiration. In this case also the affected side yields nowhere the natural sound on percussion. If the chest is only half filled, a louder sound will be obtained over the parts to which the fluid does not extend; and in this case the fluid will be found to vary according to the position of the patient, and the consequent level which the fluid attains. Under signs of hydropericardium, "The sound in the cardiac region," he observes, "which I have already stated to be naturally more obscure than in the other parts of the chest, is now as completely deadened as if the percussion were applied to a fleshy limb. A swelling is perceived in the precordia which can readily be distinguished by its superior resistance from the stomach distended by flatus."

The foregoing extracts are enough to indicate the clear, orderly and thorough manner in which Auenbrugger developed his discovery and established its principles and application by careful, painstaking and repeated observations. "Scripsi illa quæ sensum testimonio inter labores et tædia iterum, iterumque expertus sum." Little wonder is it that he spent seven laborious years of observation and study in interpreting and applying the new evidence which percussion had revealed to him. When one considers the state of things before the "Novum Inventum"—an entire absence of any definite and exact diagnostic method of determining and differentiating thoracic diseases, and that a group of symptoms or a single symptom was the sole data for a vague diagnosis—he can perhaps realize the enormous advance which Auenbrugger's discovery of percussion and its development and application in the "Novum Inventum" made in the diagnosis of diseases of the chest. The mystery is that it remained so long unrecognized and unappreciated.

CORVISART.

Corvisart, as I have said, was the discoverer of Auenbrugger, and by his translation of the "Novum Inventum" and commentaries upon it, established percussion upon a firm basis, and extended its knowledge. He was also the teacher of Lænnec, the discoverer of mediate auscultation; and thus by this happy coincidence united the two great discoverers, just as their discoveries are inseparably joined in practice. By his magnanimity and justice towards Auenbrugger, and his connection with Lænnec, Corvisart's memory is indissolubly linked with theirs, and shares their immortality, when it might have gradually sunk into forgetfulness if dependent upon his own attainments, as illustrious as these were. Thus virtue has its reward.

While Auenbrugger was spending the latter years of his life in the quiet pursuit of private practice in

Vienna, Lænnec, all unknown to him, was growing up at Nantes and Paris, developing his acute intellect, which, nine years after Auenbrugger's death, was to give to the world the momentous discovery of mediate auscultation which should forever be the complement of percussion. One wishes that the two men might have been contemporaries and known each other. A mutual friendship would have been sure to have followed, they were so much alike in personal character and professional enthusiasm.

(*To be continued.*)

Original Articles.

ALBUMINURIA.[1]

CONSIDERATIONS SUGGESTED BY TWELVE HUNDRED AND FORTY-EIGHT EXAMINATIONS IN NON-RENAL CASES.

BY ARTHUR K. STONE, M.D.,
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ALBUMINURIA is a much considered subject, and one about which practically every clinician and many laymen have decided opinions, and yet one of general importance both from a clinical, and, as it were, its commercial side. The almost universality of examinations for albumin as a routine practice by the physician, and its adoption in life insurance examinations, has led to the discovery that albumin is by no means an infrequent condition in persons either supposably well or certainly not suffering from grave renal trouble. This, together with the division that is being made in the various forms of albumin found in the blood and eliminated in the urine, and although we may believe with Ducleau that many of the distinctions may be due to faulty methods and be rather *chimerical* than chemical, nevertheless, all these things make it necessary to look over the field of our supposed knowledge and experience and restate our position from time to time, so that we may have as definite a working hypothesis as possible.

In France, at the Medical Congress held at Nancy in August, 1896, the prognostic value of albuminuria was one of the subjects which was specially discussed. Also numerous papers have appeared at one time and another upon the subject, all showing a marked diversity of opinion in the interpretation of various well-recognized clinical facts.

As to the best method for testing for albumin, there is probably nothing better than boiling and the nitric-acid tests. I mention the two because any person using either one exclusively is liable to error, as I have seen albuminoid zone of more than a quarter of an inch in thickness form above the nitric acid when no albumin was precipitated by heat. And repeatedly small amounts of albumose are shown by the acid and are, of course, absent in the heat test.

Professor Ott has made a series of comparative examinations in about fifty cases, using sixteen of the tests which are in common use. He found that Spiegler's reagent and the sulpho-salicylic acid gave the clearest results with the minimal amounts of albumin, and concluded that the latter was the most practical for the general physician. Millard and Tanret were very clear, but both in presence of large amounts of urates or pepton (?) give a clouding which, however, will clear on warming. Rosenbach's chromic acid and Jolles's reagent were the least reliable.

The weight of authority at present appears to be that all albuminuria shows a pathological condition and that under strictly normal conditions albumin is not found in the urine.

The reasons for the appearance of albumin in the urine are not clear, neither is the form of albumin perfectly understood at present. The generally accepted idea of a serum albumin is denied, because, say some, serum albumin as an entity is not found in the blood and secondly, it is not diffusible if it was there, and thirdly, the vessel walls are not diffusible membranes, at least in their normal conditions. Therefore, these observers say that albumin is not a simple filtration through the vessels of the Malpighian tufts, excepting, perhaps, in cases of traumatism and very acute processes where the conditions much resemble those of general inflammatory character. Otherwise than this, the presence of the albumin seems to be dependent upon the condition of various albuminoid bodies in the tissues and the condition of the epithelial cells of the kidney. The solution of this problem must come from the pathologists who, with their improved technique in hardening and cutting sections, can be expected in a short time to throw some definite light upon the conditions existing in the renal cells.

Whether or not all the observations of the changes undergone by the proteid molecule in the body tissues are correct, it is doubtless that the proteid material has many changes in its molecular arrangement while in the various tissues, and it is probable that the final katabolic and oxydizing changes leading to the formation of urea, etc., are effected in the epithelial cells of the glands and that the muscles do not reduce the proteid material to its final form. Although urea, which is the form in which the greater portion of the proteid material is eliminated, is probably a synthetic hepatic product, nevertheless, the renal cells doubtless have their part to play in the oxydizing process, in addition to their duty of extracting urea from the blood and excreting various other metabolic products found in distant organs. Should there arise for any reason, such as a deficiency of oxygen from the ingestion of large amounts of fats, sugars and oxygen-consuming foods, an imperfect conversion of the proteids into their end products or should there be an excess of albuminoid material above what the body cells are able to dispose of, these proteids may be forced upon the renal cells and be in greater quantities than the gland cells are able to reduce or the renal cells to handle, and then there is an escape of unreduced albuminoid material into the urine. Or the toxins free in the blood, whether there from the presence of micro-organisms in the infectious diseases, or from drug poisons, or from the so-called auto-intoxication or septic absorption from the intestine or from the presence of unusual albuminoid products due to varying conditions of depressed vitality, whatever the cause, these toxins may cause partial degeneration of the renal cells, whereby there is lessened ability to perform their usual function and which is, therefore, followed by the escape of albumin.

That the matter is dependent upon epithelial changes rather than vascular is of everyday observation. When large amounts of albumin are seen dependent upon degenerative changes, while on the other hand, the most extensive vascular changes can take place in interstitial nephritis without the presence of any albumin whatever, or as is more usual appearing in very small amounts until late in the disease where there is marked degeneration of the renal epithelium.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, April 20, 1898.

The condition first described, due to an overpowering amount of work put upon the epithelial cells, would be in a measure comparable to what takes place in the epithelium of the intestine during digestion. These cells can only take up proteid bodies in the form of pepton, but pepton once within the cells is probably converted immediately to some other non-poisonous form before it is turned loose into the circulation to be utilized by the tissues of the body. In case large amounts of pepton are forced upon the cells, they may be incapable of converting it to non-toxic forms, and consequently some of the pepton escapes into the circulation and produces slight symptoms of pepton intoxication, though the greater part is taken up and converted by the hepatic cells.

Such conditions as have been mentioned may be produced in various ways:

Excess of proteid material in the blood may be produced by excessive albuminoid feeding. Professor Ott made trial in fourteen cases of feeding with raw eggs or prepared egg albumin, and in all but three he had positive results.

Excessive exercise has been said to produce albuminuria by setting free large amounts of material in the process of metabolism. In connection with this assertion it is interesting to note that an examination of the urine of the eight leaders near the end of their ride in the six days' bicycle race at Madison Square Garden resulted in albumin being found in but one of them, and that was a man who had slept a great deal more than the others, but had lived almost exclusively on beefsteak. On the other hand, Muller observed that in a number of bicyclists, both professional and amateur, that albumin with casts could be induced by a few hours' ride, while it was absent after a few days' rest.

Drug action is shown by an observation of Welander, when in one hundred syphilitics examined before treatment, seventeen had albumin, all with single or few hyaline casts; but after inunction treatment there were only three who did not show albumin and casts and about a third showed the presence of as many casts as are usually seen in a case of chronic nephritis. Toxic conditions producing slight albuminuria are common after practically all the bacterial diseases.

Another interesting report was made by H. Liepmann in cases of delirium tremens. Here there are two factors to consider, one the action of the poison alcohol on the cells and the other the condition of the central nervous system. Of 72 cases tested in the midst of the attack, 56 or 76 per cent. had albuminuria. Of these seven died, five of whom had distinct nephritis while two had none. Of the remaining 49, sixteen were found to have persistent albuminuria, while the others cleared soon after the attack. In very few of the cases was there any fever during the attack but the amount of albumin seemed to follow the pulse curve, and disappeared either with the crises or within a few days.

By itself, albumin is of no prognostic value; it may be present in very large amounts, as in acute cardiac dilatation and eclampsia, and yet disappear, the amount of albumin giving no idea either of the immediate outcome or of the remote conditions which may ensue. On the other hand, smallest amounts or even entire absence of albumin is not incompatible with the most extensive conditions of renal degeneration. The whole matter may be summed up by saying that albuminuria when present is but one part of the picture, and needs the other facts to enable one to give a judgment upon the case at hand; especially to be considered of importance is the total urinary excretion, and the amount of solids, especially urea, which the urine contains, together with the general physical examination.

Time was when it was thought that casts were of great prognostic value and many clinical teachers insisted that it was of the greatest importance to search for casts in suspicious cases, even if no albumin were present. The use of the centrefuge has seemed to show that single casts can be found in almost every urine, certainly in a much greater proportion of cases than show albumin in the urine, and the deduction must be made that a few hyaline or fine granular casts of small diameter, with or without an occasional epithelial cell attached, show, considered by themselves, absolutely nothing as to the condition of the kidney.

These general principles being granted the question yet remains, What is the meaning of the presence of small amounts of albumin found in the urine? Have they any prognostic value whatever, or are they to be disregarded? Shall the albumin remaining after a nephritis be considered serious and indicative of future danger, are the cases of cyclic albuminuria pre-nephritic or do they constitute a condition by themselves? Is the so-called *albuminuria minima* seen in young people of "gouty or rheumatic tendencies" apt to develop into renal complications later, or is it an indication of a developing tuberculous condition and the first manifestation of the toxic action of the tuberculin upon the system? All these are much vexed questions at the present time and will need considerable time and observation to settle, for they have been but recently formulated in the light of our present knowledge. For example, cyclic albuminuria occurring in persons of good health has been known and accurately described as to the symptoms and the amount of albumin excreted since the days of Pavy, but only a few observations of cases extending over a number of years have been made and these are contradictory. One case has been known to develop later into a red contracted kidney; another at the Hôtel Dieu remains in good health after eight years, the only change being that the albumin, which was albumose in the beginning, is now ordinary albumin.

In the case reported by Long, of Buffalo, there has been a complete disappearance of the albuminuria, although several pregnancies have intervened.

As to the simple albuminurias, many who have been rejected by life insurance examiners have been under observation for long periods without any change in the amounts of urine, and certainly no tendencies to develop renal conditions. But in all such cases as Symonds suggests the "expectation of life" must always be taken into consideration. Others, of course, have become nephritic or developed early in life some condition which it would seem that the albuminuria had foreshadowed. The man who has had one or two such experiences is apt to be biased in his judgment in one way or the other. And it really needs at the present time that there should be some united effort made to collect such cases in large numbers and to attempt to draw some general conclusions. As an example of what I mean, Bickerton, of New York, has been able to follow 114 out of 148 cases of persons rejected by life insurance companies for albuminuria during a period of eight years, and in this time twenty of the number have died. In none of these were casts found nor was the patient in general "bad" condition.

In looking over cases where there is any attempt to draw conclusions in regard to the amount of albuminuria, one finds that the statisticians have written from greatly differing points of view. One man from the nature of his practice, whether clinical or laboratory, sees urines which from the age of the patients, manner of life and other general factors show large percentages of albuminuria and draws his inferences accordingly, while others looking over healthy persons, or where there is but a comparatively slight deviation from the normal arrive at entirely different figures, and apply an entirely different process of reasoning to their results. This will be appreciated better by a few examples.

Dr. W. Moore reports that in over 8,000 life insurance reports, he found about six per cent. of the cases had albumin. This is the lowest amount reported, and is derived from observations of persons who are supposed to be healthy, although this figure would probably be lowered by elimination of those who really should not have attempted to pass an examination. Symonds says he now finds albumin in about five per cent. of his cases, but does not give any numbers on which he bases his statement. In a series of 635 cases taken from artillery men in the Swedish Army, young men in supposedly good health, fifteen per cent. showed albuminuria. Explanation here seems difficult, for the possibility of venous stasis by dilated soldier's heart does not seem probable as the amounts noted were not increased so far as observed by exercise, amount of alcohol or kinds of food ingested. Another series of cases showed that out of 100 cases of obesity, there were 26 having albumin; of 100 diabetics, there were 33, and of 100 gouty subjects, 58 had albumin. In the former cases, degenerative changes had evidently not developed, while in the latter when there was well-marked gout, degenerative conditions would be expected to be making their appearance throughout the body. Dr. F. C. Shattuck found albuminuria in about 74 + per cent. of a series of cases, and drew his conclusions not as to the absolute longevity of the patient, but as to the immediate conditions.

My series of cases, which numbers 1,248, was taken from the Woman's Out-patient Clinic of the Massachusetts General Hospital and represents a given class of patients, that is, working girls and women and the wives of industrious laborers and clerks, people who occupy about the same station in life and whose surroundings are very similar. From this list I excluded those who were beyond doubt nephritic cases or cardiac cases with any sign of dilatation and venous stasis, also those cases where there was well-marked tuberculosis or other diseases accompanied by well determined degenerative conditions. This left to be considered, for the most part, cases where anemia, hard work, enteroptosis, pelvic conditions, dyspepsia, etc., many cases in the indefinite stage where observation alone extended over considerable period, would determine whether the condition is simply a transitory one or due to the advent of more serious trouble. The report is interesting as being exclusively women, whereas most of the tables coming especially from army and insurance statistics have been from men, or coming from hospital reports have been mixed.

For the most part, the urine was from cases which showed some special symptom or symptoms which suggested the desirability of a urinary examination, although, if there were time and force enough I would have some urinary examination of every patient, so as to get hold of the one or two renal cases which otherwise escape recognition if not entirely, at least for several weeks. At one time such general examination was made and at the same time enough cases catheterized to make sure that there was no increase in the amount of albuminuria in freshly-passed specimens from leucorrhea, etc., as is often asserted to be the case. All menstruation cases were, of course, eliminated, and cases where there was cystitis. After filtration, the nitric acid and heat tests were used in combination, wherever there was any doubt. The total number of cases was 1,248 and the total number of times that albumin was found was 298, or 23.08 per cent. The highest percentage was to be found in early life, in the time when it has been observed that the so-called transitory albuminurias are most apt to occur. For the next three decades the figures are practically the same (22 + per cent.), but when the age of fifty is reached, there is a distinct advance in the number to 26 + per cent. as would be expected from the beginning of senile changes.

The importance of the consideration of these cases lies in the small number of patients found where albuminuria was a symptom. The patients were distinctly not well, and yet but 23 per cent. showed albumin.

Age.	Total cases.	Albumin.	Per cent.
15-20	98	31	31.6
20-30	418	96	22.8
30-40	298	66	22.1
40-50	238	54	22.7
50-60	141	37	26.2
60-70	49	13	26.5
70+	6	1	16.6
Total	1,248	298	23.08

Alcohol, excessive exercise and excessive feeding could have but very little influence in determining the results in these cases. A large number of the albuminurias were found to be distinctly transitory in character, as was shown by later examination and attempts to study the conditions shown in the twenty-four hour amount of urine.

I have come to consider those cases presenting persistent, slight albuminuria as, on the whole, less tractable to general treatment and hygienic measures than those not having this symptom. That the albuminuria, while it showed no indication of renal disease *per se*, yet was a distinct danger-flag showing conditions of mal-oxydization, which pointed to the need of the most careful examination into condition of the circulation and possible causes of mal-assimilation of food in the attempt to establish the cause of the conditions under consideration, always remembering that no albuminuria is physiological.

Further, that the complete examination of the urine is of but little additional value in such cases of small amounts of albumin compared with the knowledge that may be gained by careful observation for several days of the amount of urine passed in twenty-four hours, its specific gravity and acidity, and if possible, the total amount of urea excreted.

Such observation of the gross urinary conditions, together with careful attention to the condition of the circulation as manifested by the heart-sounds and strength of the pulse, condition of the arteries and a consideration of the factors leading to any digestive disturbance; in other words, careful study of the general clinical conditions in the great majority of cases, give a much clearer insight into the conditions of the case than exact knowledge regarding minute microscopic or chemical changes of a single specimen of urine.

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THE QUESTION OF RESPONSIBILITY IN CASES OF SEXUAL PERVERSION.[1]

BY FRANCIS W. ANTHONY, M.D.,
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THE question of responsibility in cases of sexual perversion seems to have met with little consideration either in medical or legal circles, in the former less perhaps than in the latter, for here certain broad principles govern the matter, the obscurity being in the application to individual cases. This is due in part, doubtless, to the instinctive aversion to things impossible to the normally constructed mind, and, perhaps, more to the rarity with which these cases come under the observation of any one man, unless an expert in that particular line. The importance of the question is, however, great. To condemn to punishment an irresponsible party is unjust; to allow to go unpunished a responsible rascal is poor public policy; to view the correct answer with indifference is unworthy of thoughtful and scientific minds.

I shall endeavor in this paper to recall to your attention certain facts already well known, to illustrate my subject by a few clinical cases that have come under my observation, and to discuss the question of responsibility from a medico-legal standpoint.

The sexual instinct in a given being is inherited from two diametrically opposed appetites, the male and the female — one active and aggressive, the other normally passive and receptive in tendency. In the early life of the embryo the embryonic possibility is equal; as time goes on an unknown factor determines sex, but even then and for much time afterward, what I may term *latent* sexuality is all that is normally possessed. At the time of puberty, in normal development, there comes an impulse to genital stimulation, and, later, the various methods of acquirement of this stimulation are learned and, later still, the method of receiving the greatest pleasure. We may roughly divide the elements in the case into purely physical — inherited tendency and physiological development — and psychical. The latter is manifestly a matter of education. Even if you assume a material basis for mental operations, education plays so important a part in the development of that basis that it must be considered a potent factor. Inheritance has, therefore, a distinct effect, first by causing certain tendencies to physical conformations and development, second by transmitting a certain amount of the effect of previous education in psychical tendencies. These influences, physical and psychical, may be both *plus* from each parent, both *minus*, or antagonistic in various combinations.

The determination of the *direction* of sexual desire is largely educational, the physical dealing more with its simple existence. An illustration of this is the fact that little or no desire is felt toward a mother or a sister, since the "mental attitude" toward these relations is established long before the latent sexual appetite becomes potent, and this appetite is maintained under normal conditions, unless isolation may allow the physical element to dominate.

Now, when the physical development accentuates the desire, the question of education is of paramount importance, and it is at this time of puberty that a wrong direction given to desire, either by accident or design, may be the factor that determines for all time the sexual life of the individual, assuming, of course, a mental condition normal up to that time, and a normal physical environment.

An incongruous sexual appetite once established, opposing influences, if sufficiently strong, may overthrow it. These influences may be educational, moral, or punitive, the latter, as a rule, settling the question of indulgence rather than that of tendency; the moral acting much in the same way; while the educational, by substitution, may cause entire change of direction; although the tendency of sexual perversion is towards continuance, the length of its existence being important in this consideration.

From what I have said you can easily see that congenital perversion would be comparatively rare. You might possibly include under this head those cases of congenital mental degeneracy, a manifestation of which is more marked at puberty — but here the educational element must be considered — and a few cases of perversion in young children, due generally to pathological local conditions. Chaddock says, "Psychosexual anomalies are developed upon a degenerate constitution, which may commonly be traced to a neuropathic disposition inherited from ancestors," but note he says, "developed upon," which would beg the question at issue.

Von Ebing divides the chief cerebral neuroses which might be concerned in sexual perversion into:

"(1) Paradoxia; the sexual excitant occurring independently of the physiological processes in the generative organs.

"(2) Hyperesthesia; abnormally increased impressionability of the *vita sexualis* to organic psychical and sensory stimuli, central, as in nymphomania and satyriasis, or peripheral.

"(3) Paresthesia, excitability of the sexual functions to inadequate stimuli, the domain of psychopathology.

"Paradoxia is illustrated by sexual instinct in childhood and in old age; hyperesthesia may be caused by local irritation and may be intermittent or periodic. The diagnosis of paresthesia depends upon the investigation of the whole personality of the individual and the original impulse leading to the act to distinguish perversion (disease) from perversity (vice)."

A moment's consideration will make clear to you that neither hyperesthesia, paradoxia, or paresthesia contains in itself a *necessity* for perversion; each may tend to gratification in natural channels. The possession, however, of any one of these gives an impetus to a perversion once acquired, and a tendency toward gratification that seizes upon a present opportunity though out of the normal channel, and may well form a habit that becomes, later, imperative in its direction.

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[1] Prize essay read before the Essex North Branch, Massachusetts Medical Society, May, 1898.

The ordinary forms of perversion are termed: "Sadism, the association of lust and cruelty; masochism or passivism, the association of endured cruelty and violence with lust; fetichism, lust associated with clothing; homosexuality, sexual leaning toward members of the same sex; bestiality; pederasty; sodomy; necrophilia and incest."

Some of these, however, evil though they may be in their effect on the individual, have but little interest for the community at large, since they injure only the possessor of the perversion; others, when carried to an extreme, have general interest, while still others are always of public concern, since they may injure at any time the lives or the happiness of those dear to us.

Sadism carried to an extreme may become lust murder. Homosexuality, bestiality, pederasty, sodomy and necrophilia are debasing in their general effect. Incest may be cruel, and certainly is demoralizing.

The legal punishment of unnatural acts is imprisonment in the State-prison for the term not exceeding twenty years, and the statute is quite broad: "Whoever commits the abominable and detestable crime against nature, either with mankind or with a beast" shall be thus punished.

The determination of responsibility from the legal standpoint presupposes the basis of conscience, an intuitive power of discrimination between right and wrong; this being absent irresponsibility is the necessary consequence. It is a fundamental maxim of criminal law that "the act itself does not make a man guilty, unless his intentions were criminal." The power of discrimination being present, the question of dominating influence of perversion seems to enter into the matter but indirectly; the main point is, did the accused at the time of the illegal act know that he was doing wrong; if so, whether he be judged mentally unsound or not, he was legally responsible, and for the failure to obey the dictates of his conscience is amenable to punishment. Of course this brings in the question of relative and absolute right and wrong. Are we to judge a person from his conception of right and wrong or by an absolute standard? The mother on the banks of the Ganges, who hurls to the crocodiles her infant, does what she thinks is right. The majority of thinking minds would disagree with her. The absolute standard can be absolutely known only by an Infinite Being. The relative standard determines responsibility. The standard set up by the custom of the environing influence is the one accepted by the individual conscience, for I must doubt an intuitional conscience so acute that it can override its environment in the establishment of a standard. As I have said, this individual conscience, as regarded by the legal mind, is not subject to irresistible influence. "The object of law is to help control a so-called irresistible impulse"; or as one judge put it in substance, in answer to such a plea, "I, too, have an irresistible impulse to sentence you," etc. Civil incompetency does not bar out criminal responsibility, — this is almost self-evident. In the consideration of the matter of responsibility the design of the person under investigation, the adaptation of the means employed to the end accomplished, his appreciation of the nature of his act and its consequences, the existence or absence of a distinct motive, are all to be given due weight.

I will now take up a few cases of perversion that have come to my knowledge, classify and discuss them briefly.

Case I. G. M., male, age forty-nine, an inmate of a public institution; family history negative, unless it be of importance that his mother died of paralysis of the brain. G. went to school from 1848 to 1865, after which he did housework at home, and in various families in the city where he lived. He states that he never was very sick, never married; had his first sexual connection in 1861, in which year he also began to use the male sex improperly; was led into this by others who induced him to perform masturbation upon them, and paid him small sums. About the same time he began to practise lower and more vile methods, in which he persists; is seldom paid for this, but does it for the enjoyment it is to him, although he denies the orgasm which he claims can be produced under normal stimulation; prefers young men with black hair and blue eyes; dress makes no difference. The physical examination of G. was largely negative. The penis was natural, the scrotum somewhat flabby, testicles very small. The keeper of the institution says that G. is mentally weak, as is indeed manifest in his manner and conversation; he cannot discuss things intelligently; masturbates constantly, but denies it even when caught; is eager to make the acquaintance of new men and boys; after he succeeds in his desires is very sick and vomits. He says that G. lies about women attracting him, and has been known to flee from their solicitation. His physical health in general is poor; has cough, poor appetite, nervous, almost always awake at night. A man who has known him since childhood says that he was the same when at school. His brother is a man of ordinary intelligence.

This case is undoubtedly a case of homosexuality, due to a congenitally weak brain, the sexual direction having been perverted by solicitation at the time of puberty, and becoming afterwards dominant. Such a person although distinguishing right and wrong, for he never solicits openly, would be unjustly sent to prison, for the mental power is so weakened congenitally that the dominant perverted sexual instinct overrides the glimmering conscience. Repeated punishments, once that of being hurled headlong into a mud pond by an indignant man whom he had solicited, have exercised no restraining effect. Doubtless in prison — no punishment for him — he would continue his practices did opportunity present itself, and would at once renew them on regaining his liberty. Restrained he should be, in the interests of morality and of the young. An asylum would be the fitting place for him, or a public institution, like the one he is now in, if he can be somewhat watched.

Case II. This case is much different. M. C., merchant, age forty-five, seen by me in consultation; family history distinctly neurotic and somewhat tuberculous. Previous general history negative. Consulted his physician for excessive sexual excitement and desire. The following history was obtained: Always passionate, masturbated when a boy at intervals from twelve to twenty; after the act an uneasiness, existing previous to its accomplishment, was allayed, and a period of depression followed, succeeded by ease and comfort for an interval, that gradually shortened. After marriage was excessive in indulgence, and, as time went on, tended to perverse means of gratification; is the father of four children, all healthy, the oldest a girl now sixteen, the youngest eight years; annoys his wife even now by importunity; four years ago began to notice diminution in power with increased desire; never had venereal disease; two years ago noticed failure of bladder to fully eject its contents; at present emission often takes place with partial erection; desire increased by sedentary employments; mental condition good, except mind somewhat centred on condition; judgment good, and has good rating for intelligence among his business associates; his wife states that his importunity is increasing, his vigor decreasing, his excitement extreme.

Physical examination absolutely negative, except that his testicles are small and apparently atrophied; his prostate gland much enlarged, and this, together with the seminal vesicles, quite tender to rectal touch.

Diagnosis. — Chronic inflammation of prostate gland and seminal vesicles, consequent peripheral sexual irritation, producing a hyperesthesia, a condition starting probably in boyhood as a result of masturbation, and increasing as years went on by unhygienic habits. The etiology of the tendency to perversion, which was not extreme, I was unable to bring out in quite a careful cross-examination. M. C. showed, however, a leaning toward sadism, of which his wife bitterly complained.

This man with a peripheral origin for his trouble, and a mental state but little removed from the normal, had no irresistible impulse. Should he ever, remaining under the present conditions, commit an illegal act, he would be justly held responsible for it; for, while perversion might tempt him and sadism attract him, he is, in my judgment, capable of resisting them both, and would be a proper subject for legal punishment were he liable to its infliction.

The prognosis given was fair; the treatment suggested: bromide of potassium to the point of saturation, then a gradually diminishing dose; the cold douche to the perineum, sexual indulgence in relative moderation but by strictly normal methods; mental employment, and severe physical labor out of doors as much as possible. Eight months later he was reported to me as much improved, though still showing, to a degree, his tendencies.

CASE III. C. J., forty-eight years old, male. Family history as regards father is negative; mother in early life bright and promising, is said to have been a belle in the community, but by a life of dissipation fell to the lowest depths of humanity, living in one room with her son, with one bed and, by common report, as his mistress, an allegation denied by the parties interested; one brother died young of paralysis. C. is now forty-eight, has been a rugged man, he has used alcohol considerably; went to school when a boy, had a common school education. When about sixteen, in the absence of his father and mother from home, he was coaxed into the bed occupied by the hired girl, which visit was often repeated without solicitation. Has always been excessive in sexual relations, illegally, since he was never married; has had gonorrhea twice; has no inversion; is somewhat perverse in his relations. The low and vile appeal to him more than those higher in the social scale; is a man of very limited mental capacity, commonly regarded as mentally deficient. In denying sexual congress with his mother, his reason was not the inherent wrong of the act, but the lack of necessity therefor owing to other surroundings. Still he is said to have as much as admitted these relations.

This case is that of a man congenitally deficient in mental power, with sexual appetite stimulated early by female seduction, and indulged without moral restraint of training or environment. His illegal acts, if such were committed, could, however, be properly punished, for while, doubtless, the enormity of the offence would not be normal in its appearance to his mind, still he has a conception of right and wrong and can distinguish between them.

CASE IV. I was asked three years ago to see D. S., a boy of five, who for two years had been addicted to the habit of masturbation. He had been judiciously treated by the family, reasoning and firmness without extreme severity had been faithfully used. The habit had increased against apparent real efforts on the part of the boy to overcome it, and of late a tendency to perversion had begun, his younger brother of three being made the active or passive agent of sexual gratification. The night clothing was constantly soiled, and the boy's habit of thought was rapidly taking a fixed direction. The mother was dead of phthisis, and was of a phthisical family; the father's history was negative, except that he was a passionate man. On examination of the boy I saw no evidence of central lesion, and regarded the case as one of paradoxia from a local hyperesthesia, induced in all probability by an irritation due to balanitis and a prepuce that could not be retracted over the glands. The family had about made up their minds to place the boy in a reformatory institution, in fact I was called in to advise as to what institution they should choose. I advised delay, circumcision, and the absolute separation of the two boys, continuing at the same time all the uplifting, mind employing and encouraging methods previously used. We were aided by the apparent desire on the boy's part to assist us, he saying, "I do not want to do this but when the fit comes on I seem to have to." Six months ago the boy was reported to me as normal in every way, free from bad habits, and with a mind happily employed in other than sexual directions.

This is a case of paradoxia from hyperesthesia, due to peripheral irritation. Removing the cause cured the boy. I have not the slightest doubt, but that, untreated, he would have become a sexual pervert of a marked type.

It might be said in reference to these cases and to this subject, that the cases were so rare and the subject so unfrequently requiring treatment, as to make it of little practical interest. One who makes such an assertion has little idea of the underground life of our cities. I have been told that there is in a community not far removed — and I am informed that the fact is true of nearly every centre of importance — a band of urnings, men of perverted tendencies, men known to each other as such, bound by ties of secrecy and fear and held together by mutual attraction. This band to whom I refer embraces, not as you might think, the low and vile outcasts of the slums, but men of education and refinement, men gifted in music, in art and in literature, men of professional life and men of business and of affairs. To themselves, by the attraction of their presence and surroundings, they draw boys and young men, over whom they have the same jealous bickerings and heart burnings that attend the triumphs of a local belle. Quarrels for preference are frequent; yet must, by the nature of things, be kept to themselves. The triumphant suitor carries to his house and his room his innocent victim, and then begins a course of sexual perversion, the teacher an adept, the pupil a novice, until a new star arises, or satiety compels a rest. The sexual propensity of the young is perverted, or may be inverted, and a life is ruined almost beyond hope of recovery from the low plane to which it must fall. Difficult of detection as such acts are, difficult of legal proof as they must of necessity be, committed by men most, if not all, of whom are legally and morally responsible, is it not of importance that the subject be brought to the attention of the general practitioner, that he may be on the alert?

It may fall to the lot of one of you to be the active means of destroying such a school of vice and perversion. Nay, more than that, it may be your son or the son of your intimate friend whom you are called upon to rescue. If it comes in the line of your duty to take a hand in the overthrow of such a circle, I beg of you to let no dread of notoriety, no consideration of position, standing, or influence come between you and the fulfilment of such a duty. Exercise all due charity, have the suspected and accused submitted to a most thorough examination to determine his responsibility, and then have him removed from the community to his proper place, be it asylum or be it prison.

The conclusion that I reach from the study of the subject is this: The question of responsibility in these cases depends largely on the ORIGIN of the trouble; if *peripheral*, it is rare that the patient is irresponsible. I do not maintain that the brain may never become secondarily affected; if *central*, responsibility may be more doubtful or may be decisively negatived, though here again the rule cannot be a fast one. With this, however, as a general rule the matter of decision, while simplified, is none the less complex. In many cases it demands careful, intelligent, trained scrutiny; it demands the life history of the person in question to the minutest detail, from the manner of birth through the physical and psychical development to the age he may have attained, and careful consideration of hereditary influences, the circumstances of environment and education; it demands scrutiny of manner, weighing of probabilities, determination of veracity; it demands thorough and exhaustive physical exploration. It is concerned, to a considerable degree, with things intangible; it requires often the exhibition of diagnosis by exclusion, — a thing that in itself implies a logical mind and a power of reasoning. The lawyer, trained to reasoning, and the expert physician, educated to observation, can well work hand in hand. The general practitioner, with his knowledge of family traits and tendencies, physical and mental, with his daily observation over, often, quite a period of time, can be and is of considerable assistance to both. The decision thus determined upon should be an important factor in the evidence presented to the judge or to the jury.

I make two points of insistence:

(1) Prophylactic work is in the line of proper sexual hygiene and, above all other times, at the period of puberty — and here, gentlemen, comes your opportunity — if you hold to your families that ideal relationship which Dr. William McClure held to his Scotch friends, if you are welcome to their fireside in times of health and happiness as well as in times of sadness and distress; if you are, in the highest and truest sense, their medical advisers — and I know many of you are — you may, by your watchfulness and your advice, do much to reduce the number of those in the community who are either vicious or the victims of the vicious.

(2) This point of insistency, second in place, but possibly first in importance, is: Responsibility should be fully established before legal punishment is inflicted. The establishment of this fact requires the consideration of medical as well as legal matters, and is often an affair for expert inquiry.

While it has been said that no undisputed definition of responsibility has been legally established, the one which I have indicated to you is the one generally accepted — the power to distinguish between right and wrong in a given case — simple in phraseology, but, as you have perceived, most complex in determination.

THE PRINCIPLE AND LIMITATIONS OF THE HOME MODIFICATION OF MILK.[1]

BY JOHN LOVETT MORSE, A.M., M.D.,

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It must be admitted, I think, that the only proper and practicable substitute for human breast-milk in the feeding of infants is some modification of cows' milk. The following comparative table of human milk and cows' milk shows along what lines cows' milk must be modified in order to resemble human milk.

	Fat.	Sugar.	Proteids.	Reaction.	Sterility.
Human milk . . .	4.00	7.00	1.50	Alkaline	Sterile
Cows' milk . . .	4.00	4.50	3.85	Acid	Not ster.*

* When obtained by child.

The acidity is easily corrected by the addition of an alkali, preferably lime-water. The entrance of bacteria can to a large extent be prevented by care in obtaining the milk and their toxic action inhibited by sterilization or Pasteurization. The deficiency in sugar is easily made up by the addition of a sufficient amount of milk-sugar. The difficulty comes in the fat and proteids. for, while the percentage of fat is the same in both cases, that of the proteids is much higher in cows' milk. Any dilution of the milk to lower the percentage of proteids must, therefore, affect that of the fat also and render it too low. Proper modification by simple dilution is, therefore, impossible. In some way the percentage of proteids must be diminished while that of the fat is retained unchanged. This is rendered possible by the fact that when milk is separated, either by gravity or by centrifugalization, the sugar and proteids remain nearly equally distributed throughout the mixture while the fat is very unequally divided, being almost entirely contained in a certain small portion. It is upon this principle that the whole process of modification, both in the laboratory and at home, is based.

It has been found that when average cows' milk has been set for six hours that the composition of the upper one-quarter and lower three-quarters is as follows:

	Fat.	Sugar.	Proteids.
Upper one-quarter	10.00	4.50	3.85
Lower three-quarters . . .	0.20	4.50	3.85

It is upon these average figures of the composition of the upper one-quarter and lower three-quarters, obtained from milk after setting six hours, that the formulæ which I am in the habit of using in the home modification of milk are based. It is evident, however, that these figures are not constant but must vary with the composition of the specimen of milk set. No modification of milk based on them, therefore, is absolutely accurate.

In order to obtain the formulæ necessary for the preparation of modified milk at home it is necessary to think and calculate in percentages of fat, sugar and proteids and not in quantities of upper one-quarter, lower three-quarters, sugar and water. The various quantities of the different ingredients of the mixture must not be regarded as the primary factors but merely as the results of the problem. They represent not the ultimate elements of the food, but only the means by which these elements are obtained. In this way only can even approximately accurate results be attained. In fact, the scientific feeding of infants in general is impossible except on the percentage basis of computation.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, April 20, 1898.

In calculating any formula for the home modification of milk it is first necessary to determine the percentages of fat, sugar and proteids, the alkalinity and the total amount for twenty-four hours desired. Suppose a twenty-four-ounce mixture with 3⅓ per cent. of fat, 6½ per cent. of sugar, 1¼ per cent. of proteids and of 10 per cent. alkalinity is desired. As already stated the calculation is based on the average composition of the upper one-quarter and lower three-quarters of cows' milk after setting six hours, that is,

	Fat.	Sugar.	Proteids.
Upper one-quarter	10.00	4.50	3.85
Lower three-quarters . . .	0.20	4.50	3.85

The first step is to get the proper amount of fat. This must evidently be obtained from the upper one-quarter. The amount of upper one-quarter required is calculated by the following comparison. — Amount of upper one-quarter wanted : total twenty-four-hour amount : : per cent. fat wanted : per cent. fat in upper one-quarter, that is

$$x : 24 : : 3\tfrac{1}{3} : 10$$
$$x = 8$$

Therefore eight ounces gives the required percentage of fat. This evidently simply amounts to a dilution of the upper one-quarter, in this instance in the proportion of one to two.

In obtaining the proper percentage of fat, however, certain percentages of sugar and proteids have been necessarily acquired also. It is next necessary to determine what these percentages are. As the process thus far has been merely one of dilution it is evident that the proportions of sugar and proteids must vary directly as the proportion of fat. Mathematically expressed — Per cent. of sugar and proteids obtained : per cent. of sugar and proteids in upper one-quarter : : per cent. of fat obtained : per cent. of fat in upper one-quarter; or per cent. of sugar and proteids obtained : per cent. of sugar and proteids in upper one-quarter : : ounces of upper one-quarter used : total amount in ounces. In this instance the dilution is one to two and the percentages of sugar and proteids are obtained by dividing those of the upper one-quarter by three; that is, sugar, 1.50 per cent. and proteids, 1.28 per cent. Eight ounces of the upper one-quarter in a twenty-four ounce mixture thus gives the following percentages:

Fat.	Sugar.	Proteids.
3.33	1.50	1.28

This gives practically the desired percentage of proteids also.

The percentage of sugar, however, is still 5 per cent. less than the desired 6½ per cent. This is easily calculated, 5 per cent. of twenty-four ounces being one and one-fifth ounces. This is about equal to seven level teaspoons. The 10 per cent. alkalinity is also easily reckoned, 10 per cent. of twenty-four ounces being two and a half ounces. That amount of lime-water is therefore added. The amount of liquid is still too low, however, as eight ounces of upper one-quarter and two and a half ounces of lime-water only make ten and a half ounces. Hence thirteen and a half ounces of water must be added to make up the total quantity of twenty-four ounces.

	Fat.	Sugar.	Proteids.	Alkalinity.	Quantity.
Upper ¼, 8 ℥	3.33	1.50	1.28		8 ℥
Milk-sugar, 1 1-5 ℥		5.00			
Lime-water, 2½ ℥				10	2½ ℥
Water, 13½ ℥					13½ ℥
	3.33	6.50	1.28	10	24 ℥

The weak point in the method detailed above is very evident, namely, that with milk separated by gravity it is impossible to get a low proteid with a high fat. This is, of course, due to the fact that in any dilution of the upper one-quarter the relation of the percentage of proteids to that of fat must remain a constant one. It is impossible, for example, to make a modified milk by this process containing 4 per cent. of fat and 0.75 per cent. of proteids. For 4 per cent. of fat means practically a one to a one and a half dilution; that is, dividing the formula for the upper one-quarter by two and a half. This gives a percentage of proteids of 1.54.

This difficulty is overcome in the laboratory, and may be overcome at home, by the use of centrifugalized cream containing a higher percentage of fat. The formula of centrifugalized milk, the cream of which contains 20 per cent. of fat, is as follows —

	Fat.	Sugar.	Proteids.
Cream	20.00	4.00	3.40
Skim	0.10	5.00	4.00 (approximate).

By using cream of this percentage of fat a milk can be prepared containing a percentage of proteids as low as 0.68 in combination with 4 per cent. of fat, the same principle of division being applied.

It is possible, however, with milk separated by gravity to obtain high percentages of proteids in combination with a low percentage of fat, the additional proteids being provided by the lower three-quarters. Suppose, for example, that in the previous formula 2 per cent. of proteids is desired instead of 1.25. Eight ounces of the upper one-quarter will as before give —

Fat.	Sugar.	Proteids.
3.33	1.50	1.28

0.72 per cent. of proteids are still necessary and must be obtained from the lower three quarters which is practically free from fat. The amount of lower three-quarters required is calculated on the same principle as that for the upper one-quarter; that is, amount of lower three-quarters wanted : total twenty-four ounce amount : : per cent. of proteids wanted : per cent. of proteids in lower three-quarters, that is,

$$x : 24 : : 0.72 : 3.85$$
$$x = 4\tfrac{1}{2}$$

Therefore four and a half ounces of the lower three-quarters gives the extra amount of proteids required. It also, however, gives an additional amount of sugar, which, calculated as before, amounts to 0.88 per cent. These percentages added to those obtained from the upper one-quarter give —

Fat.	Sugar.	Proteids.
3.33	2.38	2.00

4.12 per cent. of sugar is still lacking. This, calculated as before, is provided by an ounce of milk-sugar. Two and a half ounces of lime-water furnishes the alkalinity and nine ounces of water makes up the desired quantity.

	Fat.	Sugar.	Proteids.	Alkalinity.	Quantity.
Upper ¼, 8 ℥	3.33	1.50	1.28		8 ℥
Lower ¾, 4½ ℥		0.88	0.72		4½ ℥
Milk sugar, 1 ℥		4.12			
Lime-water, 2½ ℥				10	2½ ℥
Water, 9 ℥					9 ℥
	3.33	6.50	2.00	10	24 ℥

This method must, of course, be utilized in the preparation of milks containing moderate or high proteids from centrifugalized milk. Several useful modifications, containing a low percentage of fat in combination with a high percentage of proteids, may be made by the simple dilution of whole milk with the addition of milk-sugar, lime-water and water.

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Clinical Department.

A CASE OF HEMORRHAGIC PERICARDITIS DUE TO THE PNEUMOCOCCUS: ASPIRATION; RECOVERY.[1]

BY GEORGE G. SEARS, M.D.,
Instructor in Clinical Medicine, Harvard Medical School.

S. B., a well-developed Italian laborer, twenty-three years old, was admitted to the City Hospital, June 19, 1897, suffering from acute rheumatism, the left ankle and both wrists being red, swollen, hot and painful. The whole left side of the abdomen was covered with erythematous patches, and numerous blotches of a similar character were also noticed on the back. Except for a soft systolic murmur at the apex, transmitted into the axilla, an accentuated pulmonic second sound and the presence of fine moist râles at the base of the lungs, physical examination was negative. The temperature was 100° F. and the pulse 90, regular and of good volume. Under the use of salicylates, the swelling of the joints rapidly subsided, and on the 23d he was apparently convalescent. Two days later, however, the rheumatic pains and the erythema returned and the temperature rose to 102.2°. To condense the history of the next two weeks, he developed a pneumonia of the left side and a pleurisy with a small effusion in the right. Rough murmurs were heard over the precordium which were indistinguishable in the character of the sounds from those of endocardial origin, but from their variation from day to day in time and position probably arose in the pericardium. The area of precordial dulness gradually increased laterally, until it extended fully two inches to the right of the sternal border and on the left merged into the dulness of the left lung. On July 11th in the presence of a pneumonia on the left side and of a pleurisy on the right, with a high and irregular temperature a pulse-rate between 110 and 120 and respirations between 40 and 56, it was decided to attempt to give some relief to the patient by aspirating the pericardium, which was done in the fourth interspace, about one inch from the right border of the sternum. A hollow needle was introduced and ten ounces of fluid withdrawn, which Dr. Leary reported as containing much blood, numerous polynuclear and mononuclear cells with an occasional endothelial cell, the polynuclear being frequently arranged in clumps. A culture showed a growth of pure pneumococci. Three days later the precordial dulness still extended two inches to the right of the sternum, but the cardiac sounds were more distinct. The temperature continued to run an irregular course with marked morning remissions, but the excursions were not so great. On August 17th it returned to normal and from that time it rarely exceeded 99° in the evening, although once or twice it rose as high as 100°. In the morning it frequently fell to 96.4° or 97°. The fluid in the right chest increased somewhat and on July 30th an unsuccessful attempt at aspiration was made.

The patient gradually improved and was discharged September 14th. The left chest was then clear, but the right still showed a little dulness below the angle of the scapula with diminished respiration and the presence of a friction sound. The area of cardiac dulness remained somewhat increased, and at the apex a very short diastolic as well as a systolic murmur was audible. The latter was transmitted into the back and heard even on the right of the median line.

The presence of blood in a pericardial exudate has been generally credited as being a symptom of very grave import from its frequent association with severe underlying conditions, of which the most common are tuberculosis and cancer. So long as our knowledge of the contents of the pericardial sac was chiefly obtained at the autopsy, such a conclusion was necessary, but with a growing acceptance of the view, which Roberts and West have done much to popularize, that aspiration is a reasonably safe procedure and often of great therapeutic value, considerable evidence is now at hand on which to base an estimate of how far the presence of blood itself should have a determining influence in prognosis. Cases of recovery under such circumstances do not seem to be relatively so rare, as I have been able to find eleven in literature, where the fluid withdrawn was described as varying from bloody to apparently pure blood. Several others have been excluded where death ensued some months later either from the further progress of the original disease, to which the pericarditis was secondary, or as the result of pericardial adhesions.

These eleven cases are not, to be sure, a very large number, and yet they amount to a very considerable proportion of the cases of paracentesis pericardii reported, since they do not greatly exceed a hundred all told, and in several of these it was impossible to ascertain the character of the exudate from an inability to find the original reference. They would also make a very good showing when compared with the number of fatal cases with a hemorrhagic character diagnosed before death, but when dealing with such small numbers the statistical method can lead to no definite conclusions.

Of these eleven cases six occurred during the course of scurvy, five being reported previous to 1854, three were rheumatic and one was associated with exophthalmic goitre. One was apparently idiopathic, occurring in a very alcoholic subject.

The case reported is the only one which I have been able to find where a bacteriological examination was made, nearly all the others occurring in pre-bacteriological days, but the close similarity of the pericardium and pleura make it very probable that further examinations will give positive proof that other bacteria than the tubercle bacillus are capable of producing a hemorrhagic pericarditis as well as a hemorrhagic pleurisy. At all events, these cases raise the question whether Osler's statement that the presence of a bloody exudate on aspiration is decidedly in favor of tuberculosis, may not require a little shading. Even in tubercular cases, where the process is localized, recovery is by no means impossible, if it be proper to speak of a patient as cured, when a pathological condition almost of necessity remains, which is liable to produce a chain of symptoms which may terminate in death, since as has already been said, a number of cases are recorded, some of which were hemorrhagic, where the tubercle bacillus was undoubtedly the cause, and yet at the autopsy, several months later, the local process had healed through the obliteration of the sac, the fatal issue having been due either to the further progress of the disease in other organs or to the effects of the pericardial adhesions. These same bacteria are now recognized as the most frequent causes of idiopathic inflammations of the pleura, and from analogy it is probable that they are equally active as factors in idiopathic inflammations of the pericardium, though from the rarity of the latter this is less susceptible of proof. This view is supported by the discovery of their presence by Eichorst in eight cases of pericarditis of spontaneous origin out of twenty-seven, and is unhesitatingly endorsed by him both as to the pericardium and the peritoneum. As a corollary to this the question arises whether, if in tubercular pleurisy, recovery is so frequent as to be practically the rule, it may not also occur when the pericardium is attacked, a question, which in the opinion of the writer deserves an affirmative answer.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, April 20, 1898.

The selection of the fourth right space in this case was certainly justified by the result, and while a study of successful cases shows that the fifth space, more frequently the left than the right, was more often chosen than any other, equally successful results were obtained when the needle was inserted in other, occasionally extraordinary, situations. In two cases aspiration was done through the back near the angle of the scapula, while in a case with which the writer was connected, fluid was obtained with the needle introduced below the right costal border nearly in the mammillary line, the accumulation being so great that the diaphragm and liver were greatly displaced downwards.

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REPORT OF FIVE CASES OF WOUNDS BY THE MAUSER BULLET, WITH REMARKS.

BY J. H. STEVENS, M.D., BOSTON,
Ex-Surgeon Cuban Army.

The adoption by the United States Army of the Krag-Jorgensen Rifle, following the adoption in England of the Lee-Metford and in Germany and Spain of the Mauser, has given rise to a great deal of discussion as to the efficiency of these small-calibre rifles. The present war is expected to settle definitely the question as to their possibilities in future campaigns, inasmuch as the United States is concerned. The Mauser is the only one with which I have had any practical experience, and as I have had the opportunity of treating wounds inflicted by this rifle side by side with those made by the older arm, I have ventured to send this report of a few cases taken at large from my notes. They are in no way more remarkable than the average. Perhaps a few remarks or, at least, a general summing-up of my conclusions in regard to this weapon will be apropos.

The Mauser cartridge (Spanish) is a long pencil-shaped cartridge with a bullet jacketed with an alloy of copper, zinc and nickel, and having a calibre of only .295. The initial velocity of the Spanish Mauser is approximately 2,250 feet per second, and their tremendous increase in velocity can be very readily appreciated by comparing it with the 1,300 feet per second velocity of the old Springfield rifle. The advantage in velocity and range combined with a beautifully flat trajectory make the new rifle theoretically, at least, a most destructive and seemingly efficient weapon. The penetrating force of the bullet is also proportionately increased, and I have seen small tree trunks completely perforated by the Mauser.

But the conditions which could suppose several men in the line of a bullet are (to my mind) few in actual battle, and will become even more rare in the battles of the future where massed troops will play a minor part, and where charges in open country will be an impossibility.

Presuming that the object of war is to disable, without necessarily killing or fatally wounding the individual (because a wounded man becomes an incubus upon the army and requires a great amount of attention), then it becomes a question as to whether more men can be disabled by the small-calibre bullet, in view of its much greater range, and its primary effect upon men so wounded as compared to the old time bullet.

Granting that the new rifle means an increase of wounded men, it would still remain a question as to whether the lessened severity of the wounds would not more than compensate for the increase in numbers. The experience of the Russo-Turkish war (experience which I think has been borne out since) has proven that very few men receive wounds at great distances, and this advantage of range, considering the inaccuracy of the new arm at long distances would be, I think, more theoretical than real.

The experience of the English surgeons has certainly coincided with my own observations, as evidenced by their use of the so-called Dum-dum bullet in the late Mahmoud and Tirah expeditions.

Shock, so potent a factor with the old rifle, is very slight with the new weapon and the stopping force of the bullet (unless cut) is practically *nil*, men even mortally wounded continuing in the fight under the impression that they have received a very slight wound. An advantage to the wounded (if not to the armies engaged) will be the facility with which wounded men will be able to reach the primary dressing-station, as a much greater percentage will be able to walk, especially in cases of wounds to the extremities which form nearly seventy per cent. of all wounds received in battle.

The duty of the medical officers will be greatly simplified instead of increased, and this greater percentage of wounded who will be able to practically take care of themselves, at least for the time, will be a factor which must be taken into account in considering any considerable increase in the working force of the medical corps.

Unless a soldier receives a wound in a portion of the body considered vital and dies at once, his chances of recovery are very good even under the most filthy surgical conditions and where treatment is of the worst. It can be made as a general statement that wounds (ordinarily) by this bullet require very little treatment.

There is little pain, little hemorrhage, the wounds of exit and of entrance are practically the same, there is little inversion or eversion of tissue, they are easily closed, seldom require drainage and the recovery is extremely rapid once the surgeon has *learned to keep his hands off.*

As to the statements that wounds made under four hundred yards would be of a more serious nature I can only say that the cases which have come under my observation have certainly not borne out this assertion. Wounds made by ricochet bullets are, as can readily be imagined from the shape of the Mauser, of a most horrible character. I can see no advantage in the change from the old to the new style of weapon, and I think that actual service will demonstrate the inefficiency of the arm.

If the end of a bullet be cut to allow of a setting up then you diminish the penetration, and as most wounds are received at comparatively short range, I do not see how any one can claim an advantage for the Mauser. The reader can, however, judge for himself.

CASE I. Lieutenant F. E. Y. G., wounded at Saratoga, in the Province of Camaguay. The ball (Mauser) struck him upon the outer side of the right leg, juncture of the middle and lower third, passing directly through the tibia and leaving only a small round hole at entrance and exit. The ball also passed directly through the body of the horse which he was riding. There was little difference in the wounds of entrance or exit, no inversion or eversion of tissue, slight bleeding and, so far as examinations showed, no splintering of bone. The pain was very slight. The wound was absolutely untreated for five days and subsequently dressed with iodoform gauze. Recovery rapid and complete.

CASE II. A. G., wounded with Mauser. The ball struck him directly over the right knee-joint, perforated, without splintering, the patella, and the wound of exit was one-half inch inside the tendon of the semitendinosus muscle. The wound was dressed with sublimate gauze, and the recovery was good, an almost perfect use of the joint resulting.

CASE III is an even more remarkable case, involving a wound of the right lung. The patient, a private, received his wound June 10, 1898, the bullet (Mauser) entering between the third and fourth ribs and one and one-half to two inches to the right of the sternum, ranging slightly downward owing to his position in the saddle, and having its exit one-half inch from the interior angle of the scapula. This case was not seen until the fourth day. He had covered the wounds of entrance and of exit with pieces of cloth, torn from his jacket. There was slight cough. Bloody sputum was very slight, he said, after the first two days. His temperature was normal and he was walking about. At no time during his convalescence was he confined to the recumbent position, and he made an uninterrupted recovery.

CASE IV. Private of the Camaguay Regiment. Wounded in the side of the neck just above and to the right of the junction of the clavicle and sternum by a Mauser bullet, presumably a ricochet. The wound was of a most horrible character, the muscular tissue of the right side of the neck being almost entirely carried away, and the esophagus and trachea exposed and torn across. The patient bled to death before anything could be done for his relief.

CASE V. Will serve as a contrast case, and is only a fair illustration of the difference in effect between the Mauser and the old lead bullet. E. F., private, was wounded by a Remington copper-covered bullet. The ball struck him just above the elbow of right arm, smashing and splintering the humerus and tearing the muscular tissue in a most terrible manner. Amputation. Recovery.

The Spanish regular infantry being armed almost, if not entirely, with the Mauser, while the scouting parties, composed for the most part of volunteers, were armed with the Remington and Winchester, gave me an opportunity of making many comparisons between the two kinds of wounds. No man struck by the old lead bullet was ever known to complain of lack of stopping force.

The cases which I have given above are selected at random from among my cases, and are certainly fair samples by which to judge the rest. I hope at some near date in the future to report more fully upon these cases, especially several of remarkable abdominal wounds.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

E. W. TAYLOR, M.D., SECRETARY.

REGULAR meeting, Wednesday, April 20, 1898, DR. W. F. WHITNEY in the chair.

DR. A. K. STONE read a paper entitled

ALBUMINURIA.[1]

DR. OGDEN: I have been very much interested in Dr. Stone's report of the investigation which he has made. I agree with him perfectly in the statement that the presence of albumin is only a part of the picture of the urine, that is, it is important to have the twenty-four-hour quantity if possible, to know the specific gravity, the total amount of urea, the presence or absence of albumin, the presence or absence of sugar and the characteristics of the sediment. Albuminuria in itself is really of very little importance excepting that it is, as Dr. Stone said, a danger-flag. Every albuminous urine, therefore, should have a thorough examination, in order to ascertain, if possible, the true significance of this abnormal constituent. It usually shows the existence of a pathological renal condition, or the presence of pathological non-renal elements.

I consider the nitric-acid test and the heat test for albumin by all means the most valuable. The tests by means of tri-chloracetic acid, and Millard's reagent, as well as by any other reagents are really too delicate, for they not only precipitate the common forms of albumin, but precipitate also peptons, as well as certain other substances. Some of these reagents, notably Millard's, give reactions for albumin in nearly every urine — normal or pathological.

The subject of albuminuria would be a perfectly simple one if we had to deal only with serum albumin, but the presence of so many other proteids in the urine often makes the subject very confusing. If the urine contains albumose, it is precipitated, together with any serum albumin that may be present, by nitric acid, but is usually not differentiated from the albumin, with certainty, until the heat test is applied, when it is found that a dense white precipitate forms by gentle heat, and re-dissolves on boiling, leaving only the precipitate of albumin in the boiling-hot urine. Further confirmatory tests are then necessary.

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[1] See page 285 of the Journal.

I was rather surprised to find that the percentage of albuminous urine was so low in Dr. Stone's series. The cases which I have followed at the City Hospital have shown a higher percentage of albuminous urines, but, of course, I dealt only with the cases which are *in* the hospital and which were probably ailing to a greater extent than the out-patients followed by Dr. Stone. Without knowing the actual figures, I should say that the percentage would range above 50, where the albumin was present in the slightest possible trace or more. Usually, in those cases, the albumin was found to be due to a small amount of blood accompanying a vaginal discharge, and without the presence of organized renal elements.

There appears to be a distinct class of cases in which the albuminuria seems to be unexplainable, that is, the cause is unexplainable. Take those such as Dr. Stone has referred to in the experience of the life insurance examiner: people apparently perfectly well, but the presence of albumin and the presence of organized elements in the sediment. Very often these cases on physical examination show absolutely nothing. Such cases may lead to the chronic form of nephritis in later years, or they may entirely clear up. I think that it is perfectly just that the insurance companies should eliminate such cases because they are certainly great risks.

Dr. Taylor: Dr. Stone has made no particular mention of temporary albuminuria occurring in the course of violent nervous affections. It has long been recognized that albuminuria may occur temporarily, notably in epileptic seizures in which the attacks succeed each other with great rapidity. I was interested not long since in observing the case of a young boy, who, so far as I know, had no renal disturbance, who suddenly had a great exacerbation of his epilepsy so that when I saw him he was having eight seizures in a night. The examination of the urine taken during the night, and after rising in the morning gave rather a large amount of albumin. No casts were found. During the day I examined the urine again when he was free from attacks, and found that the albumin had entirely disappeared.

This matter is undoubtedly of great importance not only in regard to albumin, but also in regard to other substances that may be found in the urine, on account of the possible confusion of cause and effect. It should, I think, be recognized by those who are working on the auto-intoxications, and the general intoxications of the nervous system that it is very possible in many of these cases to confuse the cause with the effect. It is always possible that the nervous disturbance itself may give rise to certain products, later excreted by the urine, rather than that the products excreted by the urine are the cause of the general disturbance. The general feeling of writers has been that it is fair to assume when certain abnormal products are found in the urine that they are probably the cause of nervous disturbances which are associated with such pathological condition. The converse is no doubt very frequently the case, namely, that a primary nervous disturbance may give rise to secondary disturbances which manifest themselves by such abnormal constituents in the urine, or of other excretions of the body.

Dr. Ogden: I should like to ask Dr. Stone how much albumin he found in the 23 per cent. of cases?

Dr. Stone: Usually a well-marked trace.

Dr. Ogden: Then you included those in which there were the slightest possible traces?

Dr. Stone: Yes.

Dr. J. L. Morse read a paper on

THE PRINCIPLES AND LIMITATIONS OF HOME MODIFICATIONS OF MILK.[2]

Dr. Whitney: Is there any simple fat that can be added in order to bring the percentage up to that required?

Dr. Morse: I do not think there is anything that takes the place of cows' milk. The thing that comes nearest to it, I think, is cod-liver oil.

Dr. G. B. Sears read a paper on

HEMORRHAGIC PERICARDITIS.[3]

Dr. Whitney: Was the blood so well and intimately mixed with the fluid that there was no question that it was there before the introduction of the needle?

Dr. Sears: Yes, it was thoroughly mixed with the fluid.

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TWENTY-SECOND ANNUAL MEETING OF THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Held in Princeton, N. J., May 31 and June 1, and in New York City, June 2, 1898.

The Address was delivered by the President, Dr. J. Nevins Hyde, of Chicago. He spoke of the importance of auto-intoxications in cutaneous diseases, and stated that uric acid is now recognized as the eventual product of nuclein rather than albumin. The increase of leucocytes is often in proportion to the sub-oxidation production. It could not be denied that some of the rosaceas and acnes may be due to xanthin poisoning. A favorable sign of the times was the holding of an international leprosy conference during the past year. That the bacillus of lepra should be accepted as the essential virus of the disease was to be expected although it has not met the final scientific test. It was emphasized in this conference that the buccal and nasal secretions are infectious, that the isolation of lepers is best for the community and that serum therapy had not yielded encouraging results. The charges made by humanitarians of cruelty in the segregation of lepers had been proved to be without any weight whatever. In some of the settlements the lepers enjoy a life which would be impracticable outside, save for persons of great wealth. Persons suffering from certain forms of leprosy, and living outside of leper settlements, feel most keenly their social ostracism.

AMERICAN DERMATOLOGICAL STATISTICS.

Dr. Hyde said that as a result of the efforts of the Association to collect statistics of cutaneous affections during the past twenty-one years, he was now able to report that a total of more than 300,000 patients so afflicted had been examined and treated. Of this very large number more than 84,000 had eczema, more than 33,000 had syphilis, over 25,000 had acne, and more than 10,000 were affected by diseases of the skin produced by vegetable parasites. There were but three cases of actinomycosis of the skin, and two of sclerema neonatorum. These statistics were compared with those from abroad, and certain differences were pointed out.

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[2] See page 291 of the Journal.

[3] See page 293 of the Journal.

HYDROA VACCINIFORME?

Dr. J. C. White, of Boston, presented a series of cases and photographs illustrating this affection. He said that the disease usually begins between the first and third years of life, and in the spring and summer after exposure to the sun. It is almost exclusively seen in boys. On the face, hands and other parts are to be seen small and large vesicles coalescing to make bullæ, and giving a picture somewhat resembling vaccinia. His own cases were characterized by the process being less active during the warm season, by the extensive distribution of the cutaneous lesions, by the magnitude of the subsequent cicatrices and by the great disfigurement. These extraordinary cases differed very markedly from other known forms of dermatoses. It seemed to him that the more these rare forms of bullous disease are studied the harder it is to sharply define them.

Dr. J. C. Johnston said that at the present time observations regarding the presence of eosinophilia in bullous affections seemed to be of no value whatever, though, of course, in the future they might acquire a new significance.

Dr. Hardaway referred to a case of supposed hydroa vacciniforme which he had seen in the daughter of a physician. The lesions appeared to be wholly uninfluenced by the seasons, or by anything, and they left considerable scarring.

Dr. T. C. Gilchrist, of Baltimore, agreed with Dr. Johnston that the blood examinations served simply to confuse the clinical observer.

Dr. L. A. Duhring said that he had not seen, either in Philadelphia or in other cities, scarcely a typical case of this affection. Most of the typical cases reported had been observed chiefly in the summer. Clinically he had not observed any great similarity between hydroa vacciniforme and dermatitis herpetiformis; in the former the diagnosis was difficult; in the latter it was exceedingly easy.

Dr. J. T. Bowen, of Boston, said that microscopical examination of the lesions would reveal a distinct necrosis of the fibrous layer. As he had seen at least four or five typical cases in the past few years, the disease could not be as rare in Boston as in Philadelphia. Dr. Bowen described a case of congenital bullous dermatitis that he had seen, which bore considerable resemblance to hydroa vacciniforme. The patient was a girl, and the bullæ appeared chiefly around the elbows, wrists and knees.

Dr. White, in closing the discussion, said that this disease was protean in its manifestations and exceedingly puzzling from the standpoint of diagnosis. Those who formerly called the disease "estivale" now admit that it may occur at other seasons, even in the same patient.

A RECURRENT BULLOUS ERUPTION LIMITED TO CERTAIN AREAS, SUPPOSED TO BE DERMATITIS HERPETIFORMIS.

Dr. W. T. Corlett, of Cleveland, reported such a case. The patient, an adult, had an itching eruption on the inner surface of the thighs and ulnar surface of the forearms. This man had enjoyed robust health up to the war of 1861–65. The eruption began in July, 1894, and the present attack was the seventh. Examination showed slightly inflamed areas of skin on the ulnar regions of the forearms and inner aspects of the thighs corresponding to the distribution of the internal, cutaneous obturator and other nerves. The lesions consisted of papules, small tubercles, vesicles, a few pustules and numerous small vesicles. The important features of the case were: (1) The multiform character of the lesion, with a preponderance of the small bullæ; (2) intense itching; (3) limitation to certain areas; (4) recurrence, and (5) complete immunity for upwards of seven months.

Dr. Duhring said that he could not recognize much resemblance to dermatitis herpetiformis; the case was rather one of those rare forms of bullous disease which are difficult to classify.

Dr. J. Zeisler, of Chicago, said that he considered it easy now to diagnose positively dermatitis herpetiformis. In reaching such a diagnosis it is important to note the favored location and the preponderance of bullous and urticarial lesions. He had never seen a case of this kind in which the inner surface of the thighs was affected. The lesions were found chiefly on the back, hips and knee-pits.

Dr. J. A. Fordyce, of New York, thought it probable that in the case reported the lesions might be dependent upon a peripheral neuritis or some central trouble.

Dr. White objected to using a narrow definition for dermatitis herpetiformis in the present state of our knowledge, and hence preferred the term "multiformis." We were not justified in excluding Dr. Corlett's case from this category.

Dr. Stelwagon concurred in this view.

TROPHIC DERMATOSES FOLLOWING FRACTURES.

Dr. J. Zeisler read a paper on this subject. He said that as it had been claimed as long ago as 1832 that the toe-nails begin to grow at the time of the consolidation of a fracture, he determined to ascertain the truth of this assertion by observation in his own case, having received a fracture in 1896. He found that the nails on the fractured limb did not grow at all for six weeks, and that it was about ten weeks before their free border could be felt. He had never observed this at other times. But in this case the growth of the nails was not a sign that consolidation of the broken fragments of bone had taken place, for to this day the fracture remains ununited. It is probable that the phenomenon is to be explained by the impaired nutrition of the limb, chiefly due to the application of bandages and other dressings. In April, 1897, there appeared on the right sole a crop of small vesicles, without special grouping, and accompanied by intense itching.

Dr. E. B. Bronson said that it was well known that eczema is liable to affect a limb which has been the seat of a fracture, that its configuration is unusual and that the disease proves obstinate under treatment.

Dr. F. J. Shepherd confirmed the remarks of the previous speaker, and described a case of ununited fracture of the humerus in which herpetic lesions developed along the course of the musculo-spiral nerve, and disappeared after the nerve had been released from the pressure of the fragments. Bullæ, he said, are not at all uncommon after fractures, and often appear at distant points.

Dr. Duhring expressed the opinion that changes in the nails were more common after shock and various injuries than was generally supposed. He had studied many of these cases, and was inclined to group them under the general head, dermatitis neuropathica, using adjectives, such as "bullosa" and "vesiculosa" to describe the special conditions. Those lesions are directly dependent upon nutritive changes, and do not necessarily arise from injuries.

Dr. Hartzell remarked that having fractured the metacarpal bone of the right hand connected with the little finger, he noted that for three or four weeks after the injury the nails on that hand did not grow.

TWO CASES OF MELANO-CARCINOMA, PRIMARY IN THE SKIN, ONE IN A NEGRO; WITH SOME OBSERVATIONS ON THE PATHOLOGY OF MOLES.

Dr. T. C. Gilchrist presented a communication having this title. The negro was much emaciated, and there were a thousand nodules on the body and numerous nodules in the liver, and probably elsewhere, yet curiously enough there were no enlarged lymphatic glands. A portion of one metastatic nodule was teased out and injected into the external jugular vein of a dog. After two months, during which time the animal had apparently thriven on the treatment, he was killed, but no pigment or other abnormal change was found in the lungs. The cultures from the sterilized portions of the nodules were negative. The smallest metastasis showed a nodule deposited in the subcutaneous tissue, consisting of epitheloid cells. The pigment was not very noticeable in the first metastases. The second case occurred in a physician, twenty-seven years of age. A small mole was first noticed on the left cheek seven years ago. It very gradually increased in size, and after a scratch began to grow quite rapidly. It was excised, and the sections showed distinct melano-carcinoma of a mole.

Dr. Gilchrist said that, according to the leading pathologists, moles are incomplete sarcomata — growths from the wall of either the lymphatics or the blood-vessels. Unna stands alone in saying that the structure of a mole is derived from the epidermis, and, therefore, is of epithelial origin. The speaker said that he had excised a pigmented mole from the abdomen of a child, and several also from adults. The mole from the child showed nests of cells in the epidermis. His own observations, therefore, confirmed the view held by Unna. From this it follows that since the cells of the tissue forming the mole are of epidermal origin, the malignant growth of such a tissue must be carcinoma. In this view Dr. Welch concurs. It must be borne in mind, then, that the malignant growth of a mole is not a melanotic sarcoma, but a carcinoma. Dr. Abel has recently shown that the pigment in the negro is a very complex body, and that a granule remains after isolating the pigment. This granule contains iron. The pigment when separated is found to be free from iron. The conclusion is, that the pigment in melanotic growths and in the negro's skin is not derived from the blood but alterations in the protoplasm itself. Certain Italian observers claim that the bodies found in cancer are blastomyces and are allied to the yeast fungus, but these bodies are not constantly present, and they are found in benign growth and in many other lesions of the skin. Moreover, no pure culture has been obtained from cancer, and attempts to reproduce undoubted cancer from the supposed parasite have so far proved unsuccessful.

Dr. Duhring said that there seemed to be good reasons for believing that moles are of epidermal origin, and hence he was surprised that so many pathologists took a different view.

Dr. Hartzell accepted Dr. Gilchrist's view, and spoke of the extreme malignancy of these melanotic growths.

Dr. Stelwagon said that he had faithfully tried the effect of treating these cases by the hypodermic injection of arsenic, but with an entirely negative result.

Dr. White expressed the opinion that it would take more than a few cases to successfully oppose the view that it is not possible for a mole to subsequently give rise to pigmented sarcoma.

Dr. Fordyce said that he had given some attention to the study of excised moles, and while he believed that the majority of pigmented tumors originate from the lowermost cells of the epidermis, in certain cases there appeared to be a mixed tumor. If this observation were correct, it would reconcile the conflicting opinions of the pathologists.

Dr. Johnston agreed with Dr. Fordyce that a sarcomatous mole might develop from the mesoderm, just as a carcinomatous mole might arise from the ectoderm.

Dr. A. R. Robinson, of New York, was inclined to agree with Unna's view of the origin of the pigmented form, but he said he was under the impression that white moles are derived from the lymphatic system, and present no evidence of epithelial structure.

Dr. Hyde said that the word sarcoma had been used quite indefinitely in the past, so that it was probable that the pathologists were in error, not in their recognition of the nature of pigmented moles, but in their interpretation of the phenomena which they describe as sarcomatous.

Dr. Gilchrist, in closing the discussion, touched on the question of prognosis. He stated that early and complete excision before the occurrence of metastasis should effect a cure. He could not understand how there could be a mixed tumor, as all the cells in a mole are of epidermal origin.

(To be continued.)

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Recent Literature.

Diabetes Mellitus and its Treatment. By R. T. Williamson, M.D. (London), M.R.C.P. New York: The Macmillan Company. 1898.

Treatises on Diabetes Mellitus are not so common with us as in Germany and a new book on this subject is sure of a welcome. The present volume of Williamson's is an octavo of 417 pages, printed on good paper, with eighteen illustrations.

The book opens with an entertaining historical *résumé.* It is a noticable fact that the early work on diabetes was English and the more recent work German. Then follows a chapter on Sugar Tests which occupies more than one-tenth of the whole book. Such matter properly belongs in a work on Clinical Diagnosis or Physiological Chemistry, and even the excellent discussion of the Phenylhydrazine test and the valuable suggestion as to the combination of the Fehling's, Phenylhydrazine and Fermentation tests for the determination of small traces of sugar cannot justify a length of forty-four pages.

The chapters on Physiological Considerations and Experimental Diabetes and Glycosuria contain so many references to the recent literature that all can read them with profit. We miss the discussion of the facts presented, because we expect the author to pass upon them a discriminating judgment. As it is the reader feels too often that he has been looking over notes gathered by the writer's assistant.

The presentation of the facts on Experimental Pancreatic Diabetes is much more readable, though the author makes but little comment. Alimentary Glycosuria receives considerable attention and the literature is well up to date, but the author has evidently had but little experience in the 100-gramme glucose test for the determination of the power of assimilation. Since the hope of treatment in diabetes lies in discovering early cases and those with a tendency to the disease, this test should be more freely used. It certainly is remarkable that even in advanced disease of the liver the power of assimilation of sugar is not lowered. Phosphorus poisoning is an exception, but perhaps this is due to the combined effect of the poison on the liver and muscles.

The chapters on Etiology and Etiological Relations, Symptomatology and Symptoms, Complications, and Pathological Changes in Connection with the Various Systems form the best part of the book. The author's cases show the most careful study. The deductions drawn from the statistics are most carefully formulated and inspire great confidence. It is beyond the scope of this review to record these interesting data and mention can be made only of the prevalence of diabetes in India and the remarkable immunity enjoyed by the Mohammedans. Two hundred and fifty cases are quoted from Bose. Of these only two were Mohammedans, seventeen were Europeans and two hundred and thirty-one Hindus.

The author divides his cases into two types, the mild and the severe, and calls attention to the fact that the former may develop into the latter. Naunyn[1] has put especial emphasis on this point from the side of treatment.

Gout and diabetes have had much less intimate connection in the author's experience than American and Continental writers have been wont to believe. This is striking and suggestive as well. Gout and England are so closely associated in the American medical mind that we naturally expect an English writer to lay much stress on the coexistence or alternation of the two affections.

Attention is called to the possibility of the absence of sugar in the morning urine and there is given at some length a list of other circumstances under which the sugar may disappear — facts not so universally known. The author's ideas on acetone and diacetic acid are in accord with those expressed in the most recent literature. He does not appear to appreciate, however, that much more acetone is excreted by the breath than in the urine. The connection between acetone and constipation in diabetics is pointed out and furnishes an obvious therapeutic hint. Williamson has added to the tests for diabetes by describing a ready method for the detection of the excess of sugar in the blood. The method, like Bremer's, is based on a change in the color of one of the aniline dyes.

The study of the Pathological Changes is very comprehensive. It seems remarkable that only six out of ninety-two cases showed a dilatation of the stomach and that, as Williamson says (page 204), "dyspeptic individuals often lose all their dyspeptic troubles after the onset of diabetes."

The account of the changes occurring in the nervous system is particularly thorough, especially that portion devoted to the patellar reflexes.

The chapter on Treatment is disappointing. The main ideas are excellent, but the basis of all treatment, the value of the various food-stuffs, is not adequately considered. The author does not record a single metabolism experiment of his own, and furthermore, gives but slight mention to the work of others. To no disease has the metabolism experiment contributed more than to diabetes, and it is a serious failure that in a special work on this disorder the subject should receive such scant attention. The old idea in the treatment of diabetes was a negative one, — how little sugar can we allow our patient; the new idea is positive, — not how little sugar is to be allowed, but how much fat is to be given. And it is only by constantly bearing this in mind, as well as the fact that every gramme of fat is the equivalent of more than twice that amount of proteid or carbohydrate matter that we can hope to successfully cope with this malady. The superficial way in which the subject of diet is approached is shown in the following statement, page 335: "Buttermilk contains less sugar than ordinary milk. . . . It is, therefore, a little more suitable than ordinary milk." The author's own tables show that there is but about 10 grammes less sugar in a litre of buttermilk than in ordinary milk. To save giving this extra 10 grammes of sugar, the author sacrifices some 20 to 30 grammes of fat, the equivalent of 180–270 calories. In a modern treatise on diabetes such a recommendation is inexcusable.

That "wine" (page 364) "is a drink and not a food" can by no means be so easily disposed of, as the question is still debatable. Certainly the statement (page 366) that the effects of music are worthy of a trial, can do no harm, but to say that (page 391) "Brewer's yeast also appears worthy of a trial" might be the cause in some unhappy patient of that "blown up" feeling recorded by Watson as resulting from its use over half a century ago.

We are glad to see that proper caution is given against changing the diet too suddenly in either direction and that the necessity of giving carbohydrates when the ferric chloride reaction is strong is made prominent. There is no question as to the value of the following (page 321): "A weekly or monthly record of the patient's weight is perhaps more important in severe cases of diabetes than the daily record of the amount of sugar excreted."

THE PARISIAN PASTEUR MONUMENT. — The design for the monument is completed, and it represents Pasteur in antique costume, and sitting near him is a young woman showing her healed daughter, while Death shrinks into the background. There are also to be bas-reliefs showing an ox, supposed to have been saved from anthrax; a vine-grower picking grapes, free, it is to be supposed, from the phylloxera, and a shepherd caressing his antirabic dog. — *Medical Press.*

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[1] Naunyn. Der Diabetes Mellitus, 1898, p. 357.

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Medical and Surgical Journal.

THURSDAY, SEPTEMBER 22, 1898.

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ASSOCIATION CENTRES.

FLECHSIG'S views upon the localization of mental processes in the brain brought forward in his address[1] at Leipsig in 1894 and in subsequent articles[2] continue to attract much attention and criticism. He claims that psychical phenomena are functions of the body, more especially of the brain, the cortex of which is alone concerned in consciousness. Certain ideas (visual, auditory, etc.) have a definite localization. He reviews the history of the theories of cerebral localization. The study of the localization theories is aided by a study of the development of the brain at the period of fetal life, in which various tracts develop. The sensory tracts develop at different periods (that of hearing the latest) from the periphery to the cortex, then tracts from the sensory cortical centres to other regions form later. There are four great centres — visual, auditory, olfactory and sensori-motor. These occupy about one-third of the surface of the brain. The other two-thirds of the surface of the brain have other significance. These four sensory centres are developed at birth, the other portions are undeveloped for a month after birth. These other parts are more concerned with the psychical processes, and he regards them as the three great association centres. They are the posterior, involving most of the temporal and parietal lobes; the anterior, involving the frontal lobe, and the middle, involving the island of Reil. The first is especially developed in certain intellectual men. The second is more involved in personal consciousness. The organic sensations are localized in part or exclusively in the lower centres, not in the cortex. The boundary of the visual sphere in man is alone accurately defined, the limits of the auditory and tactile spheres are uncertain. The posterior and anterior associations have many fibres going to the corpus callosum, the middle centre very few. Insanity is a disease of association and especially of these centres. The first association centre comprises the connections between the visual, auditory and sensory centres; the second between the olfactory and sensori-motor, and the third between the auditory, olfactory and sensori-motor. If the first centre be diseased, there is difficulty in recognizing things seen and felt in the external world. If the second be diseased on both sides the idea of personality is disturbed. The first is associated with all the processes of understanding language; the second with the process of expressing language and directing personal motives and acts. Regarding the sensory condition, he has studied the development of certain tracts in the cord and brain, the conduction of tactile impressions from the posterior spinal roots through the pons and internal capsule to the cortex, in part to the cortex of the limbic lobe and in part to the Rolandic region, but lesions in the association centres may cause an apparent loss of sensibility, as in soul-blindness, soul-deafness and certain forms of aphasia, which is due more to a disturbance of association than to a real sensory loss. The various forms of mental trouble may be due to varying localization of the morbid process. Psychiatry must rest on anatomy, physiology and chemistry.

These views of Flechsig have by no means met with universal approval. Sachs[3] considers his work a series of hypotheses addressed to the laity, not a setting forth of careful investigations to support his theories. He questions the correctness of his anatomical data. We cannot trace the fibres in the brain from one end to the other directly, but we can only infer their course. They cross and bend and do not lie in one plane. He questions the correctness of Flechsig's statements about certain fibre tracts in the infant's brain, but, if Flechsig be right, it only proves that at the age of three or four months certain regions only have corona radiata fibres. There is no proof that other corona radiata fibres may not develop later, since, as Flechsig says, the corona radiata and the association fibres are so confused in the adult brain as not to be differentiated. Secondary degenerations in the brain may be shown positively by Marchi's method, negatively by the Pal-Weigert method. A lesion to cause such degeneration must not be so large as to destroy the underlying parts but be only cortical and also rather fresh. He gives studies of several brains with secondary degenerations, and proves that Vicq d'Azyr's layer exists everywhere in the brain, that there is no difference in its appearance in the outer visual centre and in the so-called association centre in the parietal or temporal region. The corona radiata fibres of the projection system are shown to go to all parts of the cortex and no part serves exclusively for association. Of course the four sensory centres exist and are generally recognized, but there is no proof that the rest of the cortex is especially an understanding centre.

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[1] Gehirn and Seele, 2d Aufl., Leipsig, 1896.

[2] Die Localization der geistigen Vorgänge, Leipsig, 1896. Die Grenzen geistigen Gesundheit und Krankheit, Leipsig, 1896.

[3] Monatsschrift für Psych. und Neurol., April, 1897.

Nissl[4] also questions whether the psychiatrist should be a brain anatomist, and asks whether there is any connection between the normal structure of the cortex and mental disease. The cortex is, of course, the part involved in such disease. The localization of cerebral functions has nothing to do, however, with the anatomy of the cortex except in its gross topography. The anatomy of the cortex itself has been much neglected, especially by psychiatrists who try also to be anatomists. All the advances in brain anatomy, especially in the anatomy of the brains of lower animals and studies of fibre tracts, have not advanced psychiatry materially. Clinical study and not anatomy is the essential for the psychiatrist. Flechsig thinks anatomy the beginning and end of clinical psychiatry, but Nissl agrees with Sachs that Flechsig's psychology and psychiatry are so superficial and obscure they are not worth considering. Flechsig reports no case in full and does not say how much material he has or on what he bases his views; he says nothing of the nature of his diseases; he does not even say if the association centres are involved in both hemispheres. His views as to the functions of the anterior association centres are based not on a study of clinical cases of lesions in these regions but on supposed anatomical connections with the olfactory and sensori-motor centres which Nissl pronounces the baldest kind of dogmatism in speculative anatomy. Flechsig utters various commonplaces about general paralysis, but he does not give any proof that the clinical differences of general paralysis are based on different localizations. Flechsig says that clinical experience gives countless cases of his associated centres, but he does not cite one case. He does not touch upon the fine anatomy of the cortex itself, in the study of cells, but studies chiefly sub-cortical tracts, and yet cell changes are probably the chief changes in psychiatry. There is no proof that the association fibres, some of which have long been known as the corpus callosum, have anything to do with association.

The first task of the psychiatrist is a scientific knowledge of insanity. He need not undertake anatomical any more than physiological investigation, although he should know the results of research. The pathology of the cortex, however, is important, and forms of insanity should be referred to definite forms of disease of the cortex; that is the task of the pathological anatomy of cortical diseases. For this we lack at present a detailed knowledge of the normal structure of the cortex. For this we need also the newer technique, which is now sufficient. This, however, is of no use unless clinical psychiatry makes for greater advances than it has yet done. The most accurate knowledge of the structure and pathological changes in the cortex need definite clinical knowledge to interpret them. It is hard to make a thorough examination of the brain cortex and impossible to study fully a long series of cases so as to get a series of pathological types from which to derive different forms of insanity. The clinician must give a series of perfectly clear clinical types to point out the field for pathological investigation. Clinical study must open the way for pathology. The task of pathology is to refer the form of insanity to a definite form of disease of the cortex, it cannot explain the nature of different forms of insanity. Clinical psychiatry must define the forms, which it has not yet done. For instance, we do not know whether hebephrenia and katatonia are two diseases or two manifestations of one morbid process.

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WHAT MODERN MILITARY HYGIENE CAN ACCOMPLISH.

The editor of the *New York Medical Journal* comments as follows on the lessons to be learned from the success of Sir Herbert Kitchener's Soudan expedition:

"The recent splendid achievement of Sir Herbert Kitchener in the Soudan shows what can be done by a military scientist. Here was a large force operating in a desert country as evil in one way as was Cuba in another, landed with practically no casualties or sickness at the fighting point; and fierce as the fighting undoubtedly was, the British loss was insignificant, while that of the Arabs was enormous. Moreover, in the midst of the desert the medical arrangements worked to perfection. Why? Because Sir Herbert Kitchener and his staff knew that questions of camp sanitation, personal hygiene, and care of his men, even such details as investigating the condition of their shoes, the proper time to rest, the safe amount of marching, the need of carriers and attendants, etc., are as much a part of the soldier's training and duty as personal courage, discipline and tactical skill on the field of battle."

The completeness of the medical arrangements for this expedition, which are described in recent issues of the *Lancet*, is most admirable, and shows what can be done by a well trained and organized service, dealing with a force of trained soldiers, which is well within the limits for which it can adequately provide.

"For a British army general hospital at the base — for example, one intended to accommodate five hundred patients — the allowance, the *Journal* is informed, is as follows: A deputy surgeon-general in command, with a surgeon-major as secretary, eighteen other medical officers, a quartermaster, eleven nursing sisters, three sergeants-major, thirteen staff and other sergeants, a bugler, twelve corporals, ninety-four privates, and twenty-five batmen, or soldier servants. In other words, there is a force of twenty medical officers, a hundred and forty-nine non-commissioned officers and men, and eleven women nurses to take care of five hundred patients, and that, too, ordinarily under conditions far less taxing to the force than those that have necessarily prevailed at Camp Wikoff. The responsibility for the discrepancy between such an array and ours does not lie with the surgeon-general of the army or with the system on which the medical service of the army is organized, in so far as its organization is not hampered by legislative restrictions. It lies with the people. Let them make it plain to their representatives in Congress that at last they realize the niggardliness with which the medical corps of the army has been treated, and are resolved that the mistake shall be remedied."

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[4] Monatsschrift für Psych. und Neurol., February, 1898.

This sensible view of the reason for the medical failures in our recent Cuban campaign agrees so exactly, as noted by the editor, with those expressed in our editorial of the first instant, that we are glad to quote them.

The sooner the public can be brought to realize that the responsibility for the lack of provision for our soldiers lies upon Congress, and through Congress upon the people themselves, the sooner will legislative provision be made which will render such deficiencies impossible in the future.

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MEDICAL NOTES.

NEW DIRECTOR OF THE MUSÉE DUPUYTREN. — M. Pilliet has been appointed Director of the Musée Dupuytren, which contains the anatomical collections of the medical faculty at Paris.

A DOCTOR'S DEGREE FOR A WOMAN. — The University of Genoa has given its M.D. to Miss E. Bonomi, which is said to be the first time the degree has been given to a woman by an Italian university.

THE HUMAN BRAIN. — A German biologist has calculated that the human brain contains 300,000,000 nerve-cells, 5,000,000 of which die and are succeeded by new ones every day. At this rate, assuming the correctness of the German's guess, we get an entirely new brain every sixty days.

SMALL-POX AT JOHANNESBURG. — According to the *Medical Press* the spread of small-pox at Johannesburg, South Africa, is reported to be causing much anxiety, and the presence of a large proportion of unvaccinated and therefore unprotected foreigners renders it exceedingly difficult to circumscribe its ravages. The last news to hand is that the Town Council is at loggerheads with the Small-pox Committee, in its endeavor to secure the sanitary management of the town.

GOLF FOR MEDICAL MEN.— According to the *Medical Press* golf is undoubtedly the pastime, *par excellence*, for medical men. No one, for example, who has not experienced it can appreciate the delightful *abandon* which it is possible to attain upon the links while playing a round. All the petty annoyances of practice and the anxieties of troublesome cases vanish under the soothing influence of the drives, the approach shots and the successful long putts. Golf links also have often proved a favorable medium for the formation of friendships, and anything which tends to foster this desirable feature among professional men is deserving of encouragement.

GENERAL WOOD'S SANITARY WORK. — The city of Santiago, long known as a breeder of pestilence and one of the dirtiest and most unhealthy places in dirty and unhealthy Cuba, has been in American hands only about two months, and is now in a condition of cleanliness that New York might almost have envied a few years ago. Under the system introduced by General Wood, who, it may be remembered, is a physician, Santiago is divided into five sections, each one under the general supervision of a medical man, who has under him inspectors of sewers, streets, houses, and dispensaries, and a number of street cleaners. Five hundred cubic yards of refuse are burned daily, disinfectants are distributed wherever they are needed, and a heavy fine is imposed for uncleanliness or for any failure to report unhealthful conditions and deaths. The results are shown in a decrease in the death-rate within a month from an average of seventy to one of twenty a day. Among the troops the principal diseases are typhoid, malarial, and yellow fevers, and dysentery. The cases of yellow fever, several of which have been among the so-called immunes, are few in number and the disease is of a very mild type. The mortality from malaria or dysentery is much greater than that from yellow fever. Now that the Spanish troops have all left for Spain, it is hoped that yellow fever can be made still less dangerous through the continuance of Dr. Leonard Wood's good work. — *Medical Record.*

BOSTON AND NEW ENGLAND.

DEATH OF A CENTENARIAN. — Mrs. Sarah McNeil, said to have been one hundred years old, died at East Boston, September 11th.

ARRIVAL OF "BAY STATE" AT PONCE. — It is announced that the hospital ship *Bay State* has arrived at Ponce, Porto Rico, after a somewhat stormy passage, and that she will remain there a week before beginning the return trip with sick soldiers.

ANOTHER HONORARY DEGREE FOR DR. BOWDITCH. — In addition to the degree of LL.D. from Edinburgh, Dr. Henry P. Bowditch, of the Harvard Medical School, has received the degree of Doctor of Science from the University of Cambridge (England) in connection with the recent zoölogical and physiological congress. In announcing the conferring of the degree, the Vice-Chancellor said that Professor Bowditch was regarded by Cambridge with almost fraternal feeling as the envoy of her brothers across the Atlantic. Owing to his example and influence physiological studies are now flourishing in the United States, and the Cambridge across the sea has long been a famous centre of physiological research.

NEW YORK.

OVERCROWDING IN THE PUBLIC SCHOOLS. — The public schools reopened for the season on September 12th, and it is stated that of the 700,000 children applying for admission about 25,000, as was anticipated, could not be accommodated without infringing the rules against overcrowding the buildings. The Board of Education and Superintendent of Schools claim that they endeavored by every means in their power to avoid this unfortunate state of affairs, and place the blame on the municipal authorities. A dozen large new school-houses, however, are in course of erection which it is expected will be ready for occupancy before or by the first of January, and in the mean while, in order to obviate the deficiency as far as possible, it is proposed to adopt in some of the more crowded districts what is known as the Copenhagen system of two school sessions a day with separate sets of pupils and teachers. This plan, it is said, has previously been adopted with a fair measure of success in some of the schools of Brooklyn.

A Tall Soldier. — One of the first patients admitted to the new army hospital on Liberty or Bedloe's Island was a Californian, a member of the Sixteenth Regiment of Regular Infantry, who is a veritable giant, his height being given at six feet, eight and one-quarter inches. He was brought with a number of others from Montauk and it required two cots to make him comfortable.

Death at the Age of One Hundred and Four Years. — Mrs. Zoe Josephine Treville died at Riverhead, Long Island, on September 10th, at the age of one hundred and four years, five months and three days. She was a native of France, but was brought to this country by her parents when a child of five years. She enjoyed excellent health until within a few months of her death.

Death of Dr. George W. Lindheim. — Dr. George W. Lindheim, a young surgeon of the Red Cross Society, died on September 16th at his home in New York, of typhoid fever contracted in army service. A peculiarly sad feature of his death is the fact that throughout his illness anxiety of mind on account of certain criticisms of his conduct while in charge of a hospital train had a most depressing effect. On this train were 265 men of the Eighth Regiment, New York Volunteers, of which he was himself a member, and although a considerable number of them were critically ill he brought them all the way from Chickamauga without a single death occurring among them. There is reason, therefore, to believe that the criticisms mentioned are entirely unfounded, and that, on the contrary, he deserved great credit for the admirable manner in which he fulfilled the arduous duty devolving upon him. His associates all speak in the highest terms of Dr. Lindheim and of his professional ability.

Death of Dr. Hess. — Dr. Louis Hess, a well-known practitioner of Williamsburg, in the Borough of Brooklyn, died in the Eastern District Hospital, Williamsburgh, on September 11th, in the thirty-ninth year of his age. He was born in New York and was graduated from the College of Physicians and Surgeons in that city in 1886.

A Medical Man on the Commission to investigate the Conduct of the War. — The appointment of Dr. W. W. Keen, of Philadelphia, as a member of the commission is sure to give satisfaction to the medical profession, for he is known far and wide as a conscientious man and distinguished surgeon. — *New York Medical Journal.*

Miscellany.

THE SPREAD OF DISEASE BY FLIES.

The *Medical Record* of September 17th publishes an interesting letter from Dr. M. A. Veeder concerning the spread of disease through flies. This danger he considers greater than from impure water-supply:

"To illustrate, the writer has seen fecal matter in shallow trenches open to the air, with the merest apology for disinfection and only lightly covered with earth at intervals of a day or two. In sultry weather this material, fresh from the bowel and in its most dangerous condition, was covered with myriads of flies, and at a short distance there was a tent, equally open to the air, for dining and cooking. To say that the flies were busy travelling back and forth between these two places is putting it mildly.

"To clinch the argument, and apparently leave no loop-hole for escape, I have made cultures of bacteria from fly-tracks and from the excrement of flies, and there seems to be not the slightest difficulty in so doing. Indeed, the evidence of every sort is so clear that I have about reached the conclusion that the conveyance of infection in the manner indicated is the chief factor in decimating the army. Certainly, so far as it is known to the writer, nothing adequate has been said about it in current discussions. On the contrary, there have been intimations of the existence of ideas that are positively dangerous, if what has been here said is true. There is no doubt that air and sunlight kill infection if given time, but their very access gives opportunity for the flies to do serious mischief as conveyers of fresh infection wherever they put their feet. In a very few minutes they may load themselves with the dejections from a typhoid or dysenteric patient, not as yet sick enough to be in the hospital or under observation, and carry the poison into the very midst of the food and water ready for use at the next meal. There is no long, roundabout process involved. It is very plain and direct, and yet when thousands of lives are at stake in this way the danger passes unnoticed, and the consequences seem mysterious until attention is directed to the point; then it becomes simple enough in all conscience."

METEOROLOGICAL RECORD

For the week ending September 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....4	29.88	76	90	62	95	80	88	E.	S.W.	3	12	C.	O.	
M...5	29.87	76	82	70	83	78	80	W.	E.	8	3	C.	C.	
T....6	29.90	79	86	72	70	75	72	N.W.	S.	15	7	F.	C.	
W...7	29.82	81	89	73	78	99	88	W.	W.	8	7	C.	O.	55
T....8	30.17	67	73	61	68	62	65	W.	S.W.	8	6	O.	C.	
F....9	30.32	66	74	58	67	72	70	N.W.	S.	7	9	C.	C.	
S...10	30.30	66	74	58	69	48	58	W.	N.W.	4	10	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 10, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Whooping-cough.
New York	3,438,899	1978	813	18.55	8.50	14.15	2.45	.75
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,214,256	413	131	16.56	11.04	9.12	3.12	2.40
St. Louis	570,000	—	—	—	—	—	—	—
Baltimore	550,000	236	105	29.53	3.44	20.64	3 01	4.30
Boston	517,732	234	112	26.66	8.60	23.65	2.58	—
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	285,000	73	36	41.10	2.74	27.40	1.37	1.37
Washington	277,000	112	34	18.69	6.23	11.57	5.34	1.78
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	68	26	27.93	2.94	24.99	1.47	1.47
Nashville	87,754	40	13	20.00	20.00	12.50	5.00	2.50
Charleston	65,165	44	14	18.16	9.08	11.35	6.81	—
Worcester	105,050	38	15	42.08	10.52	31.56	—	2.63
Fall River	95,919	—	—	—	—	—	—	—
Lowell	87,193	39	23	23.04	5.12	23.04	—	—
Cambridge	86,812	34	18	29.40	2.94	29.40	—	—
Lynn	65,220	16	3	25.00	12.50	12.50	12.50	—
New Bedford	62,416	28	13	39.27	3.57	32.13	7.14	—
Somerville	57,977	15	10	33.33	—	20.00	—	—
Lawrence	55,510	24	11	24.96	12.48	16.64	—	4.16
Springfield	54,790	17	10	52.92	11.76	47.04	—	—
Holyoke	42,364	25	17	40.00	8.00	32.00	—	—
Salem	36,062	17	12	17 64	—	11 76	—	—
Brockton	35,353	7	3	14.28	—	14.28	—	—
Malden	32,891	24	9	29.12	16.64	20.80	—	4.16
Chelsea	32,716	17	—	—	11.76	—	—	—
Haverhill	31,406	10	6	50.00	10.00	40 00	—	—
Gloucester	29,775	—	—	—	—	—	—	—
Newton	28,990	6	3	—	16.66	—	—	—
Fitchburg	28,392	14	10	64.46	—	64.46	—	—
Taunton	27,812	13	—	40.74	—	40.74	—	—
Quincy	22,562	12	6	33.33	8.33	25.00	8.33	—
Pittsfield	21,891	—	—	—	—	—	—	—
Waltham	21,812	4	2	—	—	—	—	—
Everett	21,575	10	5	30.00	10.00	30.00	—	—
North Adams	19,135	6	3	66.66	—	33.33	33.33	—
Chicopee	17,368	8	4	25.00	12.50	12.50	—	—
Medford	15,832	—	—	—	—	—	—	—
Newburyport	14,794	—	—	—	—	—	—	—
Melrose	11,965	—	—	—	—	—	—	—

Deaths reported 3,612: under five years of age 1,478; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 686, consumption 297, acute lung diseases 186, diarrheal diseases 483, typhoid fever 97, diphtheria and croup 45, whooping-cough 28, cerebro-spinal meningitis 18, scarlet fever 10, measles 5.

From whooping-cough New York 10, Philadelphia and Pittsburgh 6 each, Boston, Providence, Cambridge, Springfield, Haverhill and Brookline 1 each. From cerebro-spinal meningitis New York 5, Baltimore, Worcester and Holyoke 3 each, Boston and Salem 1 each. From scarlet fever New York 4, Philadelphia and Pittsburgh 2 each, Baltimore and Lawrence 1 each. From measles New York 5.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending September 3d, the death-rate was 24.4. Deaths reported 5,242; acute diseases of the respiratory organs (London) 127, diarrhea 1,438, whooping-cough 75, diphtheria 43, fever 40, measles 30, scarlet fever 19, small-pox (Gateshead) 1.

The death-rates ranged from 15.1 in Halifax to 37.0 in Sunderland; Birmingham 29.5, Bradford 21.6, Cardiff 19.1, Gateshead 31.2, Hull 27.9, Leeds 22.0, Liverpool 30.9, London 22.0, Manchester 30.0, Newcastle-on-Tyne 29.5, Nottingham 21.6, Sheffield 27.7, West Ham 21.6.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING SEPTEMBER 15, 1898.

Murray, R. D., surgeon. To rejoin station at Mobile, Ala., September 2, 1898. To proceed to New Orleans, La., for special temporary duty. September 6, 1898.

Carter, H. R., surgeon. To proceed to Taylor, Miss., for special temporary duty. September 2, 1898. To rejoin station at New Orleans, La., temporarily. September 13, 1898.

Banks, C. E., surgeon. Granted leave of absence for twenty-two days from September 12, 1898, on account of sickness. September 14, 1898.

Glennan, A H., surgeon. To proceed to Tortugas Quarantine Station for special temporary duty. September 12, 1898.

Wasdin, Eugene, surgeon. Relieved from duty at Santiago, Cuba, and directed to return to the United States by the first conveyance. September 3, 1898.

Brooks, S. D., surgeon. Granted leave of absence for four days. September 10, 1898.

McIntosh, W. P., passed assistant surgeon. To proceed to Grand Junction, Tenn., for special temporary duty. September 6, 1898.

Magruder, G. M., passed assistant surgeon. To close Montauk Point, N. Y., Quarantine Station, then to rejoin station at Memphis, Tenn., reporting to Bureau *en route*. September 14, 1898.

Kinyoun, J. J., passed assistant surgeon. Relieved from duty at Montauk Point, N. Y., and directed to rejoin station, Hygienic Laboratory, Washington, D. C. September 4, 1898.

Cobb, J. O., passed assistant surgeon. To report at Bureau. September 2, 1898. To proceed to Jackson, Miss., for special temporary duty. September 3, 1898. To proceed to Taylor, Miss., for special temporary duty. September 5, 1898.

Young, G. B., passed assistant surgeon. To report at Bureau for special temporary duty. September 6, 1898.

Stimpson, W. G., passed assistant surgeon. To proceed to Grand Junction, Tenn., for special temporary duty. September 6, 1898. To proceed to Holly Springs, Miss., for special temporary duty. September 8, 1898.

Stewart, W. J. S. passed assistant surgeon. Granted leave of absence for three days from September 6, 1898. September 3, 1898.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for two days upon being relieved from duty at Montauk Point, N. Y., then to rejoin station, Hygienic Laboratory, Washington, D. C. September 14, 1898.

Cumming, H. S., assistant surgeon. Upon closure of the Montauk Point, N. Y., Quarantine Station, to rejoin station at New York, N. Y. September 14, 1898.

Tabb, S. R., assistant surgeon. To proceed to Reedy Island Quarantine Station, Del., and report to commanding officer for duty. September 6, 1898.

Hastings, Hill, assistant surgeon. To proceed to St. Louis, Mo., and assume temporary charge of Service. September 13, 1898.

Lavinder, C. H., assistant surgeon. To report at Bureau for instructions. September 14, 1898. To proceed to Egmont Key Detention Camp, Port Tampa, Fla., and report to commanding officer for duty. September 15, 1898.

Parker, H. B., assistant surgeon. Assigned to duty as Sanitary Inspector on U. S. Transport "Minnewaska." September 3, 1898.

Foster, M. H., assistant surgeon. To proceed to Savannah, Ga., and await orders. September 5, 1898.

Lumsden, L. L., assistant surgeon. To proceed to Delaware Breakwater Quarantine, Del., and report by letter to commanding officer for duty and assignment to quarters. September 6, 1898.

White, Mark J., assistant surgeon. To rejoin station, Immigration Service, New York, N. Y. September 8, 1898.

SOCIETY NOTICE.

Mississippi Valley Medical Association. — The annual meeting of the Association will be held October 11, 12, 13 and 14, 1898, in the Capitol, Nashville, Tenn., commencing at 10 o'clock, A. M., October 11th.

Henry E. Tuley, M D., *Secretary*,
111 West Kentucky St., Louisville, Ky.

BOOKS AND PAMPHLETS RECEIVED.

Thirtieth Annual Announcement of Louisville Medical College, Session of 1898–99.

Transactions of the Ohio State Medical Society, 1898, Columbus, O. Cleveland: J. B. Savage. 1898.

The Tuberculin Test in Cervical Adenitis. By Edward O. Otis, M.D., Boston, Mass. Reprint. 1898.

Eighteenth Annual Announcement of the University Medical College of Kansas City, Mo. Session of 1898–99.

Uremia in the Process of Child-Bearing. By Henry F. Lewis, A.B., M.D. (Harv.), Chicago, Ill. Reprint. 1898.

Transactions of the Medical Society of the State of New York for the year 1898. Published by the Society. 1898.

The Conservative Treatment of Fibroid Tumors by Myomectomy. The Conservative Treatment of Pelvic Suppuration of Puerperal Origin. By Charles P. Noble, M.D., Philadelphia. Reprint. 1898.

Address.

AUENBRUGGER AND LÆNNEC, THE DISCOVERERS OF PERCUSSION AND AUSCULTATION.[1]

BY EDWARD O. OTIS, M.D., BOSTON,
President of the American Climatological Association.

(Concluded from No. 12, p. 285.)

RÉNÉ THÉOPHILE HYACINTHE LÆNNEC was born at Quimper, lower Brittany, France, February 17, 1781. His mother dying of consumption when he was five years of age, his father for some reason or other placed him under the care of an uncle who was the rector of the parish of Etian. His guardian soon afterwards being promoted to another field of labor transferred his charge to another uncle, Guillaume François Lænnec, a physician and man of eminence at Nantes, and a professor in the medical school there. He became a veritable father to the boy; gave him a sound and thorough education in Latin and Greek, and at an early age excited in him a love for the exact sciences and observation. So what seemed at first to be a misfortune proved a great good fortune, not only for Lænnec himself but for the world. If he had remained with his father, or his uncle the rector, he might have been a lawyer or a priest. No doubt he would have achieved distinction in either profession, but the world would have had to wait longer for mediate auscultation. He received his early medical education under the direction of his devoted uncle, and at the age of nineteen in 1801, he went to Paris to complete it, where he entered the service of Corvisart at the Hôpital la Charité.

Lænnec took his doctor's degree in 1804, at the age of twenty-four. He had been a most industrious student, and during his first three years at La Charité he drew up a minute history of nearly four hundred cases of disease. After entering upon the practice of medicine, he continued with unabated zeal his studies and observations; became the editor of the *Journal de Médecine*, and lectured upon pathological anatomy, to investigations in which he continued to devote himself. He also wrote various monographs, as he continued to do during his professional life. In 1816, at the age of thirty-six years, he was appointed chief physician to the Neckar Hospital, and soon after entering upon his duties he made the discovery which immortalized his name.

One day while traversing the court of the Louvre, he perceived some children amusing themselves by applying the ear to the two extremities of a long beam or piece of wood, and transmitting reciprocally the light sound arising from the blow of the finger against the opposite end. In the intermediate space no sound was perceptible. Lænnec reflected upon this, and some days after, on being consulted by a young woman, presenting the general symptoms of cardiac disease, with whom percussion was unsatisfactory on account of her stoutness, and her age and sex prohibiting the direct application of the ear to the chest, he recalled the children in the court of the Louvre. Immediately he took a quire of paper and made a tight roll, one end of which he applied to the chest of the young girl, and the other to his ear. With delight he found that in this way he perceived much more plainly the beating of the heart. Thus, as Chereau[8] says, the sport of the children and respect for modesty are two facts which played a part in the discovery of mediate auscultation.

When profound knowledge in any branch of learning exists and genius is present, the discovery is not far distant, and any seeming trivial event may disclose it. As Richardson[9] well says, "How truly trifling a circumstance may be the vital circumstance which such men disclose, from what to men, unendowed with the finer faculty, are mere passing incidents!" "What millions of physicians," he continues, "must have attended millions upon millions of chest disease between Hippocrates and Lænnec; physicians learned as Galen, wise as Sydenham, keen as Morgagni! And yet Lænnec was the man and mind wanted to make, or rather complete a discovery that had been lying ready for birth some thousands of years. It waited for the fat young lady with heart disease whose chest could not be touched by ears polite, for the quire of paper that admitted of being rolled into a tube for listening through, and for this man Lænnec to do the part of thoracic eavesdropper."

LÆNNEC.
(From the *Practitioner.*)

Lænnec devoted two years in testing and developing his new discovery. One can but faintly imagine the unspeakable delight which he must have experienced as he found himself enabled to clearly determine various pathological conditions of the heart and lungs, previously obscure and undetermined. How eagerly he must have hurried to his hospital clinic each day, and rejoiced to find there a new case of thoracic disease. His patient and untiring industry of the previous years in the study and observation of disease was all unwittingly preparing him to utilize at once his discovery. The tool fell into trained hands ready to produce with it the perfected result.

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[1] The President's Address at the meeting of the American Climatological Association, at Maplewood, N. H., August 31, 1898.

[8] Chereau, Dr. A.: Lænnec, Archives Générale de Médecine, 7 Series, 4, 1879.

[9] Lænnec, by Benjamin Ward Richardson. The Asclepiad, 5, 1888.

In 1818 he communicated his discovery to the Academy of Sciences, and a committee of three reported in complimentary terms upon it, but without enthusiasm. In the succeeding year, 1819, he published his immortal "Traité l'Auscultation Médiate." After referring to the incident which led to the discovery, he says: "I forthwith commenced at the hospital Neckar, a series of observations which have continued to the present time. The consequence is that I have been enabled to discourse a set of new signs of disease of the chest, for the most part certain, simple and prominent, and calculated, perhaps, to render the diagnosis of diseases of the lungs, heart and pleura as decided and circumstantial as the indications furnished to the surgeon by the introduction of the finger, or the sound in the complaints wherein they are used."

Time has proved to be true all he claimed, and, as Dr. Stokes says, "The introduction of auscultation and its subsidary signs was one of the greatest boons ever conferred by the genius of man on the world."

Lænnec said nothing new upon percussion, nor did he ever describe all the results indicated by Auenbrugger and Corvisart, but, as Mailliot says, he was entirely absorbed in auscultation; still in his chapter upon its use he very fairly estimates its value, and speaks appreciatingly of its discoverer: "One of the most valuable discoveries ever made in medicine."

At first he was not inclined to give a name to his new instrument, but finding that others were suggesting various ones he happily fixed upon the euphonious one it now bears. He describes it as follows: "A wooden cylinder, an inch and a half in diameter, and a foot long, perforated longitudinally by a bore three lines wide, and hollowed out into a funnel-shape to the depth of an inch and a half at one of its extremities. There is a stopper or plug which can be inserted into its excavated extremity, thus rendering it a simple cylinder. It is divisible in the middle of its length by a screw, partly for the convenience of its carriage, and partly to permit its being used of half the usual length." The simple tube being used for the heart and voice, and with the plug out for exploring respiration and rhonci.[10]

Of the treatise itself you are doubtless all familiar and can attest the truth of Dr. Addison's[11] averment that it will ever remain a monument of genius, industry, modesty and truth. "It is a work," he continues, "in perusing which every succeeding page only tends to increase our admiration of the man, to captivate our attention, and to command our confidence. We are led insensibly to the bedside of his patients; we are startled by the originality of his system; we can hardly persuade ourselves that any means so simple can accomplish so much, can overcome and reduce to order the chaotic confusion of thoracic pathology; and hesitate not in the end to acknowledge our unqualified wonder at the triumphant confirmation of all he professed to accomplish."

A brief reference to his conclusions upon the curability and treatment of phthisis may be interesting as showing how nearly in accord he was with present day opinions: "The cure of consumption," he says, "when the lungs are not completely disorganized, ought not to be looked upon as at all impossible, in reference either to the nature of the disease or of the organ affected." "The pulmonary tubercles differ in no respect from those found in scrophulous glands; and we know that the softening of these latter is frequently followed by a complete cure." After reviewing the various cures suggested — a motley crowd of them — bleeding, the actual cautery, issues, blisters, mineral waters, purgatives, balsamics, vapors, the air of cow houses, inspiration of different gases, mercurial salivation, emetics, acorns, roasted or raw, charcoal, different kinds of mushrooms, crabs, oysters, frogs, vipers and chocolate — he finally concludes by saying, "that although the cure of tuberculous phthisis be possible for nature, it is not so for medicine." In order to make a direct attack upon the disease, he says, "we ought probably to be able to correct an unknown alteration in the assimilation or nutrition. Of all the measures hitherto recommended for the cure of phthisis none had been followed more frequently by the suspension or complete cessation of the disease, than change of situation." In one of his hospital wards he tried the experiment of establishing an artificial marine atmosphere by means of fresh sea-weed, suggested to him, doubtless, by the wholesome sea-air on the coast of his native Brittany. His statements, based upon accurate and abundant observations, carefully analyzed and verified by dissections, and illustrated by frequent histories of cases, are admirable illustrations of the finest kind of scientific medical writing. His style is simple and lucid. "The fundamental truths presented by the discoverer of auscultation," says Dr. Flint, Sr,[12] "not only remain as the basis of the new science, but form a large portion of the existing superstructure. Let the student become familiar with all that is now known on this subject, and he will then read the writings of Lænnec with amazement that there remained so little to be altered or added."

After the publication of his treatise, Lænnec's health was so impaired that he was compelled to give up his work and retire to his native province, and, as one of his biographers expresses it, "escape his glory." He had completely exhausted his limited supply of physical force, and suffered from extreme depression of spirits which not infrequently follows excessive mental application. With freedom from care and labor, and an outdoor life amidst the delightful associations of childhood and youth, he gradually wooed back a moderate degree of health, and at the end of two years returned to Paris, "solely influenced," says Forbes, "by the idea that he might be of use to mankind by extending the knowledge of auscultation." It is quite possible, too, that he thought of the fate which had befallen Auenbrugger's discovery until Corvisart shook the dust from it. It was a fatal step as the sequel proved, and it seems to me doubtful if his subsequent labors, particularly in the revision and additions to his treatise, added materially to his great achievement as so exhaustively unfolded in the original edition of his work; but his courage was admirable and his motive noble and unselfish.

It was in the year 1821 that he returned to Paris, being then forty years of age. The following year he was elected professor of medicine in the college of France, and in 1823 professor of clinical medicine at the Hôpital la Charité where, nearly twenty years before, he had been a medical student under Corvisart. Students and physicians from France and other countries flocked to his clinics, and through them mediate auscultation became widely known and popularized. In his clinic at la Charité, he was teaching the medical world, and herein he had an immense advantage over Auenbrugger who was never a clinical teacher. Besides his exacting hospital labors, he resumed his private practice, became physician to the Duchess of Berri, and began a revision of his treatise on auscultation, which was so complete that it almost seemed a new work. No man with his impaired and delicate constitution could endure the strain of such excessive and continuous work, and in the midst of the revision the break came. By a heroic struggle he managed to complete it, and then his labors for this world were at an end. "After having uselessly employed two bleedings and some other means," as one of his contemporaries says, "and seeing that he grew more and more feeble and thin," cough, fever and other distressing symptoms supervening, he set out again for Brittany, hoping that his native air and soil might once again prove beneficial, instinctively feeling that if anything could revive him it was kindly nature as expressed in outdoor air, familiar scenes, and restful life, rather than bleedings or potions. Infinitely pathetic was his endeavor to show that his physicians were mistaken in their diagnosis of pulmonary tuberculosis, when the symptoms of the disease were so evident, as he himself would have quickly recognized in one of his patients. His death occurred August 13, 1826, at the age of forty-five. He was married two years before, but left no descendants.

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[10] Through the kindness of Dr. V. Y. Bowditch, one of Lænnec's original stethoscopes (used by him) was exhibited. It was the property of Dr. Henry I. Bowditch, and left by him to the Warren Museum of the Harvard Medical School, where it now is.

[11] Hudson: Lænnec, British Medical Journal, ii, 1879.

[12] New Orleans Medical News, 6, 1859-60, page 736.

There stands in the Cathedral Square at Quimper, Brittany, a statue of Lænnec erected in 1868. The illustrious physician is represented clothed in official costume, sitting; holding in his right hand a stethoscope, while he raises the left as in the act of a demonstration. Upon it is the following inscription:

A l'inventeur de l'auscultation,
Lænnec, Réné-Théophile-Hyacinthe,
Né à Quimper, le 12 février 1781,
Mort à Plouaré en 1826;
Professeur à la Faculté de Médecine de Paris
et au Collége de France,
Membre de l'Académie de Médecine."

Ce monument a été élevé
par l'Association générale de Médecine de
France, par la Bretagne,
et par les Médecins français et étrangers, 1868.

In personal appearance Lænnec was small of stature, had fine clear cut features, a refined and sensitive mouth, extremely delicate complexion, and keen eyes. He was of a nervous temperament, and physically was never robust, although he accomplished such an enormous amount of work. He was simple and abstemious in his habits, especially in eating, and ordinarily was never very long at the table. "He was mild and agreeable in his manners, and of a quiet and even temper." Ardent passions were unfamiliar to him. He possessed firmness, and was tenacious of his opinions. Like most men of his calibre, he was humble and kind-hearted, which was in no degree lessened by his great reputation and the deference paid to him in the latter years of his life. He used to ride to the hospital in a modest hired cab, and his dress was always the same; short breeches, a black coat, and white cravat. When, however, he paid a professional visit to the Duchess of Berri or Cardinal Fesch, whose physician he was, he wore, according to the custom in making such visits, a dress coat, a regulation chapeau, and a ceremonial sword.

In spite of his feeble constitution, he was a great lover of the chase, and in the season he used to go out to the parks in the suburbs of Paris and indulge in this sport. In the winter he would amuse himself by shooting at a target with an air-gun in his apartment. He was fond of music and played upon the flute, his fine, delicate lips enabling him to obtain a good tonguing. This knowledge of music and the power which it gave him, of making fine distinctions in differentiating respiratory sounds and vocal resonance, must have been invaluable to him in developing his discovery; in his treatise he refers to certain flute sounds to illustrate his meaning when speaking of the pectoriloquy of large excavations. In one corner of his apartment he set up a lathe and amused himself in turning objects, and used to make his own stethoscopes.

"The rich," says his contemporary Bayle, "he frequently refused to visit on account of the bad state of his health, but the poor never; nor was it only in the way of professional advice that he served the poor; he was extremely liberal in relieving their distress with pecuniary aid, and in a manner so unostentatious, that it is only since his death that the extent of his bounty has come to light." He was never greedy after practice for the sake of the money it would bring him. His private practice is said to have brought him about twenty-five thousand francs a year.

He had fixed religious principles which he did not conceal, and his death, says Bayle, was that of a Christian. As Flint says, "His life affords an instance among many others disproving the vulgar error that the pursuits of science are unfavorable to religious faith."

Lænnec's whole life was so absorbingly devoted to professional pursuits that there was little time or strength left for anything else; and yet such an active mind as his could hardly escape knowing something of other departments of knowledge. Latin and Greek he knew to perfection, and was accustomed to conduct his clinics in the former language, and sometimes to correspond in it. "Lænnec's genius," says Forbes, "was decidedly inventive, and his turn of thought original." He was a consummate student in the art of observation and possessed "profound knowledge of organic diseases," and "was remarkable for his diagnosis of them in the living body." "In the diagnosis of diseases of the chest, he was universally allowed to be without a rival." Forbes thinks he did not possess in a high degree the mental qualifications necessary to constitute a great and skilful practitioner; perhaps he did not, nor does it so much matter; many men of lesser ability could be good practitioners, but a discoverer, teacher and investigator of Lænnec's capacity appears but seldom.

He was absolutely true and unselfish in his professional aims. To improve his art, to seek truth in it wherever found, to establish the diagnosis of disease upon the sound basis of pathological anatomy and accurate observation, and to extend the knowledge of his new discovery; this was what he labored for. In brief, the impelling motive of his life was, as Flint says, "a love of truth for its own sake, and a desire to be useful to his fellowmen" — the ideal and aim of a lofty soul. His courage in continuing his labors in weakness and suffering was superb and heroic. How fine the struggle to complete the second edition of his treatise.

There is something pathetic in the loneliness of Lænnec's life so far as social and domestic relations were concerned, as contrasted with that of Auenbrugger's. His daily home-coming after his arduous duties at the hospital must have been a rather dreary one, with no happy greeting of wife or children; but he was so absorbed in his work that we may suppose he did not consciously miss what he had never had. Nor do such men as he care much for social distractions; the physician is ever intimate with life and human nature in all its infinite variety.

Lænnec, as I have said, published various papers, reviews and criticisms, the most of them written in the early part of his life; the most noteworthy perhaps being a treatise on the melanoses, one on encephaloides, one on pathological anatomy, an essay on angina of the chest, and a description of the anatomical condition of the lungs in emphysema. Of this latter, Rokitansky said that had Lænnec done nothing more it would have been sufficient to render his name immortal. "His writings are generally marked," says Forbes, "by sound sense, clear views, and perspicuous order."

Such was Lænnec's life, and such his contributions to the advancement of his art. To few in our profession, or in any other, is it given to add so much to the sum total of the existing knowledge upon the subject of their labors. To all of us, however, it is permitted to maintain the same exalted attitude towards our profession, and a readiness to increase, if happily we may, the knowledge of it, however humble the contribution may be. The greatest honor any of us can pay to the memory of such men as Auenbrugger and Lænnec is to emulate their lofty example.

I trust it may not have been without interest to you to have reviewed with me the lives of these two illustrious men, whose discoveries have made it possible for us, as I said in the beginning, to exist as an Association especially devoted to disease of the thoracic cavity. In the ever increasing mass of medical knowledge to become familiar with, but little time or opportunity is left for the study of medical biography, but, as Dr. Flint says, "The contemplation of the lives of worthy brethren who have gone before us is well calculated to stimulate our zeal, guide our aims, encourage us to perseverance, and increase the attachment to our calling." "Who can doubt," he continues, "that it is in the order of Providence for the illustrious dead to serve as shining lights for the living! To illumine the paths of those who are to follow in their footsteps was part of their mission. This thought should stimulate the desire to live beyond this bodily existence, in the cherished remembrance of mankind. It is a noble and virtuous ambition to strive thus to survive on earth the brief term of mortal life."

BIBLIOGRAPHY.

Leopold Auenbrugger, der Erfinder der Percussion des Brustkorbes, und sein Inventum Novum, von Prof. Dr. Clar, Grätz, 1867.

Nouvelle Méthode pour reconnaitre les Maladies Internes de la Poitrine par la Percussion de cette Cavité par Auenbrugger. Ouvrage traduit du Latin et commenté par J. N. Corvisart, Paris, 1808.

Traité de l'Auscultation Mediate et des Maladies des Poumons et du Cœur, par R. T. H. Lænnec. Troisième edition. Augmentée de Notes par Mériadec Lænnec, Paris, 1831.

A Treatise on the Diseases of the Chest and on Mediate Auscultation, by R. T. H. Lænnec, translated by John Forbes, from the Third French Edition, New York, 1838.

Archives Générales de Médecine, 6 Série, Tome xxv, 1875. Souvenirs relatifs à Lænnec, par son ancien élève A. Toulmonche, p. 626.

Ibid, 7 Série, Tome 4, 1879. Lænnec, par Dr. A. Chereau, p. 51.

The Asclepiad, London, vol. v, 1888. Réné Théophile Hyacinthe Lænnec, M.D., and the Discovery of Mediate Auscultation by the Stethoscope, by Benjamin Ward Richardson, M.D., F.R.S., p. 241.

New Orleans Medical News, 6, 1859–60. The Life and Labors of Lænnec. An introductory address delivered at the New Orleans School of Medicine, November 14, 1859, by Austin Flint, M.D., p. 736.

British Medical Journal, August 9, 1879 Hudson Alfred, M.D., F.R.Q C.P., M.R.I.A.: "Lænnec, His Labors and their Influence in Medicine."

Holmes, Oliver Wendell. "Dissertation on Direct Exploration in Medical Practice." Boylston Prize Essay, 1839

"A Treatise on the Diseases of the Chest in which they are described according to their Anatomical Characters and their Diagnosis Established on a New Principle by Means of Acoustic Instruments." Translated from the French of R. T. H. Lænnec, by John Forbes, Philadelphia, 1823.

Ibid, London, 1821.

Notice sur le Professeur Lænnec, par M. Lejumeau Kergaradec, D.M.P., 1826.

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Original Articles.

THE SURGERY OF GASTRIC ULCER, WITH THE REPORT OF A CASE OF GASTROLYSIS.[1]

BY J. COLLINS WARREN, M.D., BOSTON.

Gastric ulcer is a disease so amenable to treatment in the vast majority of cases that it has been considered an affection almost exclusively within the domain of internal medicine. It has long been recognized that in a small percentage of cases from 1.2 to 13 per cent. variously estimated, the very fatal complication of perforation occurs, which could only be met by surgical intervention, but there are a number of other conditions which justify surgical interference, and it is the purpose of this paper to call attention to some of them. Moreover, it is a more common disease than is generally supposed to be the case; according to Ewald it affects from four to five per cent. of the whole population. Although three-fourths of all ulcers heal spontaneously, the conditions which give rise to ulcer, or follow it, often lead to serious complications which cannot be relieved by internal medication. These conditions form a chain of evils whose sequence is not entirely clear, but which seem more or less intimately connected with one another. They resemble that group of symptoms seen elsewhere following obstructions, and recalling in some cases, without great stretch of imagination, those attending enlargement of the prostate gland. We have imperfect emptying of the stomach, dilatation, a change in the chemical products secreted, hyperacidity and ulceration with its attendant sequelæ, inflammation and hemorrhage.

Whether pyloric stenosis precedes or follows ulceration is not always clear. The great susceptibility of the pylorus to reflex irritation is the cause of a great variety of diseases of the stomach, and also of the persistence of the anatomical lesions which accompany it. (Comte.)

The intimate association of pyloric spasm with ulcer has suggested the possibility that the former is the primary affection. The theory is at least generally strengthened by the fact that operations directed towards relief of spasm and of obstructions have a most beneficial effect upon the whole group of morbid processes.

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[1] Read before the Boston Society for Medical Improvement, May 16, 1898

At all events, with the development of ulcer we find either a spasm of the pylorus which subsequently becomes a permanent stricture due to inflammatory infiltrations, or the cicatricial contractions of a pyloric ulcer may cause organic stricture. In many cases a fold or bar is found at the pyloric neck of the stomach, around the edge of an ulcer, and exerts a valve-like action at the pylorus.

It is, of course, not always necessary that mechanical obstruction should exist to bring about dilatation of the stomach, as that organ is so constituted that a primary or atonic dilatation can develop to such a point, that all the conditions of a stenosis of the pylorus may be produced.

We have then a sort of vicious circle of events in the spasm or stricture of the pylorus, hyperacidity and ulceration, which are the prominent factors in the group of symptoms of this affection, and it is among the complications of this complex condition that we find the indications for surgical interference.

Even under the most favorable combination of circumstances, namely, the healing of the ulcer, we find subsequent cicatrices, which as the cause of pyloric stenosis may give rise to serious interference of nutrition, and may pave the way to a grave cachexia such as phthisis.

The occurrence of cancer in the ulcer or its cicatrix is not a very rare event. According to Comte four to nine per cent. of cancers of the stomach have been preceded by ulcers as a preliminary stage. Carcinomatous degeneration of ulcer or its scar is said by Hauer to occur in six per cent. of all cases of ulcer. Doyen thinks that Comte's figures are too low and regards as one of the greatest triumphs of stomach surgery, not the removal of cancer, but the cure of non-malignant affections which may eventually give rise to it.

The mortality of ulcers of the stomach is rated by some as high as 28 per cent.; on the other hand, of 556 cases treated by Leube medically, 12 died, or 2 per cent.; of these, 8 per cent. died from hemorrhage and 1.2 died from perforation. Surgical treatment according to this author is indicated in only about 4 per cent. of all cases.

Statistics given by various authors vary so greatly that it is hardly worth while to repeat them here, but if we take into account the various complications above mentioned, we find, according to Mikulicz, that the mortality of this disease rises to quite an appreciable figure, 25 to 30 per cent., and it begins to be apparent that among this pretty large remnant of fatal cases there are a not inconsiderable number which might be saved by surgical intervention provided always an operation can be found that will break the vicious circle and restore a normal physiological condition.

The principal conditions under which surgery may become necessary are perforation, hemorrhage, persistent spasm of the pylorus with its attendant pain and dilatations and, finally, perigastritis with the formation of adhesions and abscess.

The conditions demanding operation prevail according to Leube in about four per cent. of the cases.

The operations which have been most frequently employed for the relief of these conditions are resection of portions of the stomach or pylorus, gastroenterostomy and pyloroplasty.

Statistics given by Mikulicz show that in a collection of 238 of these three operations, the mortality previous to the end of 1890 was quite high, namely, 48.1 per cent.; but that between 1895–7 it had fallen to 10 per cent., owing doubtless to greater experience and improved technique. They also show another interesting fact, that previous to 1891 resection was most frequently performed and pyloroplasty least frequently, but that the figures had gradually changed so that at the present time the order was reversed, and that resection being the most dangerous of the three was less and less resorted to, and pyloroplasty and gastro-enterostomy in about even numbers had been the operations usually adopted having almost one-half the percentage of mortality as resection.

It will be seen from these figures that surgical procedures of this kind are not more dangerous to life than the disease itself when allowed to run its course.

Let us now turn for a moment to the conditions which demand surgical operation: we find, first, perforations of the ulcer, about which there has never been any doubt as to the propriety of interfering in spite of the many fatal cases. The only chance of a favorable result appears to exist when the stomach is empty at the moment of perforation, and then only when the operation is performed within ten hours. Under these circumstances, according to Leube, about one-quarter of the cases are saved.

According to Weir and Foote the mortality of operated cases of perforation is 71 per cent. Of these operated upon in the first twelve hours it is only 39 per cent., but between twelve and twenty-four hours, the percentage of mortality rises to 76 per cent.

The perforation may take place into the free abdominal cavity and then produces a general septic peritonitis, a most desperate condition. It is, however, interesting to know that at least a dozen cases are on record in which recovery has been perfect though an undoubted perforation has occurred (Weir). Fortunately as the ulceration nears the surface, a protective perigastritis is usually set up, and what in some cases causes an independent complication, necessitating a special operation for its relief, is here a safeguard against general infection. The localized peritonitis brings about firm adhesions and walls off the general peritoneal cavity. It is under such circumstances that the small numbers of spontaneous cures reported take place. This condition more frequently leads to abscesses (sub-phrenic or elsewhere). According to Debove and Renault, the following is the relative frequency of the seat of perforation, — anterior wall 85 per cent., cardiac extremity 4 per cent., lesser curvature 18 per cent., pylorus 10 per cent., posterior wall 2 per cent.

Perforation in the anterior wall is less liable to be protected by adhesions than elsewhere. Fortunately under the skilful treatment of Leube this fatal complication has been reduced to 1.2 per cent. Needless to say that although some advise waiting for the first shock of the perforation to subside, the operation should be performed at the earliest possible moment.

As to the choice of operation, an attempt might be made in favorable cases to resect the ulcer, but suture is more rapid and less liable to increase shock. The particular method employed would depend upon the circumstances of each individual case.

The next most serious complication is hemorrhage. According to various authors fatal hemorrhage occurs in 3 per cent. to 5 per cent of the cases, but in Leube's statistics, made up from 556 cases treated by himself, there was only 0.8 per cent. deaths from this cause. Hemorrhage is, however, one of the most common complications of ulcer and it accordingly becomes an important question to determine which are the cases adapted to surgical interference. It is of course only in cases which threaten life that the surgeon would advise operation. Even cases of profuse hemorrhage often get well under medical treatment. It would therefore be well to wait to see if under a proper treatment the hemorrhage might not stop. A second or third bleeding would bring the patient into a condition unfavorable for operation, and it is under these circumstances that the surgeon is usually called upon to operate. Lindner justly says, "If the surgeons cares for his statistics in these cases he will not operate; if he wishes to give his patient a chance for life he will." Fortunately profuse hemorrhage kills in less than one per cent. of the cases. It is only by experience that one can learn when to interfere in such a condition.

The indications are much clearer in cases of frequent small and persistent bleeding extending over a period of weeks or months until the patient is gradually reduced to a condition of fatal anemia. Here it is generally agreed that when medical treatment fails to prevent recurrence a surgical operation should be performed.

In cases of profuse hemorrhage it is justifiable to attempt to find the bleeding vessel and tie it, thus following out the surgical law in regard to hemorrhage. Attempts have been made to do this in numerous cases, but usually without success. The bleeding vessel, it appears, is most frequently either the superior coronary artery, or one of the large arteries in the pancreas, to which organ the stomach has attached itself. In the latter case the vessel is a branch of the celiac axis. More rarely the bleeding point comes from the splenic artery. Mikulicz reports only two cases in which the vessel was found.

In one case the ulcer was seated on the lesser curvature and the bleeding came from the superior coronary artery. Mikulicz excised the ulcer and sewed up the wound successfully. In many cases there is so much infiltration about the base of the ulcer especially when it is attached to the pancreas, that excision is out of the question. Under such circumstances the hemorrhage has been arrested by cautery. This operation has, however, not been attended with success, the patient dying either from shock or a recurrence of the hemorrhage. A combination of cautery with gastro-enterostomy, thus obtaining a physiological rest, seems to offer a better chance. Two such cases are reported by Küster with successful result. It has happened not infrequently that no ulcer could be found, or there may be several ulcers, and it is then difficult if not impossible at times to determine the bleeding point. Under these circumstances gastro-enterostomy or pyloroplasty are the operations to be selected. Lindner recommends circular or segmentary resection of the ulcer when it can be performed as a more radical method of cure because sewing the ulcer or the cautery are mere temporary procedures. Care must be taken, however, not to make a stricture of the stomach, and in case of any doubt a gastro-enterostomy may also be necessary.

Another direct complication of the ulcer itself is pain of an intense character and persistent vomiting. It is only in extremely rare cases that an operation would be indicated. Either gastro-enterostomy or resection of the ulcer are the operations to be employed.

A case of this class came under the observation of the writer some fifteen years ago. The prevailing symptom was pain lasting over a great number of years, the patient eventually becoming addicted to large doses of morphine given subcutaneously. Death finally occurred, with symptoms of profound anemia, and a large ulcer with extensive perigastritis was found near the pyloric orifice. An operation may be indicated in extreme cases of recurring ulcers.

The sequelæ of ulcer comprise conditions already referred to, namely, dilatation of the stomach from atony or as the result of pyloric stenosis and perverted secretion consisting in an increase of hydrochloric acid. These constitute conditions extremely unfavorable for the healing of ulcer. The spasmodic contraction of the pylorus and the dilatation of the stomach cause a constant pulling upon the borders of the ulcers, while the increased acidity favors ulceration rather than granulation. The presence of the ulcer, on the other hand, tends to aggravate the stenosis, which is often partly functional. There is, in fact, the same mutual reaction that we see in a paralyzed or obstructed bladder. The same principles of treatment apply, therefore, to both. The obstruction must be relieved and physiological rest given to the organ if possible.

Experience shows that this symptom is attended with beneficial results in the case of the stomach. After the operations of pyloroplasty or gastro-enterostomy the movements of the stomach return in a few months, and the secretions often return to normal. If an ulcer is still present the symptoms of it disappear. Gastralgia and dyspepsia are relieved, the patients lose their distress, gain flesh and appetite, and become well again.

Of operations for the relief of stenosis, there are three which possess considerable merit, and may be considered here: resection of the stomach, gastro-enterostomy and pyloroplasty.

Resection of the pylorus is the most radical operation, but is not held in so great favor as the other two, as its mortality is still high.[2] Compte reports 17 cases of resection for ulcer, with five deaths. Moreover, the size and situation of the ulcer do not always permit of this operation. It is manifestly more suited to ulcers near the pyloric orifice. A large ulcer, with adhesion, would make the operation still more formidable. Not infrequently an adjoining organ may form part of the base of an ulcer. Resection is indicated when there is any uncertainty as to the presence of cancer, and inasmuch as cancer follows not infrequently upon ulcer, this operation gives a measure of safety for the future which is not obtained by other methods.

Excision of the ulcer is suitable for small ulcers, particularly those in the anterior wall where perforation is liable to occur. It may also be combined with other operations. In two instances Mikulicz excised the ulcer and stretched the mucous membrane before performing pyloroplasty. This can be done if the

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[2] In a collection of 234 cases of benign stenosis and ulcer the following rate of mortality was found by Mikulicz to exist.

Resection	27.8%
Gastro-enterostomy	16.2%
Pyloroplasty	13.2%
Combined	16.1%

ulcer is easily accessible through the incision made for the operation.

Pyloroplasty is a comparatively safe operation, but it is indicated only in cicatrices of the pylorus without adhesions. It is contraindicated when there are adhesions and when there is an open ulcer near or in the pylorus. If successfully performed, there is also some danger of subsequent stenosis. As a scar is left at the pylorus the cicatricial process previously existing may still go on. Theoretically, it restores the physiological conditions more perfectly than gastro-enterostomy.

Gastro-enterostomy, when successfully carried out, is a most efficient drain for the obstructed and distended stomach. It, moreover, gives physiological rest to that portion of the stomach which is in a state of muscular activity during the digestion. The suggestive diagrams of Cannon [8] show how active this is in certain animals. It is here, moreover, that we find most of the ulcers. By this operation we keep empty the atonic and dilated viscus and switch out of the digestive circuit the diseased bowel. This operation has many enthusiastic supporters, among them Doyen, who reports 21 cases, *all* of which were successful. There is one serious drawback to it. After the jejunum has become attached to the stomach, a spur is occasionally found which prevents the stomach's contents from flowing into the efferent bowel. The contents find their way consequently into the afferent bowel, and return again to the stomach, a vicious anatomical circle thus being established. As a result of this complication the stomach cannot empty itself, and uncontrollable vomiting sets in. The patient usually succumbs at the end of one or two weeks after the operation, and a post-mortem examination shows an enormously distended stomach and duodenum and an empty jejunum.

This mechanical difficulty can be overcome by cutting through the spur and establishing communication between the afferent and efferent intestine. An entero-anastomosis performed in this way is the only sure method of overcoming the difficulty. In case there is great atony of the stomach it might be desirable to forestall this complication and perform gastro-enterostomy and entero-anastomosis of the attached jejunum simultaneously.

Loreta's operation or digital dilatation of the pylorus and gastroplicatio or taking a fold in the dilated stomach are operations which are less frequently performed at the present time. Loreta's operation does not seem to ensure against a relapse of the stenosis and gastroplicatio, although diminishing the size of the stomach does not relieve the stenosis or restore the atonic condition of the muscular walls.

Perigastritis is a condition which accompanies ulcer when the ulceration approaches the parietal peritoneum. It may be of all degrees of severity. There may result very slight adhesions to the abdominal walls, or they may be so extensive as to fasten portions of the stomach to other organs and form a perceptible tumor which can be felt through the abdominal wall. Finally, it may be the forerunner of suppurative processes and subphrenic abscess.

The symptoms of perigastritis are: cardialgia, boring pains, vomiting, hyperesthesia combined with dilatation of the stomach, localized tenderness on pressure, usually in the epigastrium or hypochondrium. In perigastritis postica there may be tenderness in the lumbar regions near the first or second lumbar vertebra. Perigastritis may be suspected where treatment fails to relieve the symptoms of ulcer. The pain resembles somewhat that observed in hernia epigastrica.

These symptoms are brought about by the anchoring of portions of the stomach, so that during the change in volume of the organ and its muscular movements the adhesions are pulled upon. Occasionally they are torn and lacerated by the movements of the abdominal wall. Recurrent attacks of inflammation may be set up in this way.

The operation which has been devised for the relief of this complication is eminently successful and is called gastrolysis. It consists simply in breaking up the adhesions. In the milder types of this affection the operation may be almost a trivial one, but when accompanied by ulcer, other operations directed to the relief of the ulcer must be performed simultaneously. In some cases the simple breaking up of even extensive adhesions is followed by the most satisfactory results. Quite a number of these cases are recorded. Thus Robson operated in 1893 in two cases of adhesion of the stomach with dilatation. There was adhesion to the abdominal wall and under surface of the liver. Ferrier performed a similar operation on a woman sixty-two years of age for adhesions on lesser curvature to liver and abdominal wall.

Mikulicz reports several cases of gastrolysis and also eight in which the infiltrated portion of the stomach wall and the ulcer were resected — all successful.

Finally there remains the so-called hour-glass stomach produced by cicatricial stenosis in the continuity of the stomach.

There are two operations suited for the relief of this condition. The first of these is gastroplasty analogous to pyloroplasty. The second is a gastro-anastomosis, which consists in the junction of the two halves of the stomach through a wide opening. A striking example of this method was the most successful operation of Watson.

The following case of perigastritis was treated by the operation of gastrolysis. The opportunity of operating upon and reporting the case was kindly given me by Drs. Anthony of Bradford, and Clarke of Haverhill. The operation was performed at the Haverhill Hospital with the assistance of Drs. G. C. Clement of Haverhill and my assistant Dr. R. B. Greenough.

The patient, Joseph T. C., married, aged forty-one, was a French Canadian. Little is known about his family antecedents. As a child he had measles and whooping-cough and also croupous pneumonia. He had gonorrhea ten years ago and made a good recovery. Is addicted to a moderate use of alcohol.

He has had chronic dyspepsia and constipation for many years and at certain intervals of time he suffered from paroxysmal attacks of pain in the epigastric region, lasting a few hours.

Some of these attacks were very severe and he is said at these times to have lost consciousness.

There was no history of his having passed any blood in the stools or having vomited blood. No attacks of jaundice at any time.

Two days before entering the hospital on February 18, 1898, he was suddenly seized with great pain in the region of the gall-bladder while at work.

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[8] Harvard Physiological Laboratory.

The patient fell in great agony, was carried home and later to the hospital. The pain lasted for several hours.

On examining him February 25th, I found a rather emaciated individual of sallow complexion complaining principally of dyspepsia. A tumor existed in the right hypochondrium at the margin of the cartilage of the ribs. On palpation it was hard and ill-defined and seemingly attached to the abdominal wall. There was also dulness on percussion. There was also some pain in the right lumbar region. An examination of the urine was negative.

An incision five inches long was made parallel to right costal cartilages and about one inch from them. On dividing the abdominal parietes a thick exudation of yellow lymph was observed, beneath which lay the liver, which was thus firmly attached to the parietal peritoneum. On breaking away these adhesions, the edge of the liver could be drawn up exposing the gall-bladder similarly imbedded in light adhesions. Beneath the gall-bladder, which appeared to be normal, there was more extensive exudation in the centre of which the pylorus was imbedded. On its anterior wall was a layer of partly organized blood-clot about one-quarter of an inch in thickness and one by two inches in dimension. After these adhesions had been broken up palpation failed to detect anything abnormal in the interior of the stomach or duodenum. There was no marked dilatation. After careful walling off with gauze an incision about two and a half inches in length was made in the stomach near the pylorus through which an exploration was made. No ulcer or induration was felt in the stomach, but a cicatricial band at the lower margin of the pyloric orifice narrowed that outlet somewhat so that the forefinger could only with some care be pushed through the constriction. This opening was gradually stretched so as to admit the ring-finger tip. The wound in the stomach was then closed with Lembert sutures. The abdominal wall was closed except one stitch, which was not tied so as to allow a small gauze drain to remain in. The gauze was removed on May 1st and the wound closed. Healed by first intention. The patient was fed on nutrient enemata. Bowels moved on May 4th. Temperature normal since operation. On May 17th semi-solids were given by the mouth. The following week the patient received light house-diet, which caused him no pain or discomfort, and he was discharged "cured" on May 24th.

In order to determine the future of cases of ulcer (and dilatation) of the stomach which have received hospital treatment, Dr. Elliott P. Joslin and Dr. R. B. Greenough have kindly undertaken to obtain for me the histories of 247 cases after they had left the hospital. This group embraces all cases treated at the Massachusetts General Hospital between the years 1888–1898. It is, therefore, practically a study of these cases for an average of five years after leaving the hospital, and gives, therefore, what is equivalent to end results in a large number of cases. Although from an examination of the Hospital Records it would appear that only 43 of the 187 cases of ulcer were discharged from hospital in any other condition than "well" or "much relieved" (22.8 per cent.) it is seen from these statistics that 54 cases in 110 in which we have been able to obtain reports were not permanently relieved by their treatment. Probably, a similar examination of Leube's cases, referred to above, might show less favorable results than he reports.

Of the 187 cases of ulcer, the following came under the head of those probably suitable for operation :

Perforation	6 (1 operated)
All died (1 of renal disease).	
Hemorrhage	5 (2 operated)
Cancer developed	3
Stenosis with dilatation	13
	27 or 14 per cent.

This list does not include cases of relapse after treatment, of which there were 39.

Of the 37 cases of dilatation that reported, 28 cases or 76 per cent. were not permanently relieved. Of the 61 cases of dilatation those probably suited to operation were:

Deaths from cancer	7 (0 operated)
Not cured	18 (1 operated)
	25 or 41 per cent.

Doubtless as our knowledge of the conditions which develop during this disease becomes more thoroughly crystallized, it will be found that a much larger proportion of the cases than is supposed are not amenable to medical treatment, and that symptoms may be relieved and future complications prevented by a surgical operation.

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OBSERVATIONS UPON STONE IN THE BLADDER; RECURRENCE OF STONE; CHOICE OF OPERATION.

BY A. T. CABOT, A.M., M.D.,
Surgeon to the Massachusetts General Hospital.

The cases which I have used in this study of the recurrence of stone in the bladder comprise all of those of which I have notes. I find in these notes that I have done one hundred and thirty-five operations upon one hundred and nineteen patients. These operations divide themselves into one hundred and fifteen litholapaxies with four deaths. Thirteen suprapubic lithotomies with four deaths. Three lateral lithotomies with no deaths. Two median lithotomies with one death. Two vaginal lithotomies with no death.

This list only includes cases of formal operation under anesthesia and takes no note of the many instances in which a crushing and pumping operation has been done with or without cocaine for the removal of small recurrent stones or for retained fragments.

Among these patients are two instances in which a uric-acid stone has re-formed in consequence of the persistence of the diathesis that led to its original formation. On one of these patients I operated twice and upon the other three times.

There are nineteen instances in which a phosphatic stone has appeared some months or years after the removal of a primary stone. In two or three instances the primary stone was a uric-acid calculus, in all other cases it was phosphatic.

In six of these cases the previous operation had been done by some other operator.

This recurrence of a phosphatic stone may be due to the persistently alkaline condition of the urine. Several instances of this sort have come to my notice, the most striking of which was a case of multiple calculi in which within a fortnight of a thorough washing out the bladder would again contain from fifty to one hundred little, separate, well-formed stones. This tendency was finally overcome by frequent pumping out of the calculi combined with medical treatment directed to making the urine acid.

While phosphatic stones may occasionally depend in this way simply on the condition of the urine, it is much more common to see them as the result of some local condition. In two or three cases the recurrence may perhaps be regarded as the result of an incomplete operation, leaving a fragment to serve as a nucleus for a new stone. This accident has usually been avoided by care in washing out the bladder with the evacuator, ten days or a fortnight after the litholapaxy. In some such cases several washings have been necessary before the bladder was found to be entirely free from calcareous matter.

In one case, of a woman, the projection into the bladder of two stitches put in by two other surgeons for the closure of the opening made in doing a vaginal lithotomy led to the repeated recurrence of calculi until the stitches were found and removed.

In two cases sacculated stones which lay concealed in pockets in the vesical wall gave rise to repeated stone formation in the bladder cavity. The removal of the stones loose in the bladder was followed in each case by such a cessation of symptoms that the presence of the encapsulated calculus was not suspected, but it was finally found by a cystotomy done for the purpose of discovering the condition to which the recurrence of the stone was due.

Finally, certain local conditions of the bladder wall favor the formation of stone and lead to constant recurrences until they are removed.

It is notorious that tumors and granulating surfaces within the bladder are prone to be encrusted with salts. The crystallography of stone formation is interesting in connection with these cases of calcareous deposit on granulating surfaces.

The crystals that exist in the urine do not tend to cohere and form a stone except in the presence of albuminous material. Rainey showed many years ago that the presence of colloid or albuminoid substances in a solution causes crystalline materials to become spheroidal in shape and to coalesce in rounded form. This is the law of molecular coalescence which has a very decided bearing upon stone formation in the bladder.

As long as the urine is non-albuminous, crystals of uric acid or oxalate of lime may form in the urinary passages, be washed along and discharged with the urine without forming a stone. But when albumin is present, either in the pus thrown out in consequence of some irritation or in the serum exuding from a granulating surface, we have conditions favorable to "Molecular Coalescence."

The following case is an interesting illustration of this method of stone recurrence:

M. V. B. M., fifty-six years of age, came to see me in the autumn of 1894, with considerable irritation of the bladder for which he was using the catheter by a physician's advice. At this time the symptoms did not strongly suggest a stone and the searcher could not be introduced on account of the extreme sensitiveness of the neck of the bladder. Palliatives were advised with resort to an ether examination if the symptoms persisted. He was seen again nine months later and the symptoms were then so suggestive of stone that he was etherized and a soft stone was crushed and pumped out. This calculus was so small that it seemed as if it must be of recent origin.

The operation was an easy one and during convalescence it was found that the bladder emptied itself almost completely at each urination. Six weeks after this operation the bladder was pumped out thoroughly without ether and a small amount of calcareous matter removed.

Five months later he again had symptoms of stone and another phosphatic stone was removed by litholapaxy. This operation was done at the Massachusetts General Hospital and he was kept in the hospital for more than three weeks during which time his bladder was carefully pumped out several times and entirely cleared of calcareous matter. He went out with the urine clear and acid. Soon after, however, it became evident that the stone was forming again. The constant reappearance of phosphatic stones in a bladder which completely emptied itself and in a urine which was never excessively alkaline seemed to indicate that there was some special cause for the deposit of calcareous matter. The patient now decided to submit to a suprapubic cystotomy for the purpose of discovering and, if possible, relieving the condition that so favored the recurrence of stone formation.

The bladder was accordingly opened. Its wall was found in a tolerably healthy condition and the prostate was not markedly enlarged and the post-prostatic pouch was not deep. Just posterior to the prostate and midway between the ureteric orifices was a little prominent tumor with a roughened surface somewhat encrusted with lime salts. This was seized with a pair of cutting forceps and easily removed. Examination of this tumor by Dr. W. F. Whitney showed it to be a little myoma with an ulcerated granulating surface.

Since that operation, done two years ago, there has been no return of stone symptoms and the patient has now gone to the Arctic regions in command of a whaling ship.

This case was a striking one because the stone formed in an acid urine and in a bladder that emptied itself at each urination. These facts forced us quickly to the belief that some local condition was responsible.

In many cases of enlarged prostate we have a similiar condition of ulceration on projecting outgrowths. I find among my cases five in which such a condition was demonstrated either by operation or autopsy. Doubtless other cases of recurrence were due to a like cause but were finally overcome by keeping the urine acid and by irrigation with solutions of nitrate of silver and nitric acid to favor healing of the ulcerated patches.

It has frequently been urged by advocates of cutting operations that recurrence of stone is especially prone to occur after litholapaxy owing to incompleteness in the operation. My experience does not coincide with this view; for the cases of recurrence after litholapaxy have, with one or two exceptions, been shown to be due to a general diathesis or to the local conditions described above. The suprapubic operation, too, is far from being exempt from the opprobrium of failure to prevent recurrence of calculous formation. I have seen three instances of stone recurrence after suprapubic removal. One patient had an experience which was interesting in this connection. He had a stone removed suprapubically in 1892. He had a second stone removed by suprapubic incision in 1895. In 1896 he had a stone removed by litholapaxy and after that he had small stones removed by Chismore's evacuating lithotrite without anesthesia about once in three months. He finally consented to have the bladder opened a third time for the removal of the third lobe, which was believed to be ulcerated. The condition suspected was found and removed. This case has been reported at length elsewhere and only so much of it is repeated as has a bearing upon the question of stone formation.

The conclusion that I would draw from the study of these cases of recurrence is that the constant reappearance of a phosphatic stone in the bladder usually indicates the existence of some local cause which should be sought and removed.

The suprapubic route affords the best opportunity for inspection and for the operative treatment of any condition found. When that condition is an ulcerating projection from the prostate it should be thoroughly removed and the lower edge of the urethral opening should be so cut down as to bring it well to the floor of the bladder.

RATE AND CAUSES OF MORTALITY. CHOICE OF OPERATION.

It is also of interest to study in these cases the rate of mortality and the conditions under which death occurred. Comparative rates of mortality, however, cannot be judged, as the number of cases in which a cutting operation was done is small and the cases selected for lithotomy were, in several instances, in a serious condition, owing to prostatic obstruction and advanced inflammatory conditions of the bladder and kidneys. The operation, too, was often not a simple cystotomy but included the removal of a portion of the prostate or the difficult extraction of an encysted calculus from its pocket.

The patients were as a rule old. The average age of those upon whom litholapaxy was done was sixty years and a month. This is calculated from ninety cases in which the age is recorded. My recollection of the cases in which the age was not recorded enables me to say with confidence that they would not have materially altered the average age above obtained.

The average age of those subjected to suprapubic cystotomy was a little over sixty-two years.

Two of the four deaths after litholapaxy were due to pneumonia consequent upon a chronic bronchitis that existed at the time of operation. These patients were feeble men, one sixty, the other sixty-nine years of age. The third patient was seventy-one years of age and had complete obstruction in the prostate, and the urine was suppressed, so that the contents of the bladder at the operation consisted almost wholly of stringy mucus, and he never secreted any urine after that time.

The fourth case was that of a woman sixty-two years of age. A hard stone weighing a little over an ounce was removed by litholapaxy and at the same time some glands in the neck, which were extensively tuberculous, were curetted. The patient did very well for a time. The temperature fell to normal and recovery seemed assured, when she gradually began to fail and died six weeks after operation, death being due rather to the tuberculosis than to the operation.

Not one of these deaths can be directly ascribed to the operation. But even if they are all counted as deaths from litholapaxy the rate of mortality would be a little less than three and one-half per cent., which is very low considering the advanced age of the patients.

Certainly this experience justifies the feeling that litholapaxy is the operation of choice which can be offered to these patients as comparatively devoid of risk.

The suprapubic operation would then be reserved for those patients in whose bladders other conditions (foreign body, sacculated stone, ulcerating projections) exist which require an opening into the bladder for their proper treatment.

Of the four deaths after suprapubic cystotomy two occurred in old men of seventy-two and seventy-seven years, in whom a great diminution of urine existed at the time of operation and a progressive cessation of this function steadily progressed till the time of death.

One old man of seventy-two with an abundant urine of 1.005 specific gravity was operated by suprapubic section on account of sudden profuse hematuria. A very small stone was found and the bleeding was wholly stopped, but although the wound did extremely well he presently became mildly delirious and died uremic.

The last case was that of a man of sixty-one who had a sacculated bladder, two diverticula of which contained stones. These diverticula were on each side close to the ureteric orifices and so placed that the stones pressed upon the ureters and occluded them. One of these stones, which projected into the cavity of the bladder, was found and removed. The other one, which lay at the bottom of the deep, narrow pocket with a very minute opening into the bladder, was not found. This patient lived about a month after the operation and slowly died of suppression of urine due to pyelo-nephritis.

The death after median lithotomy was in the case of a very feeble man who had been leading a very exhausting life as a missionary in a hot climate and who, on his voyage home, had a small stone become wedged in his prostatic urethra leading to great and constant tenesmus and much inflammation at the neck of the bladder. The operation really consisted rather in a prostatomy than a cystotomy, and the patient slowly died of septic conditions in the wound, probably started by the inflammatory conditions which existed before the operation.

All of these deaths after cystotomy were in bad subjects and might, in almost every case, be said to have occurred in spite of the operation rather than in consequence of it. Still it is my feeling that two or perhaps three of these patients might have survived a litholapaxy had that operation been possible.

Some years ago I expressed the opinion that litholapaxy should be the operation of choice in the treatment of stone in the bladder and that a cutting operation should be resorted to only under special conditions, then enumerated, which made the crushing operation impossible or especially difficult and dangerous. My added experience of about one hundred cases confirms me in my feeling that litholapaxy is much the safest operation for the removal of stone and that it is usually competent to work a complete cure.

In cases where it fails of cure a further search for the cause of repeated stone formation should be made — by suprapubic cystotomy when necessary. If before operation we have good evidence that a local condition exists which favors calcareous deposits this may be a sufficient reason for selecting a suprapubic operation at the outset. Certainly in a case of aggravated prostatic obstruction demanding relief from that condition a suprapubic operation is demanded, and the coincident presence of a stone, while aggravating the symptoms and increasing the need of relief, does not in any way affect our choice of operation, which is directed at the more important and fundamental condition.

Clinical Department.

COMPLETE TORSION OF THE WHOLE OF THE SMALL INTESTINE.

BY JOHN HOMANS, M.D.,
Visiting Surgeon, Massachusetts General Hospital.

The records of all cases of intestinal obstruction are instructive, because the diagnosis is difficult and the effects of the disease sudden and alarming. The extreme rarity of the case narrated below warrants the writer in putting it on record.

A complete torsion of the small intestine is as hard, or harder, to explain than one of an ovarian or uterine tumor. We meet with, not uncommonly, twists of loops of intestine as causes of obstruction, but a complete twist of the whole small intestine on its mesentery as an axis was something unknown to me up to the time of the case to be described, and I have only heard of one similar case since.

Agnes D., age seven, had measles in January, 1893, and had suffered from bronchitis ever since, that is, for three months. On March 24th she came home from playing complaining of pain in her stomach. Her bowels did not move and she ate no supper. On the 25th she swallowed a little cocoa for breakfast and seemed pretty well, but in the afternoon again complained of severe pain in her stomach. She was given Castoria. She vomited during the afternoon and evening. On the 26th she vomited again, and kept her bed. Dr. F. B. Harrington saw her and found considerable distention, tympanites and tenderness at the epigastrium; he sent her to the hospital.

On entrance she was weak and cyanotic. Her abdomen was markedly distended, tympanitic in the centre and flat in the flanks. A band was apparently felt in the left inguinal region, irregular in shape. By rectum, a hard mass was felt filling the posterior cul-de-sac. There was evidently ascitic fluid causing the dulness.

The diagnosis was acute intestinal obstruction, probably intussusception. Operation March 29th. Incision at first two and a half inches long in the linea alba. A little dark-colored fluid escaped when the peritoneum was opened. The small intestines protruded, much distended and of a dark purple color. On pulling them out there was seen at one point a diverticulum about one and a half inches long and a quarter of an inch in diameter at the base, and of a sickle shape.

At the base of the diverticulum and extending round the bowel was a constriction, gray in color, as if the bowel were being cut through by a sharp ligature. On further exploration the entire small intestine was found twisted at its mesenteric root from right to left, and this accounted for the color of the bowel and for the ascites. I lifted up and untwisted the intestines, and the sharp edge of the twisted portion flattened out as the twist was unwound. The mesenteric glands were everywhere much enlarged. The intestine was aspirated in order to make its return to the abdomen possible. Considerable gas and fluid feces were withdrawn. The bowels were returned with much difficulty, the incision in the parietes was closed with silkworm-gut sutures and a glass drainage-tube was put in.

After being placed in bed the temperature was 101.8°, pulse 148, respiration 20. She vomited at intervals and died on the 20th, about twenty-four hours after the operation.

Autopsy by Dr. W. F. Whitney. Abdomen alone examined. Intestines all glued together by soft flakes of lymph and pus but no free fluid in cavity. Intestines more or less discolored from ileum to jejunum, and in one place the peritoneum had been torn off and beneath this spot the intestine was slightly gangrenous. About three feet above the ileo-cecal valve was a small diverticulum, and near this a circular necrosed patch of mucous membrane. A little above this was another circular necrotic patch. In the other organs nothing abnormal was found.

DIAGNOSIS.

Acute peritonitis. Necrosis of intestines probably resulting from a twist.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES W. TOWNSEND, M.D., BOSTON.

CARDIAC DISEASE AND PREGNANCY.

J. Looff[1] would interrupt pregnancy in cardiac disease only when the compensation is disturbed. In other cases by careful diet, rest and the use of cardiac tonics in appropriate instances, the patient will go through pregnancy and labor in a satisfactory manner. In mitral disease the heart is most apt to fail during the second stage. In aortic disease the dangerous period is just after delivery, when the circulatory conditions have been altered. It is necessary, therefore, to give cardiac stimulants at this time and closely watch the action of the heart.

CLINICAL REPORT OF THE ROTUNDA LYING-IN HOSPITAL FOR THREE YEARS, FROM OCTOBER 1, 1893, TO OCTOBER 31, 1896.[2]

The master, Wm. J. Longly, and his assistants, H. Wilson and H. Jellett, present an interesting report of this famous hospital, where 4,006 cases of midwifery occurred during the three years, and 6,273 other cases were delivered at their homes, or a total of 10,279 cases.

Of the 4,006 patients delivered in the hospital, 14 died, or 0.374 per cent.; only one death occurred in the last year. Six of these deaths were due to septicemia, six to kidney disease, one to hyperemesis and one to aortic valvular disease when three months pregnant.

There were 20 cases of *prolapse of the funis.* Eight children were still-born, in three of whom the cord was pulseless when discovered, and one of these children was macerated. All the mothers recovered.

There were 134 *abortions*, with two deaths. The preventive treatment of abortion was limited to rest in bed, hydrastis canadensis for hemorrhage, and opium for pain. When hemorrhage was severe, it was found, with one exception, that the os was sufficiently dilated to remove the ovum. The plug was never employed where any portion of the ovum had escaped; in such cases, after waiting half an hour, if the remainder was not expelled spontaneously it was removed. In 11 the finger was introduced to detach portions of the ovum, and 50 were curetted.

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[1] Cincinnati Lancet-Clinic, June 29, 1898.

[2] Dublin Journal of Medical Sciences, April and May, 1898.

Of three cases of *hyperemesis*, all of which terminated fatally, in two, large white kidneys were found, in the other the organs were healthy. Labor had been successfully induced in this case.

There were four cases of *brow* presentation: two terminated as such, one was changed into a face, and the fourth was converted into a vertex.

The *breech* and *lower extremities* presented 125 times: forty-one children were still-born, 12 of these being macerated. Only once were forceps used to the after-coming head.

There were 45 twin births and one case of triplets. There were 31 cases of *placenta previa* with the remarkable result of the recovery of all the mothers; 22 of the children, however, were born dead. In four cases no treatment was required; in five, rupture of the membranes was sufficient; in 20 a foot was brought down and delivery left to the natural efforts. In order to bring down the foot in 18 of these cases, version was necessary — in two external, in two internal; and in 14 bipolar version was performed. One case was delivered with forceps.

There were 20 cases of *accidental hemorrhage*, eight of which were severe. In 12 cases nothing was required to check the hemorrhage beyond a hot douche and rupture of the membranes. In four the vagina was plugged, in three version was performed, and one was delivered with forceps. All recovered.

There were 49 cases of *post-partum hemorrhage*, 28 of which were moderate and 21 severe; 41 were due to uterine inertia, seven to laceration of the soft parts and one to a combination of both causes. Of the atonic cases, 10 were controlled by external manipulation and ergot, six by the hot douche; in 24 the hand was introduced to remove the placenta, membranes, or clots; three were plugged, including a case of uterine inertia with a deep cervical laceration; two were infused with saline solution.

Rupture of the uterus occurred in one case, the laceration being in the lower uterine segment and cervix. The placenta, having escaped through the rent, was removed by the hand from the abdominal cavity; a strip of iodoform gauze was passed through the tear and left there two days. The next evening the temperature fell to normal from 101° and continued so until the patient's discharge well two weeks later.

There was one *ovarian tumor* and seven *myomata*; and, in one of the latter, the child was successfully removed by Cæsarean section together with the tumor.

Of *deformed pelvis* there were 21 cases, two of whom delivered themselves; one in which the child, presented with breech, required manual assistance; four were extracted with forceps, once the instrument was applied before the head had passed the brim, and three times for secondary inertia after it had entered the pelvis; nine were delivered after induction of premature labor; three by craniotomy, one by symphyseotomy and one by Cæsarean section. Two mothers and seven children died.

The *forceps* were used in 117 cases, or once in 34 deliveries.

Version was performed 42 times: 12 times for shoulder presentation, 18 times for placenta previa, twice for accidental hemorrhage, twice for pelvic deformity and eight times for prolapse of funis.

There were nine cases of *eclampsia*. Three of the mothers and four of the children died; two of them died undelivered. The treatment consisted in these cases in milk diet and large doses of morphine subcutaneously, labor being left to itself, except in one case where forceps were used.

EARLY PREGNANCY AND LABOR.[3]

Dr Simon Marx[3] reports a case of a girl, fourteen years and six months old, whom he delivered with forceps of her first child at full term, after an inefficient labor of forty-eight hours, with eclampsia. The patient was but a child with undeveloped mammæ, mons veneris devoid of hair, and the pelvic contour typically infantile. The infant weighed less than six pounds.

INCARCERATED RETROFLEXED PREGNANT UTERUS WITH ENORMOUSLY DISTENDED BLADDER.[4]

William Simpson[4] reports a curious case of this difficulty where the retention of urine was apparently the cause of the retroflexion of the uterus. A single woman, thirty-two years of age, complained of great pain in the abdomen, which was much distended. She had had trouble with micturition for two weeks and for three days had been unable to pass urine, only a very small quantity having escaped voluntarily. She was found to be three months pregnant, with a retroflexed uterus, and from the bladder 196 ounces of urine were withdrawn. On the next day the patient passed 43 ounces of urine naturally and 77 ounces were drawn off by the catheter. The uterus returned to normal position; after this micturition occurred normally.

THE LITHOTOMY POSITION DURING PARTURITION.

Oscar Schmidt[5] recommends this position when the fetal head is in the canal or at the outlet. With the patient lying on her back, the physician and nurse, as soon as the pain begins, each grasp a leg, flex the knees strongly and press them as far as possible upon the abdomen, at the same time keeping the limbs rotated outward and abducted. The labor is said to be finished more rapidly and with less exertion on the part of the patient. The reasons for this are twofold: first, increased abdominal pressure, and second, the widening of the pelvic outlet owing to the mobility of the sacro-iliac synchondroses, which is increased in pregnancy. This position, however, diminishes the conjugate of the inlet of the pelvis, which is increased in Welcher's position with slightly hyper-extended thighs, the legs hanging over the edge of the bed.

PLACENTA PREVIA.

Robert Jardine[6] tabulates fifty-one cases of placenta previa, all but two of which were private cases occurring at the Glasgow Maternity Hospital in the last sixteen years. Twelve of the cases were complete central placenta previa and 39 lateral. Of the former two mothers died and 10 were saved, while of the children five were born alive (one case being twins) and eight dead. Of the lateral, three mothers died and 36 were saved, while of the children 15 were alive and 24 dead. The total number of mothers lost was five, or slightly under ten per cent., of children 32, about 61 per cent. At least two of the children were macerated, while several were too premature to live. The presentations were as follows: Cranial, 43; transverse, 3; breech, 2; hand, 1; leg and arm, 1; elbow, 1. The treatment adopted was: Podalic version, 36; bipolar version, 3; forceps, 4; traction on breech, 2; and six were born by natural efforts. The tampon was used nine times, but in many of these cases it was used more as a safeguard to prevent hemorrhage while removing the patient to hospital than as a dilator. Barnes's bags were used nine times; manual dilatation was the principal method, combined with separation of the placenta when necessary. In a few cases rupture of the membranes was all that was required. Post-partum hemorrhage occurred in six, one being secondary, on the twelfth, thirteenth and fourteenth days. The vast majority of the patients were multiparæ, but six of them were primiparæ. The youngest of them was nineteen, while the remaining five were what might be called elderly primiparæ, aged 28, 28, 30, 34 and 35 years. The youngest multipara was 19 (ii-para) and the oldest 45 (xiv-para). One had had placenta previa once before, and another twice. The latter had also cardiac disease.

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[3] American Gynecological and Obstetrical Journal, January, 1898, p. 98.

[4] Lancet, May 21, 1898, p. 1396.

[5] Centralb. f. Gyn., November 27, 1897.

[6] Glasgow Medical Journal, January, 1898, p. 11.

CONCEALED ACCIDENTAL HEMORRHAGE.

Robert Jardine[7] reports four severe cases of this affection that he had seen in the Glasgow Maternity Hospital within a year — two of these died. All of the children were premature, two were born dead, one lived a week only, the other was saved.

As to etiology, the writer has found the placenta always more or less degenerated, an endometritis probably being present. A perfectly normal placenta might become detached as the result of a severe accident, but this is exceptional.

Diagnosis. — The external variety may be mistaken for placenta previa. If the os is not dilated this difficulty is very great, but usually the os will admit of the placenta being felt in placenta previa. A boggy feeling in the fornices will also indicate the latter affection. The concealed variety can usually be easily diagnosticated by the collapsed condition of the patient, the great distention of the uterus, and the nature of the pain she complains of. Rupture of the uterus gives somewhat the same collapsed condition, but it occurs as a rule in the second stage of labor.

Treatment. — The writer does not agree with those who advocate plugging the vagina in external hemorrhage. In one of his cases this was adopted and the hemorrhage was converted into an internal, concealed one and proved fatal. When active hemorrhage is going on he believes the only thing to be done is to empty the uterus. If the bleeding has ceased and the patient is not collapsed, he advocates waiting and watching. If she is much collapsed she should be stimulated before delivery, as the shock of delivery may prove fatal even without any post partum bleeding. In internal concealed hemorrhage he has found the results of *accouchement forcé* far from encouraging. Rupturing the membrane has been recommended by some, but the escape of the liquor amnii would only make more room for hemorrhage, as the uterus would not be able to contract. Porro's operation has been done with success and seems rational; he would recommend before a Porro or *accouchement forcé* the transfusion of a pint or two of saline fluid, repeated if necessary afterwards.

THE CHANGES IN THE UTERINE MUCOSA DURING PREGNANCY AND IN THE ATTACHED FETAL STRUCTURES.

J. C. Webster[8] in an elaborate article, for which he received the first Research Prize of the Royal College of Physicians of Edinburgh, shows that in the early months of pregnancy when a complete abortion occurs not associated with any inflammatory changes in the uterus, the plane of separation of the ovum is mainly through the compact layer of the serotina and vera in its middle or outer layer; in certain parts the whole compact layer and bits of the spongy portion may be shed.

In later months, when a complete miscarriage occurs, the separation plane is, also, mainly through the compact layer, only here and there are the whole layer or parts of the spongy portion removed. In the late months of pregnancy and at full term, the plane of separation is, also, mainly through the compact layer; but owing to the thinness of this layer, it happens more often than in early months that separation takes place as well through the junction of compact and spongy layers, as through the outer part of the latter. The thickness of that part of the compact layer found on the removed placenta varies somewhat, because in the preparturient condition considerable variations are found in the degree of development of the whole compact as well as of the spongy layer.

The body of the uterus, after complete delivery of the ovum, has still attached to its inner surface the main thickness of the decidual tissue which was present before labor began, though it is completely rearranged owing to uterine retraction and contraction. His observations, then, tend to confirm the statement of Friedländer, who, many years ago, stated that the plane of separation was usually found in the compact layer. The credit of having first described the post-partum uterus as being lined by a layer of decidua probably belongs to William Hunter. Cruveilhier, Heschl and others wrongly taught that the entire muscular wall was laid bare. The writer has shown this takes place, in normal cases, only to a very limited extent.

THE TREATMENT OF ASPHYXIA NEONATORUM BY THE HYPODERMATIC INJECTION OF STRYCHNIA.

Henry D. Fry[9] states that the average annual still-births in the District of Columbia are 500, an infantile mortality of about nine per cent. He recognizes three classes of asphyxia:

First, those due to maternal disease, as syphilis, nephritis, arterio-sclerosis, and acute intercurrent diseases of pregnancy.

Second, intrauterine asphyxia, as from coiling or twisting of the cord around the fetus; short cord, premature separation of a portion of the placenta, whether previa or normally implanted, direct violence, and ergotism.

Third, asphyxia occurring during labor, from prolapsed or twisted cord; from compression of the fetal head by the forceps or pelvic walls; breech presentations, and tetanoid contraction of the uterus.

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[7] Glasgow Medical Journal, January 1898, p. 21.

[8] American Gynecological and Obstetrical Journal, November and December, 1897.

[9] American Journal of Obstetrics, April 1898, p. 470.

The writer outlines the various methods to be used in the treatment of asphyxia and emphasizes the point that cases of pallid asphyxia should be treated as if they were in a condition of shock, which he says is the case. Rough measures will only extinguish the spark of life.

The indications are, first, to apply external heat; this is best done by immersion in water at a temperature of 100° F. Second, stimulate the respiratory centre, the flagging circulation, the paralyzed muscular system, and abolished reflexes. For this he believed there is nothing so valuable as hypodermic injections of strychnia in doses of one two-hundredth grain. Its use for such purpose was suggested to the writer's mind eighteen months ago, and the result has more than met his expectations.

After the administration of the strychnia accessory methods of treatment may be employed. Artificial respiration may be carried on while the child is in the hot bath. Sylvester's or Drew's method answers best under those circumstances. Jacobi has advised the rectal injection of hot water, and Grandin of hot normal salt solution. The latter might be given more effectively by injection into the subcutaneous tissue or directly into the vein.

DELIVERY THREE YEARS AFTER SYMPHYSEOTOMY.

Hausen[10] reports a case showing that the increased pelvic diameters after symphyseotomy may remain permanent. A woman, thirty-six years old, gave the following history: First labor, instrumental, still-born child. Second labor, ineffectual, symphyseotomy, separation of symphysis six centimetres, forceps delivery. Good recovery, the patient returning to work. Three years later version was performed at full term, the child being in transverse position. This was followed by the spontaneous expulsion of the child. During delivery of the child the symphysis separated to the extent of three centimetres, thus largely increasing the diameters of the pelvis. This delivery also left no bad after-results.

ECLAMPSIA.

Edward P. Davis[11] calls attention to some points regarding eclampsia after relating two cases of the same. It seems clearly demonstrated, he says, that toxins of unknown composition cause eclampsia. These bodies are not found in the urine of eclamptic patients during eclampsia, nor are they found in great quantities in any urine. If they were present in the urine the patient would not have eclampsia. The percentage of urea is, however, of value as a clinical index of the amount of waste successfully excreted. When this is reasonably high the patient is not forming from it within her body poisonous compounds. That eclampsia can be prevented by regulating the diet of the pregnant woman and stimulating her excretions is a fact too familiar to require comment. An eclamptic patient can be made to excrete by the use of the hot pack, and saline injections into the skin and bowel. Such treatment, if faithfully carried out, may save the patient from eclampsia; but if her tissues have been seriously damaged by the poison, she may recover from convulsions only to die from pulmonary gangrene or failure of the nervous centres. In these cases veratrum viride seems of decided service.

As regards prognosis, the youth of the patient, her freedom from alcoholism, gout or previous kidney failure are important factors. With an eclamptic patient each half hour that passes without vigorous treatment is greatly to her disadvantage.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR meeting, Monday, May 16, 1898, the
DR. J. C. WARREN read a paper on
President, DR. R. H. FITZ, in the chair.

THE SURGERY OF GASTRIC ULCER, WITH REPORT OF A CASE OF GASTROLYSIS.[1]

DR. BEACH: I am wholly in sympathy with Dr. Warren in all that he has said relative to stomach surgery. His simile of the distended bladder from prostatic obstruction is especially apt and appeals strongly to the surgical instinct. In the application of surgical measures to ulcer of the stomach, the five conditions demanding consideration are:

(1) Pain; (2) Hemorrhage; (3) Exhaustion; (4) Cicatricial contraction; (5) Malignant disease succeeding chronic ulcer.

The medical treatment of chronic ulcer has met with marked success in a large percentage of cases and supplies a strong argument against operative interference. On the other hand, we are all familiar with a group of exceptions that in spite of such treatment drift on to the shoal where surgery can only exhaust the little strength and vitality remaining to the sufferer.

The practical difficulty is to know when to interrupt medical treatment without sacrificing its advantages. As Dr. Warren suggests, this must be determined by the necessities of the individual case and not by the application of any general law.

The fighting-ground of the surgeon is clearly defined by the cases that are to die of perforation or hemorrhage. The proportion of the former, three and one-half per cent., and of the latter 13 per cent., averaging together 17 per cent. or more, require a recognition of their fatal tendency before the steady failure of power and the persistence of exhaustive symptoms have depleted the patient beyond the point where surgery can afford relief.

Close observation and rare judgment must be exercised in the determination of that point for the symptoms may fail to indicate in some cases the extent of disease.

In my own experience I remember a patient who entered the hospital without a symptom referable to the stomach. He died soon after admission and before a complete investigation had been made of his case. The autopsy disclosed a large ulcer opening from the greater curvature of the stomach into the large intestine and protected by adhesions between the organs.

The justification for surgical interference rests on the persistence of symptoms after all efforts for relief have failed.

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[10] Rev. Mens. des Mal de l'Enf., February, 1898.

[11] American Journal of Obstetrics, April, 1898, p. 476.

[1] See page 308 of the Journal.

The early breaking-down of adhesions and the union of wounds after stomach operations subjects the patient to the most disastrous consequences. Too much stress, therefore, cannot be made upon the importance of avoiding prolonged starvation. Rectal feeding rarely takes the whole place of stomach feeding. For those who must depend upon its help *after* operations, it is prudent not to wear out the tolerance of the intestine to injections, or the power of assimilation *before* operation. In stenosis of the pylorus, where little or no food passes into the intestine and its accumulation in the stomach must be relieved by lavage, rapid depletion by starvation again may, if prolonged, equal excessive hemorrhage in robbing the patient of reparative power. Though a carefully conducted exploration in anticipation of a perforation is really a conservative measure, we cannot forget that another reason for prompt action is that before perforation has made the way clear to the seat of disease, so much manipulation may be requisite as to compel a large demand upon the patient's strength and endurance. Loretta's operation seems to be fairly displaced by that of pyloroplasty. The advantage afforded by the latter for inspection of the parts, freedom from recurrence of stricture, from concealed hemorrhage, and the slough which may follow a divulsion of the pylorus, commend it strongly while the earlier operation may be still retained for stenosis of the cardiac opening of the stomach until replaced by some better method.

The relief to be obtained from the careful dissection of adhesions and cicatricial bands is a subject that received discussion in this Society about one year ago in connection with gall-bladder surgery. Such adhesions to adjoining parts are not unusual as we know in all abdominal surgery, but in the region that has the gall-bladder for a centre they are especially troublesome in the production of pain and discomfort. It is astonishing to know what permanent relief may follow such dissections when the same conditions that originally caused the symptoms appear to be left, that is, the apposition of inflamed surfaces.

I have expected to find in some case the pylorus drawn down by adhesions so as to kink that end of the stomach and produce obstruction, but so far it has not occurred in my work. I have dissected adhesions extending toward the stomach from the gall-bladder toward the anterior abdominal wall deeply in the direction of the pancreas with satisfactory results.

Dr. Cutler: I have been very much interested in hearing Dr. Warren's paper and he has left absolutely nothing to be said as far as the indications are concerned for operation in these cases. I should like to say a word about the statistics of Leube he speaks of. Leube is exceptionally situated to form statistics. In the first place, he has an admirable clinic, has assistants trained for a long time in this sort of work, and I think his statistics would be better than those from the general hospitals such as ours, or from the general practice of most people about here.

As far as the operations for gastric ulcer are concerned it has been seriously proposed by one surgeon that instead of the medical treatment of gastric ulcer the operation of excision should always be done because the disease was thereby curtailed, shortened up. Of course nobody here would think of being so radical in procedure as that, but in cases of inveterate ulcer which run on and on, and which are not amenable to ordinary medical treatment they certainly present a very favorable opportunity for the surgeon to do a great deal of good. I never happen to have had any cases myself which would consent to operation, but I have had some I thought needed it. There was done in the hospital two years ago, I think it was, for a case of hemorrhage which was persistent and which would not yield to treatment, an operation of resection by Dr. Elliot. I think that is one of the cases which is spoken of in Dr. Warren's table; it is the one perhaps that lived the longest. I was under the impression he lived as long as ten days. I had a case within a day or two where the symptom was hemorrhage and the man had so little to say about his previous condition, one of indigestion and disability from gastric troubles, that we hesitated as to an operation and finally, when it was thought it might be advisable, he was so far gone that operation was not to be thought of. A single case, I think I had, which was operated on by Dr. Maurice Richardson for dilatation following cicatricial contraction a number of years ago, I do not see included in that list. It may be the first one who died fifteen days after the operation from pneumonia. Another thing which occurs to me is the treatment by diet after operation, which should resemble the treatment of the original ulcer; instead of seeing how soon the patient can take house-diet he ought to be put on a restricted diet just as if he were originally coming under the treatment for gastric ulcer.

I have had one case of perigastritis operated on at the Massachusetts General Hospital. I don't see it spoken of in the table. The man is still living or was a little while ago, and his symptoms were quite like what Dr. Warren has mentioned. The diagnosis made by me was adhesions which were due to another cause and not from gastric ulcer. The cause of the trouble was not diagnosticated but operation gave relief.

The difficulty of making a diagnosis of existent ulcer sometimes is considerable. Last September a person came into the hospital with the diagnosis made by a gentleman outside of gastric ulcer and entered the hospital in my service. I agreed to the diagnosis. She was seen by several others and shown at two or three clinics, and everybody accepted the diagnosis of gastric ulcer. The history was complete. The woman was uneducated and gave a history, not one which she was led into apparently by leading questions, of gastric ulcer, and her friends confirmed it. We thought the diagnosis was clear. The post-mortem I think was made in Dr. Wright's absence. It was clear she did not have anything the matter with the stomach or duodenum. The record says here: "We got ready to perform the operation on her of laparotomy for the excision of a possible gastric ulcer." But it says in the autopsy record: "In the mucous membrane along the lesser curvature were several small areas of ecchymoses. The organ was otherwise not remarkable." I suppose those were the little so called gastric erosions which sometimes give rise to a certain amount of bleeding, but nothing compared to what this woman was said to have vomited. I never saw any vomiting of blood in this case. This was the history given by the attending physicians and by the sister of the patient: "Three days before she entered the hospital while unwell she reached up to fix a curtain and had pain in the stomach and lay down. After a while she got up and while at the table became nauseated and obliged to leave the table. She vomited a dark brown fluid like coffee-grounds and after that became very pale and very weak, and then two days afterwards she had another spell of vomiting which was said to be as much as would fill a chamber-pot and was dark brown and contained blood, the doctor said." The stools since she entered the hospital were dark brown and tarry. She had no further hemorrhage while she was here, but continued to get more anemic and an examination of blood showed, as we thought, she was losing every day, so that we concluded we would get ready for an operation, but the patient died and at the post-mortem examination there was nothing found except these numbers of erosions in the stomach. There was nothing in the intestines except a very few small areas of ecchymoses in the mucosa of the duodenum.

I had a case a few days ago where the woman came in with the history of having had for a number of months a good deal of disturbance in her digestion. She said she had always had trouble with the stomach from her childhood. Since she came to Boston two and a half years ago she had had relatively little until about eight months ago when she began to have burning pain, sour eructations and vomiting after eating. A month ago she vomited a pint of bright red blood, says she has vomited some blood about every day since then, sometimes a teaspoonful, sometimes a glassful, yesterday about two teaspoonfuls of blood. The pain, sour eructations and distress have continued and come immediately after eating. The pain radiates from the right shoulder and there is tenderness in the epigastrium not localized over a small area and rather more to the right than in the median line. We also found some tender places behind, I think in the region of the ninth vertebra. She kept losing blood in this way every little while and it seemed as if the diagnosis was clear. I wanted to have her operated on, but she did not want to have the operation performed, and a few days afterwards the patient died and we found there was no ulcer at all. There was, however, a gastroenteritis and there were a few superficial erosions such as were seen in the other case. Where the large amount of blood came from I am unable to say. Those are the two cases in which there was nothing more than an erosion.

Here is a case which came in a few days ago, a man saying that he had the following history: Five weeks ago for the first time he began to have pain low down below the umbilicus and in front of the abdomen. The pain was steady day and night and it was so severe at times as to lay him up. This gradually grew more severe until two or three days ago. About three weeks ago he began to vomit within five to ten minutes after meals on the average twice a day, usually a small amount, about two or three mouthfuls, and not very sour. The better part of three days he has been constipated. He was found by the police unconscious, in a fainting spell, about noon the day he was brought to the hospital. Soon after he arrived at the hospital he vomited about a coffee-cupful of bright red blood slightly clotted without admixture of food. That was all the history we got. I examined him with great care. He looked anemic and he was not tender at all either in front or back. He was given an enema to wash out his intestine and we found a considerable amount of blood there, and the diagnosis was thought to be likely of an ulcer low down in the stomach or in the upper part of the duodenum. He was to have been seen by the surgeon, but somehow or other he was not, and twenty-four or thirty-six hours afterwards, when he was seen, he was moribund, so that no operation was done. After the death of the individual we found out from his sister a thing we had not been able to find out before, that he had had symptoms which were suggestive of duodenal ulcer. He had a great deal of gastric trouble ever since last summer. Often at that time he had severe pain which would double him up and give rise to attacks of vomiting. He could not seem to keep anything down, even tea. The vomiting occurred very soon after taking food or drink, but she insisted that he never vomited anything like blood.

I have here the stomach which was removed to-day by post-mortem examination. It shows very well the ulcer of the duodenum.

It is a very difficult thing in some cases, at least in my experience, to make a decision as to when it is desirable to operate on a case, and it is very easy to throw a man off his balance. In the few cases that have been operated on for me the diagnosis was pretty nearly correct except one. I saw one case at the City Hospital which Dr. Folsom also saw, where he, I believe with others, thought it was a case of gastric ulcer; an operation was done and nothing of the sort found. The woman had been hysterical and had read up the history of gastric ulcer, and knew it quite as well as any of us, and she gave a history of profuse vomiting containing blood and vomiting immediately after meals and pains and distress, — all the symptoms of gastric ulcer. The house-officers even had seen a considerable amount of blood, and acting on that an operation was performed and no gastric ulcer found. The symptoms, however, were relieved by the operation. Her dyspepsia was entirely cured and so was her vomiting. She went out quite happy.

Dr. F. Cobb: In connection with a study of general peritonitis I collected 44 cases of perforation of gastric ulcer operated upon up to 1895 with 10 recoveries; since 1895 I have collected 99 cases with 50 recoveries. Of the total number of cases operated on for gastric perforation, 78 per cent. of those operated on within twelve hours recovered.

With regard to the cases Dr. Cutler speaks of where profuse hemorrhage occurred and no perforation was found, Dr. Weir, of New York, and Dr. Abbe have operated and found the condition Dr. Cutler described, minute erosions and ecchymoses.

Dr. Fitz: There is one point I should like to speak of, but not with reference to urging or opposing operation in cases of gastric ulcer when the indications for the former are satisfactory; we must not be too hopeful as to the results. Undoubtedly the operation is generally successful, as is indicated in the statistics, but we are equally, if not more concerned, with the case afterwards. The best statistics show about 72 per cent. of recoveries, and yet, under medical treatment, as we learn from Dr. Warren's evidence, a large percentage of the recovered cases soon die leaving only 48 per cent. of cures. Of what happens to the cases of recovery after surgical treatment we are ignorant. I have in mind also a case which illustrates some of the points with reference to what Dr. Warren has brought out concerning the relation of gastric adhesions to ulcer of the stomach. Within the past year Dr. M. H. Richardson and I saw a patient who complained of pains in the region of the gall-bladder. An exploratory operation was advised with reference to the possibility of adhesions. Dr. Richardson found adhesions between the transverse colon and the gall-bladder, but there was also a button-like mass of fibrous tissue projecting from the posterior wall of the stomach near the pylorus, which was regarded as the scar of a chronic ulcer. It appeared that twenty-five years previously the patient, a naval officer, while in China, suffered during a period of several months from gastralgia and vomiting which were attributable probably to an ulcer from which he subsequently had no disturbance until the adhesions became painful a short time ago.

The advantages of laparotomy for perforation were forcibly presented to me several years ago. A patient was brought to the hospital after having developed suddenly symptoms which suggested perforation of the stomach, and this diagnosis was made. She lived for eight days or more after these symptoms arose, and although an exploratory operation was urged she refused. At the post-mortem examination a large subphrenic abscess was found communicating with the stomach by an ulcerated opening through the anterior wall; the abscess was wholly circumscribed. No more favorable case for a successful operation could have been anticipated.

DR. E. P. JOSLIN: I should like to explain that one case of cancer in the ulcer list. It is perhaps the most interesting case of ulcer in the hospital for ten years. The patient entered on the medical side with the diagnosis of ulcer. After two years he returned with the diagnosis of ulcer. Six months later he returned and died and it was found that cancer had developed on the ulcer.

DR. WARREN: In regard to the cases of erosions Dr. Cutler reported I have noticed quite a number of cases in literature in which severe and fatal hemorrhages have occurred and nothing found but minute erosions. It seems difficult to meet such a condition. If the erosions are in the pyloric portion of the stomach we might give rest to that part of the stomach by gastro-enterostomy. That is the operation I should perform I think if I found dilated stomach with undoubted hemorrhage. I should endeavor to give rest to the stomach and enable the bleeding points to heal.

DR. FITZ: I think it would be a doubtful if not dangerous procedure to open the stomach for hemorrhage suspected to be due to erosions. It is very common to find the latter at post mortem examinations without any evidence of hemorrhage during life. The cause of the fatal hemorrhage in the absence of ulcer may be varicose veins in the esophagus and the erosions, if found, may have no etiological significance.

DR. J. H. WRIGHT presented a report of a

CASE OF MYCETOMA (MADURA FOOT), WITH LANTERN SLIDES.

DR. BEACH: The surgical side of the very interesting case described by Dr. Wright becomes simple after his lucid description of the disease affecting the foot. An amputation was necessary far enough from the diseased area to secure the remaining stump from reinfection. In this instance the section was made through the metatarsus, saving the great toe. The patient now walks comfortably with the stump. The importance of early diagnosis is evident in view of the fatality of the disease by slow extension and exhaustion, and of the certainty of its eradication by surgery. Its rarity and similarity to more common affections as shown by the water-color exhibited by Dr. Wright, may easily lead to a deception of the observer in the absence of the crucial test of microscopical examination of sections and cultivation of the minute black particles described by the reader. It is the first case that ever entered the Massachusetts General Hospital to my knowledge and its appearance suggested an infiltration by tubercle actino-mycosis or some variety of sarcoma that had begun to break down. An examination by the probe of the fistulous openings failed to reach bone or the interior of the metacarpo-phalangeal joints which were included in the swelling. The examination of section for evidence of tubercle or sarcoma gave a negative result. Each time that any discharge was forced from the opening, it was observed that minute black granules like disintegrating blood-clot floated on the surface. Dr. Wright examined these particles, cultured them and made the diagnosis of "madura foot." Its early recognition has saved the greater part of the foot in good condition for use.

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TWENTY-SECOND ANNUAL MEETING OF THE AMERICAN DERMATOLOGICAL ASSOCIATION.

HELD IN PRINCETON, N. J., MAY 31 AND JUNE 1, AND IN NEW YORK CITY, JUNE 2, 1898.

(Continued from No. 12, p. 298.)

THE SO-CALLED PREMYCOSIS STAGE OF MYCOSIS FUNGOIDES — A CONTRIBUTION TO OUR PRESENT UNDERSTANDING OF THIS DISEASE.

DRS. J. N. HYDE and **F. H. MONTGOMERY**, of Chicago, presented a contribution with this title. They stated that out of 44 cases, 21 males and 11 females, the duration varied from a few months to twenty years, and the average age was forty-five years. The symptoms were quite diverse, but in 32 there was intense itching; in 28 there was erythematous redness occurring in patches, more or less defined; in six there was serous effusion; in five there was crusting. The patches were of various shades of red. The authors said that there seems to be a reasonable probability that the patient will usually be a male of forty-five or upward, that he will suffer from intense pruritus for a period of a number of years, and that he will be a large, stout person. While no positive statements seemed to be warranted, there was good reason for believing that the phenomena of the early stage represent a definite fungoid process, which should not be confounded with eczema, and that it is highly probable that histological examination of the lesions will go far towards establishing the diagnosis.

DR. FORDYCE inclined to the view that the disease was some form of granuloma, possibly complicated by infection with some micro-organism. He would hardly feel like making the diagnosis from the microscopic findings alone.

DR. DUHRING said that he had been surprised at the number of observers who spoke of a similarity of the early appearances to those of eczema, for in his own experience it had been very rare indeed for the diagnosis of eczema to even occur to him. In the cases in which he had studied the histology, he had been struck with the regularity of the cells, and the almost total absence of involvement of the epidermis. In several of the cases the mucous membrane had been undoubtedly affected. About twenty years ago he had exhibited to the Association a case in which the mouth, bladder and vagina were involved. At the autopsy, a large flat tumor, or infiltration, of the bladder was found.

Dr. White said that in a comparatively short time he had seen three cases in which the eczematous appearance was evident. In one of the cases there was a vitiliginous condition of the skin. The similarity of the earlier cutaneous manifestations to those of leprosy would seem to indicate that the two affections are allied. In none of these cases had the pruritus been very troublesome.

Dr. Gilchrist referred to a case of mycosis fungoides seen at the Johns Hopkins Hospital in which the injection of Coley's fluid had caused dangerous reaction, but no favorable result. He thought these nodules could hardly be looked upon as sarcomata; they were more probably infected granulomata.

Dr. Van Harlingen said that the early appearance was only eczemiform to the superficial observer; the appearance was rather like that seen in the early stage of Paget's disease of the nipple.

Dr. G. H. Fox said that in the majority of the eight or ten cases that he had observed there had been an appearance that might readily be mistaken for eczema, and he knew of no other cutaneous disease in which the itching is so agonizing. He had seen the vitiliginous appearance, but not in the early stage.

Dr. Sherwell said that in his experience there had been. in the later stages, an erythema followed by an eczema, associated with intense pruritus. He had very frequently seen the administration of arsenic followed by the disappearance of sarcomatous tumors.

Drs. Stelwagon and **Politzer** also spoke of the frequency of eczematous manifestations in mycosis fungoides.

Dr. P. A. Morrow referred to a case which had presented all the characteristics of a frank eczema, and had been treated for that condition for a year and a half before anything had developed to suggest the diagnosis of mycosis fungoides. He had used injections of Coley's fluid in one or two cases, and had also given the arsenical treatment a fair trial, but with no permanently beneficial results.

Dr. Hyde, in closing, adverted to the fact that in the cases summarized in the paper, the patients were robust and fleshy, and that this had been noticed by other observers.

Dr. Montgomery, in closing the discussion, said that he thought evidence was fast accumulating in support of the statement that the character of the infiltration in the early stage of mycosis fungoides presented microscopical characteristics quite apart from those of any other erythema or cutaneous disorder likely to be confounded with it. As the infiltration becomes thicker, the epithelium becomes thinner, and even before the tumor stage has been reached, the rete will be decidedly thinner than usual.

A STRANGE CASE OF GRANULOMA OF FACE AND EXTREMITIES.

Dr. F. J. Shepherd presented a brief clinical report with this title. The lesions described by him resembled those seen in rare instances after the administration of the iodides or bromides, but this patient had received no medication whatever. A careful physical examination of the lungs proved negative, as did also the examination for tubercle bacilli, and the inoculation of a guinea-pig. Moreover, the histological features were not those of tuberculosis. Dr. Shepherd said that in spite of these facts, the patient reacted to tuberculin, and in this test he had great faith, as it had rendered him good service in several obscure cases. He was inclined now to look upon the case as tuberculous.

Dr. Robinson said that too much weight should not be given to the reaction produced by tuberculin, for, he believed that it was possible in many cases of infected adenomata to obtain this reaction.

Dr. Gilchrist said that before excluding tuberculosis in such cases a portion of tissue should be removed by the curette, macerated thoroughly and forcibly, and then stained in the usual way.

Dr. White remarked that, in his experience, tuberculous lesions of the skin of any size do not so rapidly and spontaneously disappear.

LYMPHANGIOMA CIRCUMSCRIPTUM.

Dr. W. T. Corlett reported two cases under this heading, in which there was a wart-like eruption on the calf of the leg.

Drs. G. T. Elliott and **J. T. Bowen** stated that the description given in the paper, and particularly that dealing with the histological appearances, did not seem to correspond with what had been previously observed in typical cases of lymphangioma circumscriptum. Dr. Bowen thought the second case reported was much more like a linear nævus.

SECOND DAY.

GENERAL DISCUSSION ON LUPUS ERYTHEMATOSUS.

Etiology and Pathology.

Dr. A. R. Robinson took up this part of the subject. He said that it was generally agreed that a lowered condition of nutrition exists. The disease is more frequent in the country than in cities, and more frequent in cold climates. Any interference in the circulation of a part may act as a predisposing cause. The continuous existence of the lesions for many years, and the manner of their extension are inconsistent with the view that they arise from toxins formed in the digestive tract. In a number of reported cases a decided reaction with tuberculin had been observed, more marked even than in lupus vulgaris. Our present knowledge is opposed to the belief that lupus erythematosus is a local disease which may be produced by a number of agents; it is more probably a chronic infective process, with organisms at the seat of the lesion. Many authorities believe that the process begins in the blood-vessels. That the disease is connected with the sebaceous or sweat glands is not borne out by observation. Leloir states that the epidermis is only secondarily affected. Dr. Robinson said that his own observations confirm Leloir's statement that there is an infiltration of embryonic cells along the blood-vessels, and diffusely through the upper third of the derma. At first, there is no hypertrophy of the epidermis, and atrophy does not occur until later. The rete shows some vesicular degeneration in the lower row. This infiltration is not found in the papillary layer, or around the hair follicles or sebaceous glands, and there is no evidence of thrombosis. In place of the normal tissue of the part there is a well-formed reticulum. The absence of polynuclear and giant cells, and the presence of this reticulum, together with the marked staining of the cells throughout, he said, could only be the result of a local infective process. There was nothing in it resembling tuberculosis. He would, therefore, regard lupus erythematosus as a local infective granuloma, and not a local tuberculosis.

Amenability to Treatment.

Dr. J. C. White discussed this phase of the subject. He said that after forty years' experience he still held a well-nigh hopeless opinion regarding the curability of this disease. He did not believe it could be positively predicted that under the influence of any known drug a cure could be effected. If the case presents an inflammatory type, the most soothing applications should alone be used at first, and they are appropriate from time to time in any case to meet conditions of hyperemia. He derived far more benefit in the long run from such soothing applications as black wash, calomel washes, zinc oxide and zinc paste than from the stronger remedies. Where more stimulation was required, sulphur ointment, or zinc oxide and sulphur wash may be employed, or white precipitate ointment or lactic acid may be selected. Later on, iodo-glycerine and mercurials may prove beneficial. Creosote, carbolic acid, pyrogallic acid and chrysarobin are the severest remedies he used. He had seldom resorted to the use of the cautery, or of the curette. He had attempted to annihilate certain areas on the trunk by the use of fuming nitric acid, but had seen the disease recur beyond these areas.

(To be continued.)

Recent Literature.

Outlines of Practical Hygiene. By C. Gilman Currier, M.D. Third edition, revised and enlarged. New York: E. B. Treat & Co. 1898.

This volume contains all that is essential for the teaching of hygiene in the higher schools of learning; the subject-matter is well and conveniently arranged, and care has been taken to incorporate in this edition sufficient references to all modern discoveries and improvements in the progressive department of medical science of which it treats. The principal topics are the following: Soil and climate, clothing, personal hygiene, exercise, school hygiene, occupation, heating, lighting and ventilation, food and diet, water-supplies, sewerage, plumbing, garbage disposal, disposal of the dead, bacteriology, infectious diseases, disinfection.

The book may safely be used in high schools and universities as an excellent text-book.

The Street-Sweepings of Cities. — The Department of Agriculture estimates the annual loss in 354 cities from the waste of sweepings in street-cleaning at $3,000,000.

Cholera in Madras. — Cholera is reported epidemic in Madras and is steadily increasing in its prevalence. During the week ending August 19th, ninety-one deaths and about two hundred cases are reported.

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ABUSES OF THE PENSION SYSTEM.

According to the last annual report of Hon. H. Clay Evans, the amount paid out under the general pension laws is $75,275,583. This enormous sum, sufficient to maintain a large standing army, represents disabilities said to have been incurred in what we used to call "the late war," but which we must now call the Civil War. Seventeen years ago it was stated by President Garfield that the maximum of yearly pension payments had probably been attained but the number of claimants has increased rather than diminished under the stimulus of professional solicitors, lawyers and expert claim agents, and the Pension Bureau at Washington is still loaded down with claims amounting to hundreds of thousands awaiting adjudication.

Many a returned soldier who was once thought to have escaped unscathed has found after thirty or more years that the cough from which he complains originated in bronchial troubles developed in the march through the Wilderness.

Physicians in good standing are asked to make affidavit that the sickness of John Jones, suffering from cirrhosis of the liver consequent on Jones's alcoholic habits, is due to exposure to damp and cold, while camping before Vicksburg in Grant's campaign. William D—— fell a victim many years after the war to delirium tremens, but a pension is sought for his widow on the ground of "brain disease contracted from *coup de soleil* before Chattanooga in 1863." Ophthalmia, deafness, hemorrhoids, etc., are referred back to camp life as their primal cause, and where medical testimony to prove this cannot be had, the memories of comrades are tortured to supply the missing evidence. Untold frauds have been perpetrated, but the masses of the people are not yet in the mood to unearth them and bring them to light. It is still the policy of politicians to deal very generously with the soldiers, and to act out the principle that it is better that ten dishonest claims should be allowed, than that one worthy applicant should be rejected. Retrenchment is not popular with the people or with politicans, and the Grand Army of the Republic has recently denounced Hon. H. Clay Evans, the pension commissioner, who has found that there are a very large number of pensions now improperly paid, and that the frauds perpetrated upon the government extract from the treasury every year many millions of dollars. The pension commissioner is endeavoring to put a check on these abuses, but instead of receiving encouragement from the Grand Army for thus acting, his proceedings are made the subject of loud denunciation.

It has really been made comparatively easy for any who enlisted in the War of the Rebellion, whether they did any service or were mere shirks and poltroons, to obtain a pension, for the act of June 27, 1890, called the Dependent Pension Act, will admit almost any one upon the pension list, provided he has plenty of "cheek," perseverance, and a faithful lawyer, if not a Congressman, to help him. The amount paid out last year under this act was $66,255,070, and is likely for years to come to be a steadily increasing sum.

The primary intent of the Dependent Pension Act was to confer aid on indigent soldiers, who without having incurred any real disability in the army might with the advance of years become by any pathological cause, surgical or medical, so infirm as to be unable either wholly or in part to earn their support. The country would guarantee generously to provide a moderate stipend for such soldiers rather than that they should be obliged to solicit charity either from relatives, friends, or the general public. It was understood that under this law pensions were to be bestowed only on proof of disability which could be rated with some approximate accuracy. Medical boards must not only make a diagnosis, but a complete and accurate pen-picture of the disability of the claimant. But doubts have arisen as to these reports, and, according to the published statement of the commissioner, to test the value of these reports the singular device was resorted to in one case of sending the claimant before four boards successively. Each board found unanimously; there was no minority report. One found no ratable disability, one found $8 per month, one $17 worth, and the fourth $24 worth. Medical inquiries by government boards into ratable disabilities seem to have been of little protection to the government in many cases, but they are all we have. The only way, says the *Evening Post*, to root out the frauds in the pension business would be through publishing the lists and having a judicial revision of the findings in every case. But this would be a work of years, and already there is a mountain of claims to adjudicate.

It is important that the examining boards should do their work carefully and impartially. There should be no rating where no real disability exists. A man who can work hard all day from 6 A. M. till 7 P. M. should be ashamed to ask for a pension, even though he may suffer somewhat from muscular pains supposed to be "rheumatism," or may have some inconvenience from hemorrhoids. A large part of the claims now pending under the law of 1890 are for disability occasioned by rheumatism, and these cases give the examiner more trouble than any others, especially as the subjects often seem robust, and the morbid manifestations are purely subjective. If he marks "no rating," the claimant none the less perseveres, and eventually obtains what he asks from some other board.

Persons come before the boards asking to be rated for "rupture" when the hernia is easily retained by a truss, or for "varicose veins" when an elastic stocking would remedy any inconvenience thereby caused. Others ask a pension for hardness of hearing which does not interfere with their work; for imperfect eyesight when glasses remedy the infirmity; for dyspeptic troubles brought on by faulty dietetic habits which they might easily correct. It would be interesting to know how much the country is annually taxed for "hemorrhoids," for "chronic catarrh," for "headaches," for "lumbago," for "sciatica," for "chills and fever," for "diarrhea," etc., which have not disabled to any appreciable extent, or deprived of the means of earning a comfortable living those pensioned for these alleged complaints.

With those who are seriously, perhaps totally, disabled by paralysis, by consumption, by blindness, by visceral disease, by severe surgical injuries, the case is altogether different, and as long as the present pension laws exist, such persons will be the proper recipients of the bounty of the government. And as all the veteran soldiers are growing old, and are suffering to a greater or less extent from the infirmities of age, it will not be long before examining boards will be justified in rating as pensionable almost every applicant who presents himself before them. But before this, a service pension act will undoubtedly be passed and medical examining boards will no longer be needed.

We do not stop to speculate on the good times coming when not merely all the surviving soldiers of the War of the Rebellion (all who will accept the bounty) will be fed out of the public treasury, but there will be a great many soldiers of this summer's war to add to the list of the pensioned — unfortunately not so many who incurred wounds as disease in the campaign — and the raid on the country's exchequer will only be limited by the government's ability to satisfy all demands.

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FLIES AS CARRIERS OF TYPHOID FEVER.

A COMMISSION, consisting of Drs. Lee, Vaughan and Shakspeare, was lately appointed to visit our military camps and inquire into the cause of the epidemics of typhoid fever in those camps. This commission inspected the camps at Chickamauga, Huntsville, Fernandina and Jacksonville, and as a result of their investigation, reported that in their opinion the common house-flies, *musca domestica*, which swarmed in all the camps and had unimpeded access to the excreta and ingesta of the soldiers, were the active and immediate agents for the spread of this disease among the troops, the disease having been originally brought to the camps by the volunteers from their homes. The commission give in their report certain reasons for entertaining this opinion. The opinion at present has merely the weight of a plausible theory. No positive proof is adduced, and no control experiments have been made to support the theory. The reasons given for entertaining the theory are sufficient, and the theory in itself is sufficiently plausible to make such experiments, which should not be difficult, desirable.

The same theory was adduced to account for the scattered cases of cholera which occurred in the city of New York, in September of 1892, when that city was quarantined against the epidemic of cholera then prevailing in Europe. But this theory in regard to cholera was based upon the positive results of careful laboratory experiments made in Europe by Simmonds and Sawtschenko, experiments which showed, not only that the house-fly might be a carrier and disseminator of the cholera bacillus, but also that those bacilli are taken into the body of the fly, pass through it without loss of their active properties and, moreover, in all probability, actually multiply during their sojourn there.[1]

As above said, it would be quite worth while for some of our bacteriologists to apply such experiments and seek for such proof in regard to flies as carriers of typhoid fever.

This proposition as to the spread of typhoid among the volunteers by means of flies, it should be remembered, has no real bearing upon the question of fixing the responsibility for the high percentage of sickness among the volunteers and the neglect of camp hygiene. It does emphasize the fact that there was an astonishing neglect of camp hygiene in many instances. The measure of responsibility for the results — as between Congress, the War Department (which includes the Secretary of War, the Quartermaster's Department, the Medical Department, etc.), and the soldiers themselves — this still remains undetermined and unaffected by the presence and activity of the domestic fly. Of course, in so far as this responsibility is fixed upon Congress the "intelligent voter" himself must assume it.

We are not the first to recall, in this connection, the entomological verse:

> " Great fleas have little fleas upon their backs to bite 'em,
> And little fleas have lesser fleas, and so *ad infinitum.*
> And the great fleas themselves, in turn, have greater fleas to go on;
> While these again have greater still, and greater still, and so on."

MEDICAL NOTES.

Typhoid Fever not Malaria. — There seems to be good reason to believe that much and perhaps most of the so-called malaria which afflicts our troops in camp in Florida and in Puerto Rico as well, is really not malaria at all, but is typhoid fever.

Dr. John B. Roberts has resigned the presidency of the Board of Trustees of the Philadelphia Polyclinic and College for Graduates in Medicine. Mr. William E. Donovan, who has been a corporator of the institution since 1889, and a trustee for several years, was elected to succeed Dr. Roberts.

BOSTON AND NEW ENGLAND.

Return of the "Bay State." — The hospital ship *Bay State* arrived at Boston again on September 27th, from Arecibo, Porto Rico, after a remarkably quick and successful return voyage. She brought 100 men, nearly all of whom were members of the 6th Massachusetts. There were no deaths on the voyage, and all the patients had shown marked improvement. Only five of the patients were unable to walk from the ship.

Bequests to Hospitals. — By the will of Miss Caroline T. Downs, of Canton, which was executed on February 8, 1893, and has just been admitted to probate, the Children's Hospital of the city of Boston is to receive $20,000; and the New England Hospital for Women and Children, $20,000. If there is a remainder of her estate after paying the above bequests it is to be divided *pro rata* among these and other charitable institutions and in proportion to the amount that each has received.

NEW YORK.

Yellow Fever at Seguranca.—The transport *Seguranca*, on September 20th, arrived off Montauk Point from Santiago, and reported on board a case of yellow fever, the patient being a civilian, of Macon, Ga., who was attacked by the disease the third day out. The authorities at Montauk communicated the fact to the Health Officer of the Port and he at once requested that the vessel should be sent to New York harbor. She reached quarantine on the 22d, and the yellow fever patient and twenty soldiers were transferred to Swinburne Island, while the remaining passengers were taken to Hoffman Island for observation. Their clothing and baggage were disinfected, the ship was fumigated, and the crew were ordered to be kept on board for five days. On September 23d, the patient died, but no new cases developed. The sick soldiers were mostly convalescents from malarial fever.

School Facilities to be Increased.—The Board of Education announces that it will shortly be able to overcome the congestion of the public schools with which it was confronted at the opening of the session. This is to be accomplished by hurrying up the new school buildings, by the employment of an extra force of workmen, by the placing of all children under six years of age in the kindergarten grade, and by providing temporary hired quarters for the latter class of pupils until the new school-houses are finished.

The Smoke Nuisance to be Stopped.—The Board of Health has commenced a vigorous crusade against the smoke nuisance caused by the burning of soft coal, the use of which, unless proper provision is made for the prevention of smoke, is a violation of the sanitary code; and its inspectors have reported a large number of instances of such violation. A reasonable time is allowed to offenders to make the necessary changes after they are notified to cease using soft coal, and if the changes are not made within that time prosecution follows.

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[1] Journal, vol. cxxviii, p. 170.

Correspondence.

[From our Special Correspondent.]

THE CONDITIONS AT CAMP WIKOFF.

Camp Wikoff, Montauk Point, L. I.,
September 15, 1898.

Mr. Editor: — For a temporary quarantine of a large number of soldiers — for which purpose Camp Wikoff was originally intended — there could be no better site than Montauk Point. It is a high rolling country, bare of everything except a stubbly grass, with little lily ponds between the hills and with the sea nearly surrounding it. The temperature is consequently even, and there is usually a cool breeze, and were the air a bit dryer, it would be a perfect place for fever patients. The natural drainage is excellent, the sandy sub-soil absorbing what sewage does not run off into the hollows and I doubt if there is any place on the Atlantic coast where an army could camp which has such advantages of isolation, climate, water-supply, and of a railroad terminus and harbor, and consequently of transportation facilities. It is only four hours by rail to New York and two hours by water to New London.

The general hospital is some two hundred feet above sea level, and from it one can see miles in every direction — the natural barrenness of the landscape being relieved by thousands of tents, reminding one of a great daisy field. To the eastward in the direction of the light-house are long black lines of picketed horses and other moving lines where some of the cavalry regiments are riding to water, and during daylight there are endless chains of four and six mule teams crawling along the downs distributing supplies to different parts of the camp. The whole scene is continuously shifting, for every day some new troop-ship arrives or some regiment is ordered away, and this entails a great deal of work and movement. Yet one would hardly think that there are between twenty-five and thirty thousand men in camp and many of them sick.

When I first came, a month ago, there were only half a dozen hospital wards erected; the soldiers were coming in by hundreds every day, many of them critically ill, and supplies of every sort insufficient. Not only were food and water scarce, but what there was of it could not be distributed because of the confusion. It was every man for himself. The sick suffered the worst; I was given a ward in the evening, and found that the patients had had nothing given them but whisky and quinine since the middle of the morning. The only medicines obtainable were quinine, camphor and opium and cathartic pills. A few of the men had cot beds, about half had mattresses, and all had blankets. Whether it was the result of military discipline or the hardship the men had suffered I do not know, but I have never seen such an uncomplaining set of patients. Any attention that was paid to them was regarded as a favor; neglect was never noticed.

Supplies of all sorts were pouring in however; affairs were straightening out under a good executive and in two weeks the conditions were very different. There are now in the general hospital alone forty wards, supplied with nearly all the necessities; roads have been made, a well dug and the water piped to different parts of the camp, and there are dispensaries, commissaries, electric lights, street sprinklers, telephone and telegraph lines, etc. As an indication of the amount of work done, the signal corps handled 1,800 telegrams in one of the first days. The condition has now changed from one of great want to that of comparative comfort. Everything would have been done by the government in time; the visit of Secretary Alger and later of McKinley resulted in the cutting of much red tape so that supplies, etc., were much more obtainable; but at first, had it not been for the Red Cross, the Massachusetts Volunteer Aid (under the very able management of Dr. Prescott) and the War Relief Association, the suffering would have been great. When the quartermaster and medical department could not furnish necessities, one of these organizations could. An impartial observer cannot praise their work too highly.

Besides the forty wards in the general hospital, there are two division field hospitals, a cavalry division hospital, a detention camp and a quarantine station. Patients are constantly being brought in in ambulances from the outlying regiments, or from the harbor where the men are being landed every day. The latter are first sent to the detention camp for five days to await the appearance of infectious disease and if none develops are sent to the general hospital, and from here are transported to New York.

Each ward consists of seven section tents placed end to end raised over a board floor, ninety-eight feet long and eighteen broad, there being fifty patients to the ward when crowded. We are promised a cutting down of twenty patients as soon as the pressure is relieved, for while at present there is no trouble on account of poor ventilation, there is barely room enough to walk between the beds. There are two and sometimes three wards in care of each doctor, and each ward is entitled to four nurses and two orderlies by day, and two nurses and two orderlies by night. This would be sufficient assistance, if it were not that there are only a few trained male nurses among them, the orderlies being for the most part hospital corps men, or volunteers or detailed men from the ranks. Many of these are nauseated by their unusual duties, and have to quit; many others get drunk, and still others shirk, so that a ward is seldom supplied by the same force twice. The nurses have to do all the work about the patients, such as giving typhoid baths and enemata, for it is only an occasional orderly who is fit for more than manual work. The most difficult part of the routine is the proper disinfection of the typhoid stools. The dejecta are emptied from the bed-pans, which are supposed to contain already chloride of lime or formalin, into tin buckets, and these are in turn emptied into the sinks or backhouses a hundred yards away, but it is as impossible to teach untrained men to take any precaution as it was to prevent their drinking contaminated water in the Southern camps, although they have repeatedly seen the results of this carelessness. All clothing of men arriving from Cuba and all bedding of the typhoids are burned, the rest being sterilized by steam, washed and returned.

The continuous shifting of the patients is a cause of annoyance to every one. As each transport arrives with sick men on board, a corresponding number has to be turned out of the hospital, and this means, not only a large amount of work, but a serious danger to the convalescents, who very likely are just beginning to pick up a little.

The soldiers, as a whole, are in two classes, — the one in the pink of condition; the other, the very sick. There is no intermediate class. As a rule, the regulars and the cavalry men are in the best shape, and the volunteers in the worst, for the latter had not learned how to economize rations or to look out for their own health while in the field. The serious condition of the sick men seems to be accounted for by the lack or irregularity of medical treatment. The cases are almost entirely medical, the only surgery being what would ordinarily crop out among a large number of individuals. There is a single tent devoted to surgical cases, under the direction of Senn, of Chicago.

Perhaps half the cases are malarial, indeed, it is the exception that a man has returned from Cuba unaffected by "the fever." Advanced malarial cachexia is the most striking feature of these cases, and combined with the browning of the tropical sun produces a horribly emaciated, cadaveric look, worse than that of long-standing malignant disease. Many of the so-called "pernicious" malarias (which means nothing more than neglected cases) end fatally from secondary anemia; coma is frequent, and these cases are apt to run continued remittent temperatures without responding to quinine. Such cases are, with difficulty, differentiated from typhoid without the help of a laboratory; there are no chills, and the fever does not respond to large doses of quinine by the mouth.

Hypodermics of the muriate of quinine, which is a combination of muriatic acid and urea to obtain solubility, is more efficient and not too irritating to the tissues. Warburg's tincture in two drachms to one-half an ounce doses is also good, when there is no tendency to diarrhea. In the ordinary intermittent fevers, cinchonism has to be obtained before the temperature drops. Besides the malarial infection, there are all sorts of complications, such as gastro-enteritis from quinine, exhaustion, starvation, dysentery, etc. Almost any nervous phenomena may accompany the later stages. I have had cases of what seemed to be cerebro-spinal meningitis, angina pectoris, chorea, paralysis of the lower extremities, musculo-spinal paralysis and trifacial neuralgia, respectively, until they cleared up under quinine. I also had a case that for three successive days relapsed into deep coma with Cheyne-Stokes respiration, the attacks coming every twenty-two hours, and lasting four or five hours. The coma would come on suddenly while the man was sitting up in bed smoking, and would disappear just as quickly. Quinine, thirty grains by the mouth and the same amount subcutaneously, prevented a recurrence on the fourth day.

Occasionally the chills are so violent that the men nearly shake themselves out of bed; and in these cases morphine at the beginning of the paroxysm is a valuable antispasmodic.

Just what the mortality from malaria is cannot be told of course, but it appears to be as large as that of typhoid. Many of these cases could probably have been saved if the treatment could have been begun in time.

The typhoids, as well as the malarias, run atypical courses, owing to complications, and the mortality is also unnecessarily high, though since we have been supplied with temperature charts and means of giving sponge baths, there is a great improvement. Whether or not typhoid is spreading has been much discussed. A chemical examination of the water is said to have shown freedom from contamination, but it is surface water and unpleasant to the taste.

A series of cases just in from the camp of the Second Infantry, close to the well, is suggestive of trouble. These men had, in the main, good food, and all drank the water, and after being in camp here between four and five weeks, some thirty of them were taken with what seemed at first to be ptomaine poisoning, but later showed unmistakable evidence of typhoid. Two of these have come to autopsy. There have been other sporadic cases, but the above is the only suggestion of an epidemic. If the water-supply is infected, the entire country may feel the effects, for every day regiments, convalescents and furloughed men are being sent away to all parts of the country, without, of course, any precautions.

There has been much discussion as to whether or not a true typho-malaria can exist, that is, an occurrence of malaria and yphoid in the same patient simultaneously. The history of the following case may throw some light on the question:

"The patient came in with the diagnosis of typhoid and with typical symptoms of rose-spots, low delirium, and brown, dry tongue, and while running a convalescence consistent with typhoid, he suddenly had a well-marked malarial paroxysm, which was repeated. There was no history of fever, until the present illness began, a week and a half before entrance, nor had there ever been a chill. Large numbers of the estivo-autumnal organisms were found in the blood" (examined by Dr. Ewing).

The cases of dysentery are the most pitiful, and are of great severity. The mortality appears to be about half that of the other two diseases. They are all amebic; the prostration is great, some of the cases having as high as thirty to forty small bloody movements a day. Opiates and astringents are valueless, though occasionally of benefit if preceded by a purge. Irrigation of the colon with quinine solution up to five per cent., or with silver nitrate up to two per cent., gives fair results.

The above three classes comprise, perhaps, ninety per cent. of the cases, the others being the usual run of pneumonias, bronchitis and the milder infectious diseases. There have been no authoritative cases of yellow fever, nor of the other rarer southern diseases, and there is a striking absence of appendicitis, no case with this diagnosis having been reported in the past month. There is also very little venereal disease.

The quality of the medical work done is not nearly so bad as would seem likely from the rapidity with which contract surgeons were necessarily hurried into service. The best known men here at present are Delafield, Nancrede, Senn and Sternberg. Dr. James Ewing, of New York, is making a special study of the blood in malaria, and his work has been of great value in obscure cases.

The work of the regular army is so arranged that the assistant surgeon has all the care of patients; as soon as he is promoted above that position, his work becomes entirely executive and clerical. Not only is there no inducement to do good scientific work, but the red tape that surrounds everything makes it impossible to do it. If, every night, a correct sick report is turned in, there is never a word said in criticism of diagnosis or treatment. The clerical work alone is important. It is this sort of thing that prevented some of the transports in Cuba from landing their medical chests, though men on shore were suffering for the want of them. The army surgeons are aware of this and ridicule the system, but can do nothing to remedy it.

Many of the soldiers who were in Cuba criticise severely the manner in which they were transported and fed, and many more would do so, but for fear of being quoted. During the first few weeks of the camp, it was not uncommon to hear patients say: "Why, doctor, there's nothing the matter with me but starvation." While this was not strictly true, the insufficient or improper food was responsible for much of the sickness. The haste in which this camp had to be equipped, and confusion of orders, caused undoubtedly some suffering even here. For instance, sick men began to arrive at Montauk Point on the same day with the signal-corps men, who were to stake out the camp. Then orders were received to prepare hospital quarters for 500 men, yet this is only the usual number of sick to be expected in an army corps as large as that which came here, under normal conditions of health. The result was that for a month, sick men have been lying out in tents with their regiments for lack of room in the hospital. It seems also hard to explain why vessel after vessel was unloaded here, with the accommodations already insufficient, when, with clean bills of health, they might have gone directly to different centres along the coast. I am sure that dozens of lives have been lost by moving sick men who were doing excellently as long as they were not disturbed.

In accordance with orders just received to prepare permanent quarters for five hundred patients, ten of the wards are being converted into wooden sheds, and within a few days all the men will be under warm cover, or else transferred to New York. The rush is about over, and the patients are now getting good care, and will continue to receive it, unless one of the gales prevalent here at this season blows down the tents before they can be changed over. Barring an outbreak of typhoid here, or of yellow fever on one of the transports now on the way north, the camp will doubtless be deserted by the middle of October.

Very truly yours,

Seabury W. Allen, M.D.

METEOROLOGICAL RECORD

For the week ending September 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...11	30.22	60	70	50	59	46	52	N.W.	W.	7	10	C.	C.	
M..12	30.32	60	65	54	60	62	61	N.	S.	15	8	C.	C.	
T...13	30.39	58	67	49	71	70	70	N.W.	S.	4	9	C.	C.	
W..14	30.26	62	72	51	77	81	79	W.	S.	6	8	C.	C.	
T...15	30.15	60	65	56	97	89	93	E.	N.E.	5	6	G.	O.	
F...16	29.98	66	70	61	94	90	92	N.	S.E.	7	1	O.	F.	
S...17	29.99	74	84	65	87	77	82	W.	W.	9	8	C.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 17, 1898.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1333	610	25.46	9.15	18.53	3.08	1.54
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	362	119	19.04	15.12	7.84	3.20	4 48
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	—	—	—	—	—	—	—
Boston . . .	517,732	—	—	—	—	—	—	—
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—	—	—	—	—	—
Washington .	277,000	125	48	16.80	12.00	5.60	2.40	7.20
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	65	34	36.96	6.16	26.18	1.54	1.54
Nashville . .	87,754	30	7	10.00	6.66	10 00	—	—
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	105,050	31	18	12.92	9.69	12.92	—	—
Fall River . .	95,919	34	21	38.22	11.76	32.34	5.88	—
Lowell . . .	87,193	42	28	19.04	2.38	16.66	—	—
Cambridge . .	86,812	—	—	—	—	—	—	—
Lynn	65,220	—	—	—	—	—	—	—
New Bedford .	62,416	29	20	51.75	3.45	44.85	—	3.45
Somerville . .	57,977	19	5	21.04	15.78	15.78	—	—
Lawrence . .	55,510	22	14	12.45	8.30	8.30	4.15	—
Springfield .	54,790	19	8	31.56	5.26	21.04	5.26	—
Holyoke . . .	42,364	25	12	28.00	16.00	28 00	—	—
Salem	36,062	11	4	18 18	—	18 18	—	—
Brockton . .	35,353	—	—	—	—	—	—	—
Malden . . .	32,891	8	1	12.50	25.00	—	—	—
Chelsea . . .	32,716	21	11	14.28	4.76	—	—	—
Haverhill . .	31,406	7	2	28.46	14.28	—	14 28	—
Gloucester . .	29,775	—	—	—	—	—	—	—
Newton . . .	28,990	6	3	—	—	—	—	—
Fitchburg . .	28,392	8	2	12.50	—	12.50	—	—
Taunton . . .	27,812	11	0	27.27	—	18.18	9.09	
Quincy . . .	22,562	10	6	60.00	10.00	60.00	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	6	2	33.33	—	16.66	—	—
Everett . . .	21,575	11	4	18.18	9.09	9.09	9.09	—
North Adams .	19,135	6	5	66.66	—	66.66	—	—
Chicopee . .	17,368	9	4	11.11	—	11.11	—	—
Medford . . .	15,832	5	2		—	—	—	—
Newburyport .	14,794	9	4	55.55	—	44.44	—	—
Melrose . . .	11,965	5	2	20.00	20.00	20.00	—	—

Deaths reported 2,543: under five years of age 1,032; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 636, consumption 258, acute lung diseases 166, diarrheal diseases 441, typhoid fever 76, diphtheria and croup 57, whooping-cough 34, cerebro-spinal meningitis 16, scarlet fever 7, erysipelas 3, measles 2.

From whooping-cough New York 15, Philadelphia 7, Providence and Baltimore 5 each, Washington, Lowell, Brockton, Haverhill and Newburyport 1 each. From cerebro-spinal meningitis New York 8, Chelsea 2, Philadelphia, Baltimore, Washington and Somerville 1 each. From scarlet fever New York 7. From measles New York 2.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending September 10th, the death-rate was 24.6. Deaths reported 5,287; acute diseases of the respiratory organs (London) 130, diarrhea 1,318, whooping-cough 82, diphtheria 62, fever 48, measles 39, scarlet fever 29.

The death-rates ranged from 16.4 in Cardiff to 35.5 in Salford; Birmingham 23.1, Bradford 21.9, Derby 23.4, Gateshead 30.1, Hull 30.2, Leeds 23.5, Leicester 23.5, Liverpool 29.7, London 23.2, Manchester 30.3, Newcastle-on-Tyne 33.9, Nottingham 23.0, Sheffield 24.6.

RESIGNATION.

DR. J. L. HILDRETH has resigned as Dean of Tufts Medical School.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—The next regular meeting will be held at the Medical Library, 19 Boylston Place, on Wednesday, October 5th, at 12 M.

The following papers will be read. Dr. Wyall Johnston: "Medico-Legal Value of the Glycogen Test."

Dr. Oliver H. Howe: "Two Cases of Sudden Death in Infants."

Dr. Garry de N. Hough: "A Case of Cephalic Tetanus."

Dr. J. G. Pinkham will report a case.

Members of the medical profession are cordially invited.

JULIAN A. MEAD, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Advances in the Domain of Preventive Medicine. By J. M. G. Carter, M.A., M.D., Sc.D., Ph.D., Waukegan, Ill.

Catalogue of the Law, Medical and Dental Departments of the National University, Washington, D. C., for 1898–99.

The Gospel According to Darwin. By Woods Hutchinson, A.M., M.D. Chicago: The Open Court Publishing Co.

Transactions of the American Surgical Association, Vol. XVI. Edited by De Forest Willard, A.M., M.D., Ph.D. 1898.

Twelfth Annual Announcement of the University of Oregon, Medical Department, Sessions of 1898–99, Portland, Ore.

Eleventh Annual Report of the Board of Health of the City of Newport, R. I., for the year 1897, with Mortuary Statistics.

A Contribution to the Study of the Symptoms of Chronic Urethritis. By Fred. C. Valentine, M.D., New York. Reprint. 1898.

Chicago Sanitary Flour for Certain Dyspeptics and Diabetics. Diabetic Gangrene. By N. S. Davis, Jr., A.M., M.D. Reprints. 1898.

Report of the Kensington Hospital for Women (Non-sectarian), Philadelphia, from October 12, 1896 to October 11, 1897. Incorporated June 11, 1887.

Seventeenth Annual Announcement of the New York Post-Graduate Medical School and Hospital, University of the State of New York, for 1898–99.

Symposium on the Pathology of the Diseases of the Cardio-Vascular System. The Myocardium. By J. H. Musser, M.D., and J. D. Steele, M.D. Reprint.

Forty-third Annual Report upon the Births, Marriages and Deaths in the City of Providence for the year 1897. By Charles V. Chapin, M.D., City Registrar.

Cystic Degeneration of the Chorion Villi with Coincident Cystic Tumor of Both Ovaries. By Henry Kreutzmann, M.D., San Francisco, Cal. Reprint. 1898.

Tuberculosis and Its Treatment by the Later Methods; Subject Illustrated by Twelve Clinical Cases. By A. G. Deardoff, M.D., San Francisco, Cal. Reprint. 1898.

The Diagnostic Importance of Fever in Late Syphilis. Renal Calculus. The Essential of the Art of Medicine. By J. H. Musser, M.D., Philadelphia. Reprints. 1892–98.

Report of Surgical Operations in the Private Surgical Infirmary of Drs. C. S. and Samuel S. Briggs, during its Seventh Session, from September 10, 1897 to August 1, 1898. Reported by J. E. Bell, M.D., Nashville, Tenn. Reprint. 1898.

A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium; of the Medical Society of London, etc. Seventh edition. Philadelphia and New York: Lea Brothers & Co. 1898.

Original Articles.

CHOICE OF METHODS IN HYSTERECTOMY.

BY ERNEST W. CUSHING, M.D., BOSTON.

Six years ago a memorable discussion on hysterectomy took place in this Society which led rapidly to a complete change in the customary methods of performing this operation, and was the starting-point of a great increase in the frequency with which it was employed. It has seemed to me that it will not be without interest now to discuss certain points of the technique of the operation, and to compare different methods, in order to discover in how far we agree in our procedures and to what extent a consensus of opinion has been established. I therefore venture some observations based on my own experience in the the hope of eliciting the opinions of the other Fellows of this Society.

For the removal of the uterus we have to consider the following methods, each of which is or may be preferable in certain cases, so that it is of interest and importance to examine the indications which would cause either one or the other to be chosen in a given case:

- I. Suprapubic amputation
  - Extraperitoneal.
  - Intraperitoneal
    - Cervix cauterized and drained.
    - Cervix closed without cautery.
- II. Total extirpation.
  - Abdominal
    - Vagina open (peritoneum open or closed).
    - Vagina closed, choice of catgut or silk.
    - Combined operation, by vaginal and abdominal incisions.
    - Methods of Doyen, Martin, Richelot.
  - Vaginal.
    - Clamps (morcellation).
    - Ligatures, abdomen drained or closed.

I. (*a*) The extraperitoneal treatment of the stump by pins and the serre-nœud or elastic constrictor has been, I presume, abandoned by all of us, except under exceptional circumstances. Nevertheless, it is well to remember that it remains a precious resource as an expedient of emergency when, by reason of shock or weakness from previous hemorrhage, it is advisable to terminate an operation immediately. In some cases also of Porro's operation where the great vessels of the pregnant uterus are a formidable factor, or where there has been a rupture of the uterus during labor, and an operation of emergency is performed, this method of treating the stump will always have certain advantages for those who are familiar with it. The rising generation, however, will have no opportunities of seeing this operation or becoming familiar with its niceties, so that practically it is to be classed with the abandoned methods.

I. (*b*) The method of treating the stump intraperitoneally by dilating and cauterizing the cervical canal and draining it with gauze, as first introduced by Eastman, and recommended by Chrobak in 1891, was used by me in 1892 in some twelve cases with the happiest results; but I have now abandoned it, and I think that it has been generally given up, because in cases where there is especial reason to fear infection from the cervical canal, it is better to remove the whole cervix.

Careful experiments have shown that the healthy cervical canal is not septic, and the preparation for hysterectomy now universally adopted includes thorough cleansing and disinfection of the whole uterine cavity, so that when the opening of the stump is closed by suture it is found safe and preferable not to cauterize it, and thereby a better union is obtained.

If, when the stump is divided, the incision is made quite conical by traction on the body of the uterus and an oblique incision, there is very little of the cervical mucous membrane left, and there is a flap of uterine tissue in front and behind. I pass a long curved probe through the canal from above downward, and let an assistant draw down through the canal a strip of iodoform gauze wet in sublimate solution; this wipes all mucus and secretion from the mucous membrane, including any secretion which may have descended from the uterus during the operation, and prevents any infection of the cervical stump from the vagina after the operation. Even this procedure is not necessary in most cases. Then I unite the flaps of the cervix with catgut in continuous suture above the mucous membrane of the canal, and, returning, unite the peritoneum over the uterine tissue.

This seems the proper place to consider the indications for removing the whole of the cervix, or for leaving some of it — a point on which there is still much difference of opinion. The burden of proof seems to be on those who advocate total extirpation, for it prolongs the operation from ten minutes to half an hour, while frequently there is some blood lost before the lateral and posterior vaginal arteries are controlled. It may be added that the field of operation is brought nearer the ureters, and accidents have happened from this reason. It would seem that the opening of the vagina would increase the chance of infection, in spite of the most careful disinfection before the operation, and often when the vagina is short and the abdominal walls are thick or rigid the difficulty of operation is perceptibly increased. It is claimed that the pelvic floor is injured and the support of the intestines is diminished if the cervix is removed; but of this I have had no proof in my own experience. It is not to be denied, on the other hand, that the cervix uteri is the seat of sexual sensation to a considerable degree, and in many women it probably has a part to fulfil in the sexual orgasm, so that it is desirable to leave it intact unless there are indications for its removal.

Nevertheless, whenever hysterectomy is performed for malignant disease of any part of the uterus, the extirpation should be total; when the cervix itself is diseased, so that it is enlarged, eroded, or secreting profusely an unhealthy mucus or pus, it is better to remove it; when the uterus is removed with the tubes for tubercular conditions, or for gonorrheal disease which manifestly involves the uterine mucous membrane, so that there is presumably an infectious condition of the secretions, it is better to perform total extirpation, especially as in these cases it is often essential to provide for drainage. The same necessity for drainage may be a reason for total hysterectomy in cases where subperitoneal growth of fibroids has lifted up the peritoneum and left large raw surfaces.

If it is decided to remove the whole of the cervix, instead of amputating it, the incision is carried down at each side, keeping close to the uterus and pinching the lateral cervical arteries until the vagina is opened; or with a knife a median posterior incision may be made, cutting against the cervix, until the vagina is opened; or the same end can be reached by passing one blade of a pair of scissors into the cervix and cutting through it posteriorly until the posterior cul-de-sac is entered. I prefer the first method; but it is immaterial. When the whole cervix has thus been removed the operator has the choice of three methods: either (1) the vagina may be left wide open for drainage, or (2) the peritoneum may be closed and the vaginal raw surfaces may be left open, or (3) the vagina and peritoneum may be wholly closed.

Of these alternatives I would reject the second, which has only the advantage that it permits ligatures to come away in due time, after an annoying period of suppuration. It seems to me to be one of the transition stages in the development of the operation, and to be obsolete in the days of perfected technique. If the vagina is to remain open, then a stitch on each side (using catgut) will close the little lateral vessels, and may be so placed as to cover the stumps of the uterine arteries with peritoneum and to narrow somewhat, but not too much, the opening into the vagina. It is well to split the posterior wall of the vagina for half or three-quarters of an inch and whip it with catgut, so that the gauze which is left for drainage lies at the bottom of the pelvis and not at some distance above it, as is otherwise the case.

Nevertheless, in some cases where drainage is necessary, and they are less frequent now than they used to seem some years ago, I prefer to close the vaginal opening entirely, using the glass drainage-tube. This is only advisable, however, when the case is in a place where I can watch it afterward, and when I have a nurse who is thoroughly trained in the care of the glass tube.

In my opinion the method of election is that of closing the opening in the vagina with a continuous catgut suture, and afterward uniting the peritoneum with another continuous suture of catgut, so that there is an unbroken line of union from the free border of one broad ligament, across the pelvis, covering the stumps of the arteries and the line of union of the vagina, to the free border of the other broad ligament. When this is completed there is no raw surface whatever in the pelvic cavity; there is no need of drainage, and the convalescence is astonishingly smooth and painless. It makes it easier to unite the peritoneum smoothly, burying all raw surfaces, if, instead of applying mass ligatures, the broad ligaments are held by the fingers when severed, seizing and tying each artery as it is cut. Of course, if it is desired to show in how small a time the uterus can be removed the arteries will be at first secured with catch-forceps and only tied after the uterus has been removed. Sometimes the difficulties of the operation are such that this is the only practicable method; but I think that on the whole it is better to tie each artery when it is cut, for the time must be spent, in any case, before the abdomen can be closed, and there is no real advantage in removing the uterus in a given number of minutes if the whole duration of the operation is not thereby diminished. At any rate, when the vagina is cut open it should be sewed together at once, being held together meanwhile by double tenacula forceps, so that the chance of infection from this source is minimized.

It is indispensable that in the preliminary cleansing of the vagina and uterus all septic material shall have been removed or sterilized, but although this is easy to say it is not always accomplished satisfactorily. In foul or suppurating cases it is well, after curetting and washing out the uterus with sublimate solution, to pack the cavity with gauze, and even to sew up the cervix with a few stitches, so that afterward when the uterus is handled it shall not discharge an infectious secretion into the vagina. This can be done by an assistant, so that the operator may keep his hands clean.

This brings us to the consideration of the question whether it is not well to proceed, after cleansing the vagina and uterine cavity, to the separation of the vaginal tissues from the cervix and to the ligation of the uterine arteries from the vagina; in other words, to the method known as the combined operation. I do not know of any particular objection to this method if the operator has to clean out the vagina himself, or if he has an assistant who is competent to liberate the cervix and tie the arteries. The fact that it was formerly in rather extensive use, while the present methods were in evolution, and that it has been abandoned by all operators of the first rank, leads me to place this method among the transition stages in the development of hysterectomy. In cases of fibroids the finished surgeon will never have any difficulty in performing the whole operation from the abdomen. In the exceptional cases, where a huge fibroid polyp has been extruded, and the thick pedicle passes through the os uteri, it is better to tie and cut the pedicle and pack the uterine cavity with gauze, and sew up the os, and then proceed to the abdominal operation as usual.

In cases of pyosalpinx or other obscure conditions it is not well to complicate matters by performing an important part of hysterectomy from the vagina, when on opening the abdomen it may be found that the uterus with the appendages on one side may be saved, or that it may be unnecessary or inconvenient to remove the whole cervix.

In certain cases of cancer of the cervix, however, it may be a great advantage to remove all the tissue which is apparently diseased before opening the abdominal cavity, if it is thought preferable to finish the operation by celiotomy.

I should not have mentioned the combined method of operating as a method of election before this Society, since I do not think that it is practised by any one present, were it not that it has recently been recommended by a gentleman of great experience, and I have reason to think that it is still in use among general surgeons. To facilitate the liberation of the cervix, and to prevent hemorrhage, it has also been recommended to separate the vagina from the cervix by the thermo-cautery, thus taking it for granted that the vagina will not be united and that time will be given for the silk ligatures to come away after weeks of suppuration. Now, although this use of the thermo-cautery has been highly recommended in performing hysterectomy with the aid of clamps, precisely for the reason that it prevents the edges of the vaginal wound from uniting too early and so preventing the escape of the inevitable discharges, and also for the reason that it probably diminishes the chance of cancerous infection of the incised, or rather cauterized, vaginal wall, yet in the case of hysterectomy for fibroid I would emphasize the fact that we ought to finish the operation, whenever it is possible, so that the wound shall be united throughout, so that on the inside every raw surface shall be covered in by the peritoneum, and in the vagina there shall be a complete union without suppuration.

Although, if the peritoneum is closed, it may not be any great disadvantage to any given patient to have the vaginal wound heal by granulation, yet in a hospital every occasion for the propagation of pathogenic germs should be avoided. I often have had seven or eight cases of hysterectomy in my sanitarium at once, and certainly if all the abdominal wounds were suppurating I should not only be ashamed, but should think it a dangerous place to perform abdominal operations. Now, what is the difference in principle whether the suppuration be in the abdominal wound or out of sight in the vagina? The air is fouled, the nurse's fingers are infected, there is every chance through bed-pans, douche apparatus, etc., for the hospital to breed sepsis. There is even greater chance that the patient get a cystitis, or that she have chills and other serious symptoms from the damming up of the secretions by premature closure of the vaginal incision.

For these reasons and others which could readily be adduced, I maintain that the rule of all finished hysterectomy, either abdominal or vaginal, should be to close the wounds entirely, unless there is a positive indication for drainage or pressure packing.

It remains to consider the methods of Doyen and Martin, in which in the beginning of the operation the posterior vaginal fornix is opened from the abdominal side, the cervix seized and dragged upward; the broad ligaments are divided while compressed by the fingers of assistants, each artery as it is cut being seized with pressure forceps and tied afterward. Martin ties the broad ligament before opening the post-vaginal vault. Richelot's method is somewhat similar, except that he separates the bladder from the uterus first, and makes the incision between the bladder and the cervix, seizing the latter and drawing it up through the wound.

These methods in simple cases are rapid and showy, especially in the hands of their distinguished authors, who can make any method of operating seem easy and admirable. Nevertheless, I have no hesitation in classifying them as transition stages of the method of performing hysterectomy. They are all outgrowths of the combined operation, by which part of the operation was done through the vagina; in the case of the French operators by the introduction of clamps from below after the vagina was opened from above. They were evolved as a means of operating without the advantage of the Trendelenburg position, and for the convenience of an operator standing or sitting between the legs of the patient. The fact that such French surgeons as Segond and Jacobs, who have taken the pains to visit this country to study our methods, have renounced all other ways of performing hysterectomy and have adopted our procedures, is in itself an indication that we have nothing to gain by trying to copy a technique based on that of Doyen.

This brings us to the consideration of the relative advantages of abdominal and of vaginal hysterectomy, which was the principal object of the visit to this country of the distinguished gentlemen just named, and was also the motive of a visit which I made to France three years ago. I have given the subject much attention since that time, and from the results of my experience have arrived at pretty definite conclusions.

It is hardly necessary to point out that in a question of this kind the personal equation of the operator counts for a good deal. Some men have learned their art and achieved their distinction by operations in the vagina, while others are better trained in abdominal than in vaginal work. The training of the operator then, his possession of all the instruments necessary for the best work in vaginal hysterectomy, his surroundings, the length of his fingers, and even the rules of the hospital in which he operates may have an influence on the choice of the operation. It is not right, but nevertheless, it is a fact, that there are many hospitals in which the gynecologists are prohibited from performing operations by abdominal incision, where they may remove a fibroid by morcellation, or take out the uterus with the appendages by vaginal hysterectomy for salpingitis, but where they must transfer the case to the surgeons of the staff in case the abdominal wall is to be incised. Taking human nature as it is, we can readily foretell the resultant bias in favor of certain methods of operation. Contrary to the opinion generally held, it is, in my judgment, necessary to have a much greater dexterity, experience, and resource to perform vaginal hysterectomy in really the best manner in difficult cases than to operate by the abdominal incision. The burden of proof, therefore, is rather on those who recommend the substitution of the former for the latter in cases which are susceptible of operation by either method.

The advantages claimed for the vaginal method are: less danger of hernia, absence of cicatrix in abdominal wall, less time spent in operation and less shock. All of these advantages have become relatively far less by the improvements in the technique of the abdominal operation within the last few years; for hernia now is rare, the scar is reduced to a minimum, the difference in time is not sufficient to be usually of importance, and when abdominal hysterectomy is properly done without hemorrhage there is very little or no shock.

On the other hand, the abdominal operation has solid advantages which are founded on great principles of surgery and can never be shaken, for it gives greater certainty of diagnosis, greater facility in work by sight, the possibility of recognizing and overcoming unforeseen complications; greater security against wounding intestines and ureters, better control over hemorrhage.

There are certain special considerations which may further influence us in the choice of the method of removing the uterus, such as the age and physical condition of the patient, the amount of fat in the abdominal wall, the calibre of the vagina, the space between the pelvic bones, the preference of the patient, or even the possibility of obtaining consent to a necessary operation, which cannot be obtained if the abdominal wall must be incised. I need not repeat what I have said above concerning the objection as to the fouling the hospital by the vaginal method if clamps are used, nor refer to the pain and misery which the clamps produce. If these must be used there must be some reasons for the employment of a method which to-day seems crude and almost barbarous, whatever may have been its claims six or eight years ago, when abdominal hysterectomy was done by the extraperitoneal method.

The conditions, then, which would indicate the choice of the vaginal method with the use of clamps are, first, inflammatory conditions where the presence of pus in large amounts is certain, and the weakness of the patient is such that an abdominal operation would be probably fatal; in other words, where the operation is for the evacuation of pus in the pelvis, the removal of the uterus being incidental, if found necessary; secondly, when the patient is old or weak, or the abdominal walls are very thick, while the vagina is capacious and the uterus freely movable, so that the vaginal operation promises such a saving of time that it seems preferable. Under favorable conditions it can be done in ten minutes or even in half that time, and in some cases this is of real importance; thirdly, in cases of cancer of the cervix when the conditions make it undesirable to close the opening in the floor of the pelvis, and the abdominal operation seems to give danger of sepsis.

Except under such rather exceptional circumstances, if vaginal hysterectomy is to have any standing in the present state of surgery, it must be as a very finished procedure of a very finished operator, and it must have a technique which will compare with the abdominal method.

While not attempting to enter into all the points of the requisite technique, I may say that the operation should comprehend the same improvements which have made the abdominal operation so perfect; that is, the vessels should be secured with catgut ligatures, the peritoneum should be accurately brought together, covering all raw surfaces, and the vaginal wound should be united, preferably with catgut, in such a manner as to bury the stumps of the broad ligaments, and to give a linear cicatrix, which may be expected to heal by first intention. While aware that it is possible to remove the uterus without using any ligatures and without cutting the uterine arteries, yet this does not appeal to me as a safe and surgical method, and if the appendages are to be removed also, the absence of ligatures becomes too risky to make it a practical procedure. Supposing, therefore, that the ligatures have been applied and the uterus removed, we should try to do what we would do in operating from above; that is, we unite the anterior and posterior peritoneal layers of the broad ligament on each side from the ovarian down to the uterine artery, with a continuous catgut suture. Then stitches can be passed through the vaginal walls and the peritoneum in such a way that both the peritoneal and the mucous surfaces are accurately united, while at the same time the raw surfaces at each side are included so that there will be no oozing. If drainage is thought to be desirable, a small roll of gauze may be left in the centre of the incision, instead of closing it completely; but although I always used to do this, I have now largely abandoned it in clean cases.

Performed in this way vaginal hysterectomy has a standing in favorable cases in comparison with the abdominal operation. But the admirable results obtained by the latter method leave little room for the former.

Vaccination in Germany. — We learn from the *Philadelphia Medical Journal*, that according to the latest official reports, the total number of cases of small-pox in Germany during 1896 was 92, of which 10 were fatal. The cases occurred along the Russian and Austrian frontiers. We commend this record to our American and English readers as an excellent commentary upon the wisdom of thorough compulsory vaccination, and as one in marked contrast to those presented by Austria and Italy, in which countries the vaccination-laws are much less rigidly enforced than in Germany. In Austria there were 2,663 cases, with 410 deaths; in Italy, 9,036 cases.

THE EDUCATIONAL TREATMENT OF NEURASTHENIA AND CERTAIN HYSTERICAL STATES.[1]

BY MORTON PRINCE, M.D., BOSTON.

In recommending a treatment for neurasthenia and certain hysterical states, it must be understood that reference is made to the severer types of these neuroses only — to cases which have resisted all the ordinary methods and called for more extraordinary ones. Mild cases are usually amenable to simple procedures, like change of scene, cessation of wearing occupations and ordinary hygienic measures. As to the more obstinate cases, I think I am right in saying that we are still in need of a practical method of treatment which shall be applicable to the general run of cases. Neurasthenia differs from the organic diseases in that while on the one hand it is usually susceptible of cure, on the other it is not a self-limited disease, but may continue indefinitely, — growing, so to speak, on itself, and, like a snowball, taking upon itself bigger proportions from its surroundings.

A marked advance over all other methods was that originated by Dr. S. Weir Mitchell and bearing his name. It has unfortunately and mistakenly been called the Rest Cure. The logical basis of this method is, or perhaps was, the principle that faulty nutrition is the basis of neurasthenia, and that by curing faulty nutrition — making "fat and blood" — neurasthenic and hysteric symptoms disappeared. In the practical making of fat and blood, this primitive idea became associated with various other principles, inasmuch as the systematic procedure upon which successful treatment depends requires the combination of forced feeding, absolute rest, passive exercise and isolation. Rest and the other three agents are theoretically only devices to secure improvement in nutrition.

It should be noticed that by rest is meant absolute rest, so far as it is practically possible to make it. The patient is not allowed even to turn over in bed or feed herself. Passive exercise (massage and electricity) is only a device to prevent the deleterious effects in other ways, of rest, and to help the assimilation of food. Isolation is almost a *sine qua non* of the treatment; without it, the rest cure, although efficient in a certain proportion of cases, is still usually abortive in severe cases. This is a most significant fact. Now it is common knowledge that while the influence of isolation is complex, its chief mode of action is mental. This is so patent and so well recognized that I need not take the time to consider its mode of action in detail.

It is therefore apparent at once that along with the primitive idea of making fat and blood, another and essential factor has been introduced, namely, a mental one. And it must also be apparent to any one who is practically familiar with isolation in mental and nervous diseases, that the effect of mental influence can be enormously augmented or impaired according to the individuality and therapeutic attitude of the physician. As to the assumed pathological principle, — faulty nutrition, — I think there has been a growing conviction that this is not the real underlying principle of neurasthenia, and that the cures effected by the rest treatment are due to other influences, largely moral and educational, quite as much as, if not more than, to the nutritive factor. I do not believe that the observations of the best and most experienced clinicians will support the view that neurasthenic symptoms are wholly dependent on, or caused by, inanition, whether of tissue or of blood. As to my own observations, I can say that in the early years of practice the scales occupied the more conspicuous place in the consulting-room. I accepted the inanition theory with unquestioning faith, and it was a disappointment to find that later experience failed to verify it, and that too frequently the relation between weight and neurasthenic symptoms was a very loose one. It frequently turned out to be the case that with gain of weight symptoms failed to disappear; and with equal frequency, perhaps, that with good nutrition marked neurasthenic symptoms were present. It became evident that some other principle was at work as a causative factor than that of insufficient nutrition.

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[1] Read before the Massachusetts Medical Society, June 8, 1898, and recommended for publication by the Society.

I find this conclusion now amply verified by a review of my cases observed during the last fifteen years, and it seems to me also to have been recently verified by a very valuable study of "The Relation of Neurasthenic Conditions to the General Nutrition," by Dr. Robert T. Edes.[2] Dr. Edes, as a result of a systematic study of his cases, has arrived at what seems to me similar conclusions; that is to say, Dr. Edes concludes "that no plan of treatment which affords a prospect of anything like enduring success can afford to leave . . . wholly out of sight" the improvement of the nutrition. "So far as body-weight, which, of course, depends upon the harmonious work of more than one function, is concerned, by far the greater number of my cases seem to fully confirm the popular view. In the great majority a steady gain in body-weight went hand in hand with improvement in nervous symptoms." But this improvement, it should, I think, be pointed out, occurred in a sanitarium where it is to be presumed there were the conditions of rest and isolation as co-operative factors. On the other hand, he found special groups of cases which were partly incompatible with these ideas, and which went to show "that although the two processes of improved general nutrition and returning nervous strength do go so nearly hand in hand, they are not one and the same, and it is not always easy to say which leads." I think it is quite as much the case that improvement in nutrition is an accompaniment of improvement in health and an index of such improvement, as it is the cause. As a state of health begins to return, the body takes on increase of weight.

The fact may be fairly stated to be that the relation of nutrition to health is a general and not a specific one, and just about what every one has known from time immemorial, namely, that people in good health are usually well nourished, and when they begin to break down they lose flesh and gain again when they improve. Conversely, poorly fed and nourished people break down more easily than well-nourished people. They cannot stand the strain or do the work required of them any more than can a poorly fed horse. So, impaired nutrition undoubtedly plays a part in neurasthenia, but it is a co-operative part and not the only or primary one. Neurasthenic symptoms may exist with or without malnutrition; unquestionably, imperfect nutrition tends to increase and encourage fatigue, and fatigue tends to perpetuate symptoms. When malnutrition is present, fatigue is more easily induced, and in fatigue symptoms are more easily excited and tend to persist, habit symptoms are less easily broken up, automatic symptoms continue, and the tendency to relapse and to a return of former symptoms is greater. As Dr. Edes says, we cannot afford to leave wholly out of sight the principle of malnutrition.

I think it would be approximately correct to say that the neurasthenic state is primarily one of fatigue, and that, as a rule, it is more easily brought about when malnutrition exists, and that when malnutrition comes on secondarily, as is apt to be the case, it is more easily cured when the nutrition is restored. But increasing the quantity of fat and blood does not necessarily cause the nervous system to react normally or remove the condition of "fatigue." It does not necessarily increase the quantity of the hypothetical energy-holding compounds in the cells. Making fat and blood bears the same relation to the act of curing symptoms that using steam and horse-power does to hand labor; it makes the work more economical, easier and quicker, but it also, and here the analogy ceases, it also makes the result more permanent.

We may not hesitate, then, to accept formally what most of us think, that the assumed physiological principle, that the neurasthenic state is caused by faulty nutrition, is unsound. The introduction of the device of absolute rest in the treatment — for it is a device to aid the purpose of improving nutrition — does not in any way strengthen the malnutrition principle.

More important than the supposed scientific principles upon which any particular treatment is based are the practical results which are obtained by it. That the rest treatment has been successful in experienced hands, and especially as practised by its distinguished originator, must be accepted, irrespective of any contrary results that may have fallen to the lot of individuals. For myself, I can bear testimony, if at this late date this were necessary, to the brilliant results which have followed Dr. Mitchell's treatment of cases of which I have had personal knowledge. I feel myself indebted to Dr. Mitchell for undertaking the care of a number of severe cases which have always returned to me to bear witness by their restored or improved health, to the skill of this eminent physician. Undoubtedly there are other members of the profession in whose hands the rest cure has given perhaps equally satisfactory results. In its general plan it has been adopted with more or less thoroughness in probably all sanitaria for nervous diseases in this country, and has had an influence upon the general practice of the profession, which can be paralleled only by the late discoveries in bacteriological medicine. To its influence we probably owe the development of a large number of sanitaria which of late years have sprung up throughout the country.

Nevertheless, even if all this be true, there have been certain drawbacks, and I may say ill consequences of the method, and certain difficulties in carrying it out, that make a reinvestigation of the treatment of neurasthenia desirable.

The objections and outs of the treatment may be briefly stated as follows: (A) While we must recognize that the treatment has been brilliantly successful in the hands of certain individuals, nevertheless it has been a failure in the hands of others. It is not a treatment which is calculated to give equal results independent of the personal qualifications of the physician; this largely because its fundamental principle has been wrongly interpreted and therefore the treatment itself has been too often improperly carried out. (B) Many cases which are distinctly curable, and which later were cured by other methods, have failed to be cured by the rest cure, although systematically employed. (C) It too often happens that patients improved by this method fail to stay well, but promptly relapse as soon as they are again exposed to their old environments and the wear and tear of life. (D) Many patients far from being cured are made distinctly worse and become more confirmed invalids than ever. The rest cure not only makes use of improved nutrition but employs the most powerful of all therapeutic agents in neurasthenic and hysterical conditions, to wit, every moral influence that can be brought to bear by means of change of surroundings, isolation, active physical manipulation of the body and the personal influence of the physician. When this moral influence has been lost sight of, and reliance has been placed by the physician upon the mere physical details of the treatment, looking mainly to the increase in nutrition for the therapeutic effect, the result is apt to be a failure. Under such conditions, in fact, I do not hesitate to say that the rest cure has done much harm; a result which, as I have said, has been due to a misunderstanding of the real principles involved. When a patient has been for a considerable period of time secluded and absolute rest has been enjoined, and when after the prescribed period the expected freedom of symptoms has not been obtained, I think that, as a rule, a distinct injury has been done the patient; pathological habits of the nerve centres have been strengthened, new morbid associations formed, and the symptoms have become more firmly rooted and more difficult to dispel. In fact, the symptoms are worse and the neurasthenic or hysterical state more fixed. Under such conditions the tendency is to prolong the rest, hoping for an improvement each week, and at the end of each additional week of rest the matter is made worse. In other words, rest and seclusion under such conditions have a tendency to cultivate and strengthen neurasthenic and hysteric habits, and the last state of that person is worse than the first.

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[2] The Relation of Neurasthenic Conditions to the General Nutrition, with reference to (*a*) Body-weight; (*b*) Blood-Measurement; (*c*) Excretion of Urea, Uric Acid, Indican. By Robert T. Edes, M.D., of Jamaica Plain, Mass. Transactions of the Association of American Physicians, vol. xii, 1897.

Mere improvement of nutrition cannot be relied upon to remove neurasthenic and hysteric symptoms. Mere rest alone, without isolation, without improved nutrition, without strong moral influences, will not do it. Under such a rest it is the too common experience, that so far from being removed, they become more persistent than ever or, even when they disappear, they at once return after restoration to the environment. For this reason I am of the opinion that the rest cure is a method that, when not properly understood in its real underlying principles, is capable of doing the greatest harm, and I do not hesitate to say that it is a most dangerous method in inexperienced hands. I say this not as a mere unfounded generalization or impression, but as a logical induction from an enumeration of quite a number of cases which I have seen in private and hospital practice, treated unsuccessfully by this method.

Finally, a practical objection to the rest cure, even when it would otherwise be effective, is the expense.[3] In some cases this practically debars many patients from its benefit, so that for this reason alone it is desirable that we should have some effective method applicable in most cases.

What method, then, can we suggest to take its place? I am perforce compelled in a paper of this kind to limit myself to certain general principles.

The method of treatment which I have practised during the past eight or nine years with satisfactory results and which I now bring to your notice, is what may be termed for want of a better name, the Educational Treatment, combined with mental therapeutics and physical hygiene. The general mode of procedure may be summarized as follows:

(1) Instruction of the patient in the nature of the symptoms and disease.

(2) Fixed ideas, apprehension and erroneous beliefs counteracted; faulty habits of temperament and character corrected.

(3) Individual symptoms suppressed by electricity, suggestion and other therapeutic agents.

(4) Rules given for the daily conduct.

(5) Improvement of nutrition, moderate rest, and, in extreme cases, isolation from previous surroundings only.

I will briefly consider each of these principles, taking them in a somewhat different order than I have done.

Isolation. — Perhaps the first question in the treatment is to determine how far is isolation necessary. If by isolation is meant not only the separation of the patient from all former surroundings, but a restriction of all intercourse to only the nurse and physician for any considerable period of time; if this is meant by isolation, then I doubt extremely whether it is necessary or desirable in any class of cases, unless it be a few exceptional cases of severe hysteria. Separation from previous surroundings and associations, and particularly not only from all members of the household but from the house itself, is always beneficial and a great help in the treatment. I believe this to be one of the strongest moral therapeutic agents, and as potent as perhaps any factor in bringing about a cure. When, therefore, there are no financial or other difficulties in the way of obtaining a limited isolation of this kind, I would always advise it as a great help, but it does not seem to me that absolute isolation is desirable. On the contrary, I would strongly advise the systematic development of new associations and the encouragement of new thoughts and new mental and physical habits, which are best brought about, not by complete isolation, but by bringing the patient in active contact with the new world in which she is brought. Some cases require a change of surroundings more than others. The more marked the mental symptoms, the more hysterical, the more emotional the character of the disability, the greater the necessity for a separation of this kind, and a change of all external influences. In some extreme cases such a separation is absolutely necessary and any attempted cure is useless without it. It is for this reason that patients do better when they go under a physician's care in a distant city than when they are even under the best of treatment in their own place of residence. The familiar associations of even the streets and acquaintances work for harm, while new scenes, new streets, strange people are strong mental factors for good. But practically it is only feasible for a limited portion of neurasthenics to be removed from their homes, and we therefore have to take the conditions as we find them. Fortunately such separation, although a great aid, is not absolutely necessary in the great majority of cases, and therefore the rule I would lay down is: "Procure separation only where feasible in moderate cases, and insist upon it at all costs in the extreme and worst cases." A nurse is not required excepting in the worst cases.

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[3] Properly carried out it involves the cost of board and lodging in a first-class boarding-house or hotel for two persons, patient and nurse, for a period of six or eight weeks, with one or two months' further sojourn in hotels at the sea-side or country. Then the cost of electricity and massage (sometimes extra), the wages of the nurse and the physician's charges for daily attendance all mount up to several hundreds of dollars.

Education and Mental Therapeutics. — The next part of the treatment, and at the same time the one that is most difficult and interesting, is what I call the education of the patient. It is upon this that we must rely for the suppression of the individual symptoms, the acquisition of strength and the development of habits of body and mind that will enable the patient to return to the wear and tear of life without breaking down. The preliminary step in the treatment is the study of the origin, history and groupings of individual symptoms. It is surprising to find, after a searching inquiry which involves every detail concerning the origin and character of the symptoms, and the conditions under which they arise, how often what seems to be a mere chaos of unrelated mental and physical phenomena will resolve itself into a series of logical events, and law and order be found to underlie the symptomatic tangle. By such a study we can determine what symptoms are pure habit symptoms, of the kind which Dr. Taylor to-day has already described and of which he has given us examples; what symptoms are pure manifestations of hysteria; what are due to faulty ideation or auto-suggestion; what fatigue is due to real physical exhaustion and is true fatigue and what is false fatigue; what pains are due to the diffusion of effort and association and what are due to some real underlying physical cause; what symptoms are due to real disease of organs like the heart or stomach and what to mimicry. After unravelling the symptoms in this way it will be surprising to find how much facilitated will be the removal of them.

For example: Miss D. had what ordinarily would be called neurasthenia, but what I prefer to call hysterical neurasthenia, of two years' standing. Her general neurasthenic condition was easily cured in a few weeks, but there persisted for almost a year after being otherwise well, a pain in the left lower abdominal region. This she had had for two years. She had had various kinds of treatment, gynecological, electrical and drugs without benefit. The pain was of sufficient intensity to cause considerable distress. Careful physical examination by an eminent gynecologist and myself failed to find any physical reason for it. Finally, a searching inquiry previously neglected showed that the first appearance of the pain was after the introduction of a pessary which had to be removed on account of pain and discomfort. The present pain and discomfort are exactly the same in character as that originally caused by the pessary. It is not continuous; it is relieved by exercise and by conditions that would aggravate any local pathological process. The conclusion is then reached that it is a habit neurosis originally excited by the pessary and now continued by sub-conscious ideation and habit. The explanation is accepted by the patient and a cure rapidly follows.

Mrs. R. suffers from neurasthenia which has been unfortunately diagnosed as lead-poisoning. Fatigue is a prominent symptom; she is capable of very little physical exertion, being able to walk perhaps a block. Inquiry shows that her treatment has forced upon her the impression that there is some distinct but mystical disease of the nervous system caused by lead, and she has been unconsciously educated to have fatigue after exertion. Every time she attempts walking she is apprehensive of doing permanent damage. The fatigue is thus shown to be false fatigue and easily cured by mental therapeutics and hygiene, so that in a week or two she takes quite long walks, etc.

Mrs. D., an extreme case of hysterical neurasthenia, suffers from extreme dyspepsia and an abdominal neurosis or paresthesia. Careful investigation shows the dyspepsia to be mostly false and to be really a hyperesthesia of the stomach of probably the same pathology as is the common photophobia of the eyes in neurasthenia. The abdominal neurosis is also found to be of a similar character. The same patient was a notorious sufferer from headaches. These after analysis are shown to begin with true megrim and then to pass into hysterical headaches. The key to the multitude of symptoms exhibited by this patient almost always can be found to be *apprehension* or auto-suggestion.

Mrs. S. suffers from attacks of tachycardia, palpitation, and syncope if she attempts to go out doors. She has been educated to believe she has heart disease, although careful examination by a prominent physician showed nothing organic. These attacks cease when the true nature of them is explained, namely, apprehension and expectation.

Miss V. This was one of the worst and most inveterate cases of cerebro-spinal pain in a neurasthenic of seventeen years' duration, that I have ever seen. From the pain and general fatigue she had been incapacitated for seventeen years and deprived of almost all participation in the ordinary affairs of life. A careful study of the original conditions of occurrence and other peculiarities of the pain showed conclusively that it was an association or habit neurosis. It finally yielded to prolonged and persistent educational treatment.

The second preliminary step is the study of the personal characteristics of the patient, with a view to determining what part mental influences have in the symptoms, and to obtaining the co-operation of the patient. Further, a person who is sensitive, whose feelings are easily wounded, ready to see personal reflections in any criticism of his or her habits, must be very differently treated from one who is thoroughly open-minded, not sensitive and indifferent to criticism, and ready to co-operate in the treatment without regard to personal considerations. This co-operation is a very important factor. The attitude of the physician should be largely that of the trainer to the athlete. He is to teach the patient how to help himself.

Having gained the patient's confidence and co-operation, the rules I would lay down are these: First, remove all interfering mental states that prevent the subsidence of symptoms; these are: (*a*) a fixed idea or belief in the seriousness of the condition and the existence of real organic disease; (*b*) a belief in the danger or incurability of the state; (*c*) a fear or *apprehension* that any harm can come to the patient from incautious actions, like exercise and doing various things; (*d*) sub-conscious fixed ideas or memories producing hysteric symptoms.

One of the commonest hampering mental states is a belief on the part of the patient that doing things that bring on symptoms is likely to produce serious harm. Most patients do not mind disagreeable feelings so much as they fear that anything that produces them might do them serious and lasting harm. A patient, for example, refuses to go about not because he minds fatigue, but because he thinks that fatigue means serious damage. Another fears to move because of cardiac symptoms which he imagines or has been told indicate heart disease, but does not mind them if he can be assured and really believe there is no cardiac trouble. It is surprising sometimes to see the almost immediate beneficial effects produced by the mere acceptation of the idea that symptoms do not mean disease or lasting injury. With the acceptation of this idea, symptoms sometimes subside at once.

The next point is the instruction of the patient in the meaning of symptoms. The patient should be allowed to understand the cause and meaning of each discomfort; for example, when symptoms are pure habits, due to association of ideas and actions, when fatigue is a false or habit fatigue this should be explained. It is my habit to give a great deal of time to this instruction. It is important to take the patient into your confidence and explain the nature of such symptoms as if one were explaining to a colleague; and above all, when the case is of hysteria to say so frankly, and not conceal the fact, but explain its nature. Next, when tendencies to emotional states exist, states of anger at trivial things, anxiety, fear, worry, nervous shocks, accompanied as these usually are by somatic symptoms, to educate the patient to control and suppress all such emotional states. Here tact, character and individuality on the part of the physician come in.

Suppression of individual symptoms by appropriate therapeutic agents. — Now comes in one of the most important parts of the treatment, namely, the daily suppression of individual symptoms by proper therapeutic agents. Symptoms should, if possible, be suppressed as fast as they arise without being allowed to gather headway and grow, in order that faulty habits and reactions of the nervous system may be broken up at once. It is preferable that the patient should make visits to the physician's office rather than the reverse. When a patient makes a pilgrimage, as it were, for the distinct purpose of being alleviated, the effect of the treatment is generally heightened. For the suppression of symptoms, one of the most valuable therapeutic agents, and one which I find myself making use of more and more in practice, is direct suggestion. This occupies a very prominent place in every case. It may be used in various forms and for different purposes. As to the form which is used, I have rarely of late been obliged to resort to the hypnotic state, but have obtained all the influence that I have needed in a waking state, using for the purpose static electricity where it can be had; the faradic or galvanic battery will sometimes answer. At the same time that the electricity is applied the suggestion is given, and the patient is instructed in the nature and cause of her symptoms and disease, and what is to be expected. In a waking state, a suggestion is more efficacious if given symbolically, so to speak, through some material agent. I myself rely almost entirely upon some form of electricity. I would not overlook the purely physical effect of electricity in neurasthenia. I believe it has a physical influence especially in suppressing painful feelings, and removing fatigue sensations. I would therefore make use, at one and the same time, of both influences, the mental and the physical. In some cases the physical, and in some cases the mental, influence predominates. To illustrate, a patient is directed to come daily at first to the physician's office. The patient's symptoms, we will say, are headache, insomnia, backache and fatigue. The static douche and sparks are used, the present and future effect expected insisted upon; if possible the patient is not allowed to leave until some, or complete, relief has been obtained. The beneficial effect of drugs should not be neglected. Often sedatives like bromide are valuable. Gouty and rheumatic tendencies should be corrected, and the diet carefully regulated, of course, when dyspeptic symptoms exist.

My plan is to take each symptom individually in turn, no matter in what part of the body it may be, and by appropriate therapeutic agents to endeavor to dispel it as fast as it appears.

In some but rare cases of hysteria it may be necessary to go down to the lowest strata of consciousness, and for this purpose the hypnotic state may be necessary. One advantage of hypnosis in such cases as this is that in this state we can often learn from the patient the causes and origin of symptoms which in the waking state are forgotten. For example, Miss F. suffers from attacks of pain in the left side, with various other symptoms, coming on under peculiar circumstances. It is related in hypnosis that they all date from a certain episode involving an emotional shock. The psychical character of such pains is at once demonstrated, and their removal facilitated by suggestion. Many such instances might be cited.

A further value of hypnotic suggestion is that you are sometimes able to make in the hypnotic state criticisms of the patient's habits which will be resented in a waking state. Ordinarily hypnosis is not necessary. Besides suggestions directed to the individual symptoms, others should be given directed to the state itself; for example, that there is no real disease at all, only a lack of harmony in the working of the system, according to the view taken by the physician, always being particular to state the truth and exactly what the physician believes. Suggestions should also be given to counteract fixed ideas, fears, apprehensions and expectations of the patient, and by such suggestions to anticipate future accidents that may arise.

Avoidance of artificial cultivation of symptoms. — Just as education is a most potent factor for good, it may have an equal influence for evil. Caution is therefore most desirable against unintentionally suggesting all sorts of possible evil consequences that may result either from the actions of the patient or from the disease. The physician should be cautious against suggesting himself, or allowing others to suggest, either directly or by innuendo, that fatigue, pain, insomnia, or any discomfort will be likely to supervene under certain circumstances, and above all that any real lasting injury can be done the patient by any effort of any kind. This does not mean that rigid rules of conduct should not be prescribed; on the contrary they should be, but it should be done with intelligence and judgment. I have seen more than one neurasthenic whose symptoms have been the pure result of unintentional cultivation.

Next, educate the subject's body and nervous system to do whatever it cannot do without symptoms. An educational process of this kind is the same as that which is used in teaching a person in any of the arts or sports. If a person cannot walk without fatigue, he must be taught to do it. If he cannot go to the theatre without pain, he must be taught to do it. If he cannot put food in his stomach without distress, particularly when this distress represents a feeling of dyspepsia, the stomach must be taught to bear food without resulting discomfort. This is the opposite of the system which would suppress every action which cannot be accomplished without discomfort. Some physicians, I find, have a habit of restricting a patient from doing whatever cannot be done without pleasure and comfort. The result of this is that the symptoms tend to grow and increase until finally the restriction must be proportionately increased, for example, a patient who cannot walk without fatigue, a fatigue that is evidently false, if cautioned too severely and restricted, will evidently end by becoming confined to the house and thus to the bed. If the co-operation of the patient is obtained as above, this is unnecessary.

Finally I would say, in regard to the educational part of the treatment of neurasthenia and hysteria, it is most important that a methodical regularity of life should be enjoined, almost each hour of the day being filled up by the physician. This both for its moral and physical effects. To summarize once more the daily educational treatment:

(1) Instruction in the nature of the symptoms and disease.

(2) Fixed ideas, apprehension and erroneous beliefs counteracted, faulty habits of temperament and character corrected.

(3) Individual symptoms suppressed by electricity, suggestion and other therapeutic agents.

(4) Rules given for the conduct during the succeeding twenty-four hours.

Food and Nutrition. — When faulty nutrition exists of course it must be corrected on general principles of health. We cannot expect permanent robust health with endurance for bodily activity so long as the body is underfed. For this purpose my plan has been to give five to six raw eggs daily in addition to the meals, one between each meal and one immediately after each meal on leaving the table, and one at bedtime. The eggs are to be swallowed whole without the yolk or albumin being broken. This is a trick easily acquired. Any other form of nourishment may be substituted, but this is the most practical. Increase of weight, it must be remembered, is an adjuvant or co-operative factor, not the end sought.

Rest. — A certain amount of rest *must be given.* What amount of rest is required? Absolute and continuous rest I have of late years rarely used, excepting in cases that are already more or less bed-ridden. I find it not only unnecessary but a distinct disadvantage in the majority of cases. The only advantages are: First, the moral effect. This may, if properly made use of, be great; but I cannot help thinking that the same moral effect can be obtained in a more straightforward way by appealing directly to the intelligence of the patient. Second, when severe dyspepsia is present it enables us to get along with smaller quantities of food while we are educating the stomach to take larger quantities. The disadvantages are distinct. (A) At the end of a period of four or six weeks we have, in addition to the fatigue of the disease to contend with, the weakness from prolonged rest. (B) It tends to cultivate habits of fatigue and other nervous symptoms after effort. (C) Absolute rest requires the constant attendance of a skilled nurse, whose qualities are not easy to obtain, and the more continuous attendance of the physician. (D) It requires massage and electricity to counteract the deleterious effect of rest. (E) It taxes the ingenuity of the physician to fill up the time. (F) We lose much time in beginning the educational treatment of the patient, in teaching self-control and breaking up faulty habits. (G) It is unscientific and unnecessary.

But some amount of rest above that of a night's sleep a patient must have, and for this reason: there is a limit to the endurance of every person. The average person perhaps finds eight hours' sleep sufficient, giving sixteen hours to the wear and tear of life, or fatigue-producing occupations, including pleasures. Of these sixteen, nine can be used for actual work and the remaining seven for recreation, exercise, feeding, etc. But the seven thus spent are also fatigue-producing hours. Now the essence of neurasthenia is a lack of endurance and easily induced fatigue, with delayed recuperation, so that a neurasthenic, instead of being able to give sixteen hours, can only spare eight or ten to fatigue-producing occupations. It is therefore necessary to cut down the day hours during which a neurasthenic is exposed to the wear and tear of life, including pleasures. Now when fatigue has been produced it does not matter whether it is true or false fatigue — the patient is incapacitated for further exertion. I have always found it useless to push patients when this point is reached; if it is done the result has almost always been disastrous. The patient can be educated or trained but not pushed, just as an oarsman can be trained to do a double amount of work but he cannot be pushed at first beyond his strength.

The rule I would make then, is this: Divide up the day into alternate periods of rest and occupation. See that sufficient rest is given, taking the peculiarities of the individual case into consideration; and having done this, see that the occupation periods are utilized in training the body and mind. Instead of absolute rest then I would insist on the opposite or active use of the nervous system for certain periods of time. It is important that the hours of the day should be actively filled up with little time left on the hands of the patient.

The principle is, see that enough rest is given, and being satisfied of that, see that the remainder of the time is spent in education and training, and provide as much hygienic occupation as the patient will stand. If a neurasthenic cannot sit up ten minutes, she can one, which will soon become ten. If she cannot drive twenty minutes she can ten.

General Wood's Powers Enlarged. — The jurisdiction of Military Governor Wood, formerly colonel of the Rough Riders and before that a surgeon in the army, has been extended by President McKinley, until it now embraces the entire province of Santiago de Cuba.

THE PHYSIOLOGICAL EFFECTS OF COMPRESSED AIR.[1]

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Mankind is a group of animals adjusted to an atmospheric pressure varying but slightly from that of 760 millimetres of mercury. Any great deviation causes interesting physiological disturbances. The earliest demonstration of this fact was made unwittingly by mountain climbers. After reaching heights of two miles they found the respiration rapid, and the pulse quickened, causing painful throbbing headaches. Blood flowed from the nose, eyes and mouth; there was also nausea and vomiting much as in sea-sickness.

All animals do not suffer thus. The naturalist Humboldt, after climbing the Cordilleras, gazed with envy at the condors soaring calmly at an altitude which he calculated to be about 18,000 feet. Every now and then they plunged down to the surface of the sea, passing in a few moments of time through an enormous range of barometric pressure and all the climates of the globe, yet experiencing no inconvenience — birds which ought to find New England congenial.

Although mountains reaching into rarefied air are numerous, the world must be traversed to find valleys deep enough to possess a sensible increase of atmospheric pressure. There is one in San Diego County, California, 360 feet below sea-level, which is used as a health resort, but the results of its slightly compressed air are not appreciable. A deeper valley is that of Lake Assal, east of Abyssinia, which lies 760 feet below the sea, but there no recorded observations have been made. In deep mines the dust and vitiated air render experiments of no value. We must resort consequently to artificial modes of compression.

At the beginning of the sixteenth century diving-bells were invented in which some crude observations were made. Dr. Colladon was lowered 30 feet for purely scientific purposes. He noted at once an oppressive sensation about his ears, due to the forcing inward of the tympanum. The pain was easily relieved by swallowing. The physician writes that as he went down he was "in a state of excitement as if he had drunk some spirituous liquors," there being a sensation of pressure about the head. On returning to the surface it was different. It seemed, he said, as if his head was becoming very large, and his skull was on the point of disarticulating.

So much for the diving-bell, an invention which is now seldom used, except for problems in physics. It gave rise, however, to an elongated modification into which air was forced until the water was entirely expelled; and this machine is the modern caisson. Caissons are constantly used in mining and bridge-building, and make the study of the physiology of compression a matter of great practical importance. As shown in the diagram a caisson is composed of a series of short metal tubes, securely bolted together, the number of which is increased as the pile descends. The interior of the tube is filled with cement, except for a passage-way from top to bottom, and a space below for the workmen. After the excavation is finished, these spaces also are filled with cement. At the top of the apparatus is the connection with the air blast which forces air into the shaft so that it escapes in bubbles from below. To enter the tube, the workman opens the door, *a*, enters the chamber and shuts the door behind him. By turning a stop-cock on the inner wall compressed air is made to pass from the shaft into the chamber, until the pressure on the two sides of the door, *b*, is equal. The door is then opened and the descent made. On leaving the shaft the workman uses the door, *c*, which opens into a chamber of compressed air. After closing the door, he opens a stop-cock connecting with the air outside and the pressure returns to the normal. In this room, then, the release from pressure or "decompression" takes place, and during the process many accidents have occurred. The pressure sustained in the caissons is often as high as three or four atmospheres. Workmen on the Eads Bridge at St. Louis labored an hour at a time under a pressure of 4.45 atmospheres.

Now we may consider the effects of a sojourn in this apparatus. First of all is the annoying sensation about the tympanum already described. Occasionally the pressure is great enough to cause partial or complete deafness by rupturing the drum. Then, at a pressure of three atmospheres, there arises an irritation of the skin called the "puces," which is characterized by an unbearable feeling of warmth.

The voice is altered; its pitch becomes higher and it acquires an unnatural nasality. Whistling is impossible, for reasons set forth in a recent number of the "Sitzungsberichte der Gesellschaft für Morphologie und Physiologie."[2]

Respiration is rendered deep, slow, and easy. The pulse-rate is variously affected, if we believe all we read. Pol and Wattelle with others find it diminished, for example, from 70 to 55 per minute. Bucqroy noted a rise of from 76 to 83, and his observations are confirmed by Dr. Bauer, of St. Louis.

Digestion is active, but there is no thirst. The secretions, notably that of saliva, are increased; as also the excretion of urine.[3] Accidents during the stay in compressed air are uncommon, yet some fatal cases are recorded.

Leaving the pits is virtually going into rarefied air. The puces is replaced by a chill. Respiration becomes difficult, the pulse is rapid and hard. Very often there is transient pain in the joints and muscles and sometimes persistent cramps. Another class of accidents affects the nervous system, causing various forms of paralysis or coma. A man may lose consciousness as he enters the open air and die in a few minutes.

Autopsies have revealed three interesting conditions. These are: (1) A congestion of the abdominal viscera, namely, the liver, spleen and kidneys. Pol and Wattelle report two cases of this sort. (2) Emphysematous spots on the lungs and other indications that the blood contained bubbles of gas. This condition was found in two cases by Dr. Gallard. (3) A softening of parts of the spinal cord and brain. Sometimes the medulla only is affected; at others the cord may be nearly fluid for several inches; or the degeneration may be general. The brain in many of these cases is overcharged with blood.

Considerable study has been directed toward finding some means of reducing the number of fatalities, which is very great (for example, twelve among the 352 workmen on the Eads Bridge). Pol and Wattelle declared that too rapid decompression lay at the root of the evil and advised a more gradual release from pressure. Foley, on the contrary, ordered the men to hasten into normal air when they felt the chill coming on. Eads believed that the length of time spent in the pits was the main factor, since visitors who were in the caissons for short times, never suffered as did the workmen, although subjected to equally rapid decompression. The disagreement as to the relative injuries from compression and decompression might have been settled by the French courts. An engineer claimed damages for injuries alleged to have resulted from a too sudden release from pressure. The scientists were eager for the discussion, but the judges, probably suspecting what was in store for them, ruled the case out.

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[1] Read in the Physiological Conference of the Harvard Medical School, May, 1898.

[2] Von Liebeg, München, 1897, vol. i, 13.

[3] Barella to the contrary.

Gentler pressures than those of the caissons are used in the "aëro-therapeutic establishments." It was found that persons having obstructed air passages were relieved on entering the pits, and this suggested a new treatment which became very popular. In the thirties many of the large cities of Europe had these chambers of air at a pressure of between one and two atmospheres in which the sick spent hours at a time. In 1863 the enthusiastic M. Caffe writes: "We shall be in possession of an ingenious therapeutic agent to relieve asthmatic and catarrhal old fellows, and to spirit away the agonizing pain of those afflicted with angina pectoris, who become blue and faint in the pursuit of air which escapes them. We may hope to save the victims of croup. Compression will flatten the false membranes and allow free passage of air. Perhaps even typhus, glanders, and similar diseases will be rendered harmless by compressed air which oxidizes the blood so readily." At the present time, however, physicians hesitate to use the apparatus for fear that it may do more harm than good.

Thus far we have reviewed the claims of the physiology of compressed air for investigation, and described the apparatus used and the results obtained from the experiments performed whenever a great bridge is built. Now we are to consider the work of the physiologist. Experiments have been made on all sorts of organisms, from yeast plants and flies to soprano singers and violinists. The results have been made to account for facts ranging from the laziness of Mexicans to the cold of the glacial epoch. We must confine ourselves, however, to the effects on respiration, gas absorption and, finally, on the circulation.

First, as to the number of respirations per minute. Cyon, experimenting on dogs, found a slow decrease until a pressure of two atmospheres was reached, beyond which the fall was rapid. Panum also found the number decreased under various conditions:

Tranquil respiration	from 14.2 to 13.5
As deep and rapid as possible . . .	from 12.7 to 6.4
As slow and light as possible . . .	from 5.8 to 4.2

Vivenot shows the effects of continued subjection to compression. He spent two hours a day for three months in a medical chamber, and his rate fell from 18 per minute to 3.4 when in the chamber, or 4.5 in normal air. The respiratory rate is therefore decreased in compressed air.[4]

The ratio between the time of inspiration and that of expiration is affected. Vivenot considered that the greater atmospheric pressure distended the lungs, making the action of the expiratory muscles difficult as they met an increased resistance. Inspiration would be easy and rapid, expiration difficult and slow. These relations he illustrated by a diagram.

Panum made a direct tracing showing that the relations were unchanged. Since the increased pressure acts both inside and outside of the chest walls its effects might be neutralized. But Liebig confirmed Vivenot's observation by recording the time of inspiration and expiration in two extreme cases with these results:

	Pressure	720 mm.	1040 mm.
Case A.	Time of inspiration . .	4.48 sec.	4.19 sec.
	" expiration . .	8.74 "	11.59 "
	" complete respir.	13.22 "	15.78 "
Case B.	Time of inspiration . .	1.54 "	1.49 "
	" expiration . .	2.25 "	2 72 "
	" complete respir.	3.79 "	4.21 "

The time of inspiration is decreased, that of expiration increased, and the time for a complete respiratory movement is increased in compressed air.

The lung capacity is altered by increased pressure. Panum's experiment serves to bring out clearly the essential conditions. He took a flask with a membranous floor representing the abdominal wall, filled it with water, corresponding with the body fluids, placed in it a closed bladder of air for the intestine, and another bladder connecting by a tube with the outer air for the lungs and trachea. The whole was corked and placed in compressed air. The abdominal wall was flattened or pressed inward, the intestines compressed, and the lungs expanded in all directions. As a matter of fact, the pressure on the abdominal side of the diaphragm is great enough to prevent any elongation of the lungs. As Pravaz states, there are two effects on the lung capacity: (1) The lungs are not ordinarily distended to their full extent. Compressed air by increasing the force which struggles against the contractility of the pulmonary tissue enlarges the lungs. (2) The compression of the abdomen adds to the resistance encountered by the diaphragm. The vertical diameter of the chest may even be reduced, but this is more than made up for by the antero-posterior dilatation. Vivenot found by using a spirometer, that the lung capacity in his machine was increased 3.3 per cent. After his three months' treatment his own lung capacity was increased by 24 per cent. or 743 c. c., and the circumference of his chest 1.5 cms. An increase persisted months after the treatment was stopped.

Under compression then, more air passes through the lungs in a single respiration than is normal, for not only would an equal volume of compressed air contain more air, but the volume is increased. It passes through in fewer but deeper respirations in which the inspiration is rapid and the expiration slow.

We may now consider the absorption of gases by the blood; first O and the formation of CO_2, and then N. The absorption of a gas by a liquid depends on three factors, the temperature, the relative solubility of the gas and the pressure. Only one of these is altered in compressed air; the pressure is increased.

Oxygen is not ordinarily absorbed, but enters into chemical combination with hemoglobin, nine-tenths or fourteen-fifteenths of which is saturated in normal air. In compressed all the hemoglobin may be saturated and some oxygen may be dissolved in the plasma. Bert's experiments led him to believe that such was the case. His analyses gave the following results, the amount of oxygen absorbed under normal pressure being placed at 20 vols.:

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[4] Sandahl found an *increase* in rate in 11 persons out of 75. Speck obtained an increase. Liebig a decrease. Average 16.5–15.9.

Atmospheres.	Oxygen.
1	20
2	20.9
3	21.6
5	22.7
7	23.1
10	23.4

Speck also finds an increase in the oxygen absorbed. The effects of the additional oxygen are not apparent. It has been called upon to explain the increased appetite and secretions. The red color of the venous blood in persons who died from working in caissons was noticed by the early observers.[5] The dissolved oxygen was supposed to replenish the corpuscles as they supplied the tissues. This is doubted by later investigators, who have looked in vain for the red venous blood. Bert alone made much of the excess of oxygen, stating that when increased in the blood by one-third of its volume it became poisonous; that the tissues except the red corpuscles were anaërobic. This, of course, is abundantly disproved by experiments in which animals live in pure oxygen.

As to the CO_2 expired there is difference of opinion. Vivenot found that he exhaled in one hour 54.1 grs. of CO_2 in normal air, 60.3 grs. under compression. Panum ridiculed these figures as absurdly large and surprised himself by reaching a similar conclusion with smaller figures. He concludes that the CO_2 exhalation is relatively and absolutely larger in compressed air. Liebig found it decreased. Bert's analyses showed no definite changes.

The nitrogen analyses are more satisfactory. Its absorption increases with the pressure as shown by Bert:

Atmospheres.	Volume.
1	2.2
2	3
3	3.9
5	6
7	7
10	9.4

This has not been contradicted.

We have then in the blood an increase of gases in solution placed there by mechanical laws. The liberation of these by decompression is supposed by many to be the primary cause of accidents. Mericourt long ago said that a man in compressed air is in the position of a bottle of water being charged with CO_2 as in making soda water. Release the pressure and the gases tend to effervesce, death ensuing as when air is admitted directly to the circulation. The hypothesis is supported by many experiments done by Heller, Mager and Schrötter. They found in some animals killed by compressed air that the blood-vessels of the mesenteries and brain were filled with bubbles of gas. They conclude that after sudden decompression, free gas can be detected in the circulating blood. This gas is almost exclusively nitrogen. If the stay in compressed air is long enough and decompression sufficiently rapid, there arise disturbances of the heart and lungs which may be fatal, also disturbances of the nervous system, especially the spinal cord. All these effects are due to the presence of gas in the blood-vessels. A speedy return to compressed air affords relief in many cases.

Finally we come to consider the effects on the circulation. As to the pulse-rate, the observations already quoted disagree. It may be added that Vivenot found an increase of 4.7 beats per minute; Sandahl an average decrease of 9.9 beats. Since there is little chance for faulty methods, it may be presumed to vary.

When rabbits were placed in compressed air, it was noticed that the ears became pale and the blood-vessels of the eyes disappeared. This observation is well established. However, Poiseuille by placing young rats and salamanders under his microscope and then compressing the air about them saw no alteration in the circulation. Heller, Mager and Schrötter after many experiments found no congestions. Animals trepanned and those which were not, placed side by side in compressed air showed a similar distribution of blood in the brain. In spite of these negative results, the fact remains that in rabbits the blood very plainly withdraws from the periphery. This may be due to one of two causes. First, a general vasomotor activity. Second, the purely mechanical effects of compression. In the first case there would be a general rise of tension; in the second there might be a rise, or there might not if the effects of constriction of some vessels were balanced by stretching of others.

Cyon in a careful experiment on a rabbit under a pressure of two atmospheres, observed that the cutaneous vessels were emptied, but as shown by a manometer, there was no general rise in the blood tension. The effects are therefore not due to the vasomotors. Bert, however, found a "notable increase" in the arterial pressure. Vivenot drew some curves with a sphygmograph connected with the radial artery. The tension rose with the compression; the pulse curve lost its notches and flattened into a nearly straight line.

Martin's experiments go further. He found that when the compressed air was applied to the lungs only, there was a temporary fall in the pressure. The pulmonary capillaries were stretched and an increased flow to the lungs caused the diminution. When compressed air was applied only to the surface of the body there was an increase of pressure, probably due to the forcing of blood from the cutaneous vessels. These experiments all indicate that equilibrium in the blood pressure is upset by compression. Blood is driven from the surface, it goes to the brain causing paralysis, or to the deep-seated viscera causing fatal congestions. Decompression would seem to relieve these conditions, but one writer suggests that the sudden expansion of the viscera drives out the blood stored in their vessels to the cord and brain; hence the results of a sudden release from pressure.

Two hypotheses to account for caisson accidents have been presented. One is based on the increased absorption of gases by the blood; the other on the mechanical disturbances of the circulation. They are not contradictory. *A priori* reasoning, experiments on living animals, and autopsies revealing sometimes emphysematous spots, sometimes congestions, support both. But the investigators have not taken this view of the matter. Their earnestness in supporting one hypothesis has been proportionate to their vigor in denouncing the other. The gas-bubble theory, affording such a ready explanation of decompression accidents, has much in its favor. Furthermore, we do not find accidents while the air is being compressed, when, according to the other hypothesis, we should expect a rush of blood to the head. For these reasons we are tempted to ignore the well-established disturbances of the circulation, a course not justified at present. We must wait for future investigators to reconcile their predecessors.

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[5] Pol and Wattelle and Francois.

BIBLIOGRAPHY.

Jourdanet. Influence de la pression, etc., Paris. Short review in Nature, xii, p. 472, 1875.
Drosdoff. Ctbl. f. d. med. Wiss., pp. 65, 773–785, 1875.
Bert. La pression barometrique, Paris, 1878.
Speck. Ctbl. f. d. med. Wiss., p. 135, 1878.
Liebig. Arch. f. Physiol. (du Bois-Reymond), p. 284, 1879. Ctbl. f. d. med. Wiss., p. 899, 1879.
Cyon. Arch. f. Physiol., Supplementband, p. 212, 1883.
Phillipon. Comptes rendus, cxvi, p. 1154, 1893.
Martin. Physiological Papers, p. 173, 1895.
Loewy. Unters. über die Respir. u. Circul., etc., Berlin, 1895.
Heller, Mager, Schrötter. Pflüger's Archiv, lxvii, p. 114. Ctbl. f. d. med. Wiss., p. 787, 1897.
Climate of Low Areas, Science, xii, p. 210.

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FORMALDEHYDE GAS AS A DISINFECTANT.[1]

BY DAVID D. BROUGH, M.D., BOSTON.

Since the discovery of the germicidal powers of formaldehyde gas this agent has been the subject of rigorous investigation by a large number of observers, both in this country and abroad. The most improved methods of scientific investigation have been applied to it. Many things are now known concerning the gas that are absolutely certain, while many of the extravagant claims that were first promulgated have been proved to be based on insufficient evidence. There are some questions that have not yet been satisfactorily answered, and more experience with the use of the gas will further enlighten us. In general there has been a harmony in the results of all observers while there may be a wide divergence in some of the minor points.

It is simply my desire to present, as far as I am able, the value and limitations of this agent in practical disinfection, that have been drawn from practical experience during the year and a half in which formaldehyde has been used by the Board of Health of the City of Boston. I think that the Board of Health of this city has been among the first, if not the first, to introduce this gas in the routine work of municipal disinfection.

All the experiments that I have conducted have been carried on in the various dwellings of the city which have required disinfection on account of having contained some case of infectious disease. All the tests were made under conditions as they actually occur. Having been made in the various houses, the results may differ in some respects from those performed in laboratories or especially constructed chambers.

The gas was discovered by Van Hoffman in 1868. He found that the vapor of wood alcohol coming in contact with finely divided platinum gave rise to a product to which the name of formaldehyde was given. It is a product of the oxidation of methyl or wood alcohol. The oxidation results in the removal of the hydrogen from the alcoholic vapor forming formaldehyde. Its chemical formula is CH_2O. The gas can be prepared by bringing the vapor of wood alcohol properly mixed with air into contact with a metallic powder heated to dull redness. The contact of the alcoholic vapor with the metal continues to keep the metal heated. The substances most used are platinum, copper, iron-oxides and coke. The most active substance is spongy platinum or platinum black.

The gas is colorless, has a penetrating pungent odor, and is extremely irritating to the mucous membrane of the eyes, nose and throat. Its specific gravity is about the same as air. It renders gelatine insoluble and coagulates albumin when in the solid form. When added to a solution of serum albumin it prevents coagulation by heat. Pieces of meat exposed to the gas have been preserved for a long period of time.

The odor of formaldehyde is easily dissipated by the evaporation of ammonia. After disinfection the odor of formaldehyde can be neutralized by injecting a little ammonia into the room. By cooling, the gas can be mixed with water up to the proportion of 40 per cent. by weight of the gas. It is in this saturated aqueous solution that the gas appears in commerce under the name of formalin.

When the aqueous solution is allowed to evaporate in the air it becomes concentrated, forming a substance known as para-formaldehyde, which is a union of two molecules o formaldehyde gas, and when further concentration goes on a white amorphous powder, known as trioxymethylene, is formed. This latter form is supposed to be composed of the union of three molecules of the gas. From both these polymerized forms the gas can be derived by the application of heat. The antiseptic and germicidal powers were, it is said, first noted by Trllat, of Paris, in 1888, and in 1891 an account of these properties was published by him.

The disinfection of rooms is performed by formaldehyde in the gaseous state. This gas can be obtained in several ways:

(1) By means of lamps directly from wood alcohol.
(2) From the solid form.
(3) From the solutions of formaldehyde.

But from whatever form the formaldehyde is obtained, the results are derived from the gas that is generated. The various preparations in which formaldehyde appears, and the different kinds of apparatus, are but convenient methods of utilizing the gas.

DIRECT GENERATION OF THE GAS.

Probably one of the first lamps in this country for the generation of the gas on a scale sufficient for general disinfection, was devised by Professor Robinson of Bowdoin College. There are many modifications of this idea on the market.

In general, the principle is to bring the vapor of wood alcohol properly mixed with air in contact with platinized asbestos which is thoroughly heated. This method has been tried in this city and in others but has now been generally discarded. The objections to this process were the dangers of fire, the difficulty of knowing whether the apparatus was working properly when shut up in a room, and the difficulty of bringing the vapor of the wood alcohol directly in contact with the platinized asbestos disk. After being used for some weeks in this city it was given up. While good results have been obtained from experiments with this method, it was found impracticable for municipal disinfection.

With the generation of the gas from the combustion of paraform pastilles, I have had no personal experience. The excessive cost of this method would be almost prohibitory for its use on the scale demanded by municipal disinfection. In the hands of those who have used it, excellent results have been obtained. The conclusions were about the same as have been obtained by deriving the gas from the aqueous solutions. It is, however, a neat and simple method of obtaining the gas.

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[1] Read before the Massachusetts Medical Society, June 8, 1898, and recommended for publication by the Society.

The gas can be obtained readily from the 40 per cent. aqueous solution. Disinfection in small closed spaces can be accomplished by allowing the solution to evaporate in open vessels or pans, but only a small portion of the total gas is given off. This is due to the fact that polymerization occurs and the solution becomes concentrated into the solid form and little gas is given off. In larger rooms this method would be wasteful and unsatisfactory. In laboratory tests fair results have been obtained.

Dr. Kinyoun of the Marine-Hospital Service could not obtain satisfactory results in disinfecting rooms by saturating clothes with formalin and allowing the solution to evaporate in the room. In some late experiments by the Chicago Board of Health it is claimed that sheets, wet with the solution, suspended in the room and allowed to dry, gave as good results as other methods. The inconvenience of this process in dwelling-house disinfection has prevented any tests being made in this way. Nor can disinfection be accomplished by mixing formalin and water and simply heating the mixture in a closed vessel not under pressure. In the tests of Dr. Harrington of Boston at the City Hospital the results were unsatisfactory and no disinfection was accomplished. A large amount of the formalin became polymerized at the bottom of the vessel. It is necessary, therefore, owing to the fact that polymerization occurs, that some form of "regenerator" should be used, of which there are a number on the market. We have used two forms. In one the aqueous solution is heated in a closed cylinder until a pressure of three atmospheres is attained and then the gas is allowed to flow through a tube and pipe, which is passed through the keyhole of the door of the room to be disinfected. In the other form the solution passes from the cylinder into a copper tube which is coiled over a lamp, and then becoming superheated the gas passes through the tube and pipe through the keyhole of the door. The first form has been preferred, as it discharges a very much larger amount of gas in the same period of time, and is not so liable to get out of order. The second form, however, obviates any danger of explosion which may possibly occur in the first method. It has never been found that with care, there was any danger of explosion. These machines are kept outside of the rooms and their working can be observed by the operator. We have found no benefit whatever to result from mixing the formalin with calcium chloride over that of the simple 40 per cent. aqueous solution. Other observers agree in this. It must be recollected that the disinfection is accomplished by the gas, and not by the apparatus, as some manufacturers would have us believe. That form of apparatus is best which will conveniently deliver the largest amount of gas in the shortest period of time. Through the courtesy of Dr. Ernst I was enabled to perform this bacteriological work in the laboratory of the Harvard Medical School.

The tests were made of silk threads and gauze strips which were saturated with bacilli from twenty-four to forty-eight hours' bouillon cultures. Most of them were placed in the rooms in the dried condition, as it was desired to make the tests correspond as nearly as possible with the conditions under which we would find the organisms in infected houses. Wet cultures were also used in many of the experiments. All the ordinary pathogenic organisms were used, but the diphtheria bacillus of a high toxin-producing power, and from fresh throat cultures, was regularly employed, as this is the known organism for which disinfection is carried on. Some tests were made with a non-pathogenic spore-bearing organism, and cultures were made from the dust of the rooms before and after disinfection. Freshly inoculated serum tubes of the various organisms were placed in the rooms, both open and plugged. Control cultures were made in every case, and in these growth was obtained in twenty-four hours.

The conclusions were drawn from the seventy-two hours' result in the incubator. The threads were placed in the nutrient media in the rooms directly after the disinfection with sterilized forceps.

Bouillon and Löffler blood-serum mixture, in tubes, were the media employed. The bouillon shows whether the disinfection was complete. On blood serum the amount of disinfection and the inhibitory effect of the gas could be more approximately judged by the number of colonies; microscopic examination was made in every case to determine the nature of the growths.

The general results were obtained from thirty-six houses, in each of which from six to twenty tests were made. The dwellings in which the tests were made were scattered throughout the city. The houses were of every description and variety, although most were among the poorer classes. The conditions were not favorable for obtaining the very best results, and the conclusions must certainly give a more approximate idea of the value of the gas than those carried on in absolutely tight rooms or under more favorable conditions. Nothing was removed from any of the rooms. The furniture, upholstery, bedding, wearing apparel and all other articles were left in their places. Beyond spreading out the clothes and bedding, opening doors of cupboards and closets, opening drawers so that all surfaces might be exposed as much as possible to the gas, nothing was done in the way of preparation.

The crevices about the windows, cracks of doors, fissures in walls, loose flues and other places through which the gas could escape, were closed by pasting them with narrow strips of gummed paper. This is made for the Board of Health in rolls of about one inch wide. After closing the door and pasting the cracks, the gas was introduced through the keyhole.

The gas enters into the room in practically a dry condition. In repeated experiments no special difference could be noticed in the amount of moisture in the rooms before and after the introduction of the gas, as noted by the readings of the wet and dry bulb thermometers.

CONCLUSION FOR SURFACE DISINFECTION.

Whenever the gas in sufficient amount comes in contact with pathogenic organisms, they are invariably killed.

Spore-bearing organisms are killed with more difficulty than those that are not spore-bearing, and the results with non-pathogenic are not so constant as with pathogenic organisms. The position in the room makes no difference. Those placed close to the ceiling, those on the floor, and those at points midway between these, were equally sterilized. Threads stretched from the ceiling to the floor were completely sterilized. Currents of air near the test objects interfere with the action of the gas. In the experiments of Robinson and Bryant, of Bowdoin College and Dr. E. M. Parks, of New York, threads that were placed on the window sills or near cracks of doors were frequently found not to be sterilized.

The gas apparently acts equally well on both wet and dry cultures. This was my experience with silk threads and squares of gauze. The same results were found by Parks and Robinson and Bryant. Dr. Harrington, of Boston, in his experiments at the City Hospital, found that organisms on dry surgical dressings were completely killed, while with wet dressings only those on the surface were destroyed. Organisms growing in bouillon exposed in Petri dishes could not be killed.

The dust of the room was sometimes sterilized, sometimes not. A spore-bearing bacillus was frequently found not acted upon by the gas. The number of colonies in a measured quantity of dust was invariably found much larger before than after the disinfection. Generally after exposure only a few colonies were found.

Dr. McCollom, of Boston, in his experiments found that the gas acted as well on the discharges from nasal diphtheria and diptheritic membrane as on cultures grown on artificial media, when they were directly exposed to the action of the gas.

PENETRATION.

In ordinary disinfection these tests would prove that the gas has very little penetrating power. It was the invariable result that cultures, whether wet or dry, when placed between mattresses, between pillows, between the folds of mattresses, in the centre of pillows, between the leaves of books and between solid objects, were not killed. When the organisms were wrapped up firmly in layers of blankets or heavy articles they were not rendered sterile; placed in pockets of coats and trousers, dresses, or wrapped up with light articles as sheets, handkerchiefs, etc., the organisms were sometimes killed and sometimes not. When placed in drawers left open slightly, they were killed; when the drawers were closed they were sometimes killed and sometimes not. When the threads were placed in the bottom of test-tubes, and these tubes were left open in the vertical position and exposed to the gas, growth was frequently found. When these same tubes were placed in the horizontal position, and the threads placed near the mouth, the organisms were killed. Freshly inoculated serum tubes, with the cotton plugs in, would always yield a growth. The same tubes with plugs out only gave slight growth at the lower portion of the serum slant. The opinion of all recent observers is that the gas is a poor penetrating agent under ordinary conditions. This is the conclusion of Dr. Doty, of New York, Robinson and Bryant, Dr. Wilson, of Brooklyn, Dr. E. M. Parks, of New York, Drs. Harrington and McCollom, of Boston, and others.

In experiments with absolutely air-tight receptacles and bags and in the use of the gas by the vacuum method, with which I have had no personal experience, the penetrative power of the gas was found much greater.

Dr. Doty, of New York, has found that penetration is much increased with a vacuum. Dr. Wilson, of Brooklyn, was able *in vacuo* to kill organisms, even anthrax spores, in mattresses or wrapped in heavy blankets. Dr. Wyatt Johnson, of Montreal, has been able to secure complete sterilization *in vacuo* of objects in tightly rolled blankets. Robinson and Bryant, of Bowdoin, found with an excess of gas in air-tight bags, penetration could be secured through rather bulky articles. Other observers found similar results. Dr. Harrington says that "In presence of moisture the penetrating power is practically *nil.*"

For penetration under ordinary conditions the gas has no especial value.

EXPOSURE.

In my own tests I have found no difference in results from exposures of five, six, seven hours and upwards. As good results were obtained in the shorter period of time as in the longer. If the results with a certain amount of gas were not satisfactory with a short exposure they never were with a longer. It would seem that the work of the gas was accomplished quickly.

Dr. Doty thinks an exposure of six hours is sufficient.

Dr. E. H. Wilson says: "It is preferable to allow the gas to remain as long as possible, but from three to four hours is sufficient for good disinfection." In surface disinfection he was able to kill the ordinary pathogenic organisms in four hours.

Dr. Parks, of New York, says: "The time of exposure not to be less than two hours, better to give four to six hours."

Dr. Harrington has found that "the organisms will be killed in from one-half to three hours, varying with the amount of the gas used." Bryant and Robinson state that "the room should be closed from ten to twelve hours."

Dr. J. J. Kinyoun says: "The length of exposure is secondary to the amount of the gas, and a larger amount will give better results than small, even prolonging the length." He further states that fully twelve hours' exposure should be given. I think that most later observers in the main agree that as good results are accomplished in short exposure as in long.

INFLUENCE OF TEMPERATURE.

Within the range of temperature, such as occurs in ordinary disinfection, the gas seems to act perfectly well. With a low temperature, below 35° F., my results were not so satisfactory, even using large amounts, as with a higher temperature. It would seem that very low temperatures interfere with the action of the gas. Other observers have found that the gas is more active at a fairly high temperature. In general, the majority of observers have found equally good results between 50° and 110° F.

What is the amount of formalin necessary to generate gas sufficient to disinfect 1,000 cubic feet in ordinary rooms?

On this question there is a very great variance amongst different observers, even when using the same form of regenerator. Some have obtained complete results with very small amounts, while others using small amounts have claimed that formaldehyde was useless for disinfection. Most of the poor results seem to have been obtained from using too small amounts of the gas. With nearly air-tight rooms, or rooms where there is little absorbent material, we can get much better results with small amounts. In ordinary dwellings, where there is always considerable leakage, and where there is a great amount of bedding, upholstery, clothing and plastering which must necessarily absorb a large amount of the gas, very much larger quantities have been found necessary. Generally with small amounts of from 4 to 12 ounces to 1,000 cubic feet, I could not get very good results; occasionally they would be good. But on increasing the amount the results were much better To get satisfactory results in house disinfection, I agree with Dr. Wyatt Johnson of Montreal that at the very least one pound of formalin to 1,000 cubic feet should be used, and it would be better to use even considerably more. In this city it is the custom to use nearly a quart to the 1,000 cubic feet, and the varying and inconstant results with small amounts have not been repeated.

INFLUENCE ON HOUSEHOLD GOODS.

In our experience in this city there has never been any injurious influence exerted by the gas upon any article of household furniture, clothing, bedding, upholstery, carpets, or on any ornaments, pictures, gilding, or on wall-papers. Further, no person has complained of the gas causing any injury to his goods, and this after the use of formaldehyde in many hundreds of houses in all grades of society.

Dr. Kinyoun, in his experiments with 225 samples of wool, cotton, textile fabrics, hair, fur and leather, found them unchanged by the gas. Colors are not affected with the exception of the aniline color fuchsine which is changed to purple; all other observers practically agree in these results.

INFLUENCE ON ANIMAL LIFE.

Our opportunities for observation in this line have been limited. Dogs and cats which have been left in rooms were found killed. Flies were invariably found dead. Bed-bugs, which were exposed to the direct action of the gas, were likewise killed.

Drs. Harrington and McCollom both found that the gas was fatal to rabbits. The early claims of the innocuousness of the gas to all animal life have not been substantiated.

IN CONCLUSION.

I believe we have in formaldehyde the best practical gaseous surface disinfectant known. For dwelling-house disinfection it is unsurpassed. It is easy of application, and does no injury to goods. It is not ideal, its use being limited to surface disinfection. Its penetrative powers under ordinary conditions are so slight as to be almost valueless. Good results are best obtained by using a large body of gas, and having the room as tightly sealed as possible. Length of exposure and the influence of temperature are secondary to the amount used.

Under these conditions disinfection may be regarded as complete after the use of formaldehyde.

Superficial Area of the Human Body. — At a recent meeting of the Société de Biologie of Paris, MM. Bergonie and Sigalas stated that as a result of recent investigations they had found the superficial area of the human body to be 16,206 square decimetres (17.1 square feet) about one-tenth higher than the figures of Bouchard.

Clinical Department.

A CASE OF TETANUS, TREATED WITH LARGE DOSES OF THE ANTITETANIC SERUM. RECOVERY.

BY S. J. MIXTER, M.D., BOSTON,
Visiting Surgeon to Massachusetts General Hospital; Instructor in Clinical Surgery, Harvard Medical School.

[The good result obtained in this case is largely due to three persons, to whom I wish to extend my heartiest thanks. They are Dr. F. B. Lund, whose article read before the Massachusetts Medical Society is the most thorough and up-to-date *résumé* of the subject, and who kindly saw the boy with us; Prof. Theobald Smith who furnished the serum, and Dr. Seabury Allen, at that time my senior house surgeon, to whose constant care and unfailing interest more than anything else (except the serum) is due the cure. — S. J. Mixter, M.D.]

E. J. C., a boy of eleven years, was brought to the accident-room of the Massachusetts General Hospital, June 22, 1898, with the following history:

Ten days ago while walking in the woods he cut his right foot on a piece of broken bottle. Free bleeding ensued and he went to a physician immediately, who etherized him and dressed the wound. Eight days afterwards he complained of a sharp pain across the shoulders and later in the day of a similar pain in sides of neck, preventing chewing, but not swallowing. Forty-eight hours after this he entered the hospital.

Examination. — Normally developed, lean, anemic; heart and lungs negative; pulse firm and hard; reflexes normal; head retracted; back slightly arched; abdomen, jaw and back muscles set; able to open mouth one-half inch; no glandular enlargement; granulating septic semicircular wound on ball of right foot one and one-half inches long; conscious and rational; speaks clearly. While being examined, patient had two tetanic spasms with risus sardonicus and slight opisthotonos. After each spasm, pulse rose forty beats and respiration twenty.

Patient was put to bed and given 80 c. c of the State Board antitetanic serum under the skin of the thigh without noticeable effect, except considerable pain from distention of the skin. Spasms with opisthotonos of a mild type every twenty minutes.

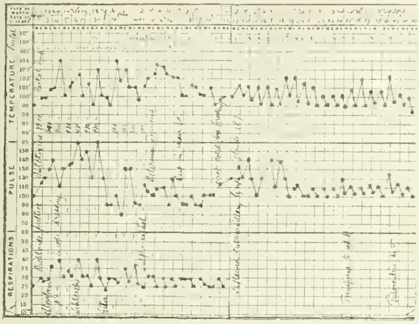
June 23d. Urine, color normal; acid; specific gravity 1.022; no albumin; no sugar. White blood-count 14,000. Severe convulsions attended with great pain every twenty minutes; muscles not relaxing entirely between attacks. Patient drinks large quantities of liquid nourishment through soft rubber tube; 540 c. c. of serum injected deep into thigh muscles without effect (divided doses). Primary chloroform anesthesia obtained on account of the pain of distention. A few drops of chloroform inhaled at beginning of each spasm to lessen severity. Special nurses.

June 24th. Only two severe spasms all morning, 100 c. c. of Gibier's serum infused into median basilic vein without disturbance. In the afternoon an infusion of 250 c. c. (State Board serum) was followed in half an hour by six very severe convulsions with diaphragmatic and pharyngeal spasms, extreme cyanosis and absence of pulse from wrists. By the quick use of chloroform and hypodermics of cocaine and strychnia, the patient came around all right. Temperature arose from 99.9° to 104.2°; pulse rose 40 beats to 140. As the infusion had been given similarly to the previous ones it was thought that the limit of tolerance for the antitoxin had been reached. Complained of headache after the infusion. Pulse weak all the evening. After four severe spasms nearly as bad as above, between 8.15 and 8.35 o'clock P. M., condition improved greatly, there being nothing but the usual stiffness and muscular twitchings during the night.

June 25th. White blood-count 15,500. At 5 A. M. severe spasms again appeared; 240 c. c. of the regular serum given at 10.30 A. M. and repeated at 11.30 P. M. produced no bad results. Five severe spasms between 9.40 and 11.30 P. M. and eight between 12.20 and 1.20 A. M. (26th) and every three and five minutes between 2.20 and 3.45 A. M.

June 26th. Four hundred and eighty c. c. of the serum this morning followed by slight weakening of pulse and rise of 20 beats.

June 27th. Schleich's No. 3 anesthetic substituted for chloroform, as latter depressed pulse dangerously. Delirious all day; morphia sulphate one-quarter grain subcutaneously, repeated three times during the day, gave two hours' sleep in all; 480 c. c. serum at 8 P. M. caused in one hour a temperature of 106° and a pulse of 160, but no collapse. It was thought that the serum had been heated a little too much. Only three severe spasms all night.



Hemorrhagic macular eruption all over shoulders and chest which itches severely. Blood-count, reds 3,300,000.

June 28th. At 4.30 P. M., 480 c c. serum infused, and half an hour afterwards tremendous contractions appeared requiring two persons to hold patient in bed. As before, extreme collapse and cyanosis were overcome by the use of ether and hypodermics. Temperature rose from 99° to 103° and pulse 30 beats to 160. Full anesthesia for half an hour gave complete muscular relaxation. Half an hour later patient was conscious and in good condition. Ether substituted for Schleich's mixture.

June 29th. In good shape this morning. Had several hours of natural sleep, with body resting on heels and shoulders.

Large areas of subcutaneous hemorrhage over limbs and trunk. No infusion to-day, it being thought that limit of tolerance had again been reached; also pulse and temperature were the best for the past five days.

Urine hyperacid; specific gravity 1.026; albumin one-eighth; no sugar; sediment; free renal (?) epithelium. Considerable free blood, and blood on casts.

June 30th. Exhaustion from lack of sleep; 100 c. c. of serum caused rise in temperature from 100.5° to 104° and in pulse of 20 beats to 106. Entire muscular relaxation between spasms for first time. Reflexes absent.

July 1st. Marked hemorrhagic diathesis; bleeding from nose, gums, scratch marks, infusion-incisions, etc. One hundred c. c. of the serum caused rise in temperature of 2° and of 40 beats in pulse. Blood-count, reds 3,500,000.

July 2d. Only one severe spasm last night. This morning spasms of a mild character came every hour. No ether since last night, the patient cries for it and feigns contractions. One hundred c. c. of serum has no effect.

July 3d. Only five genuine spasms to-day. Aromatic spirits ammonia on cone partially satisfied craving for ether. One hundred c. c. given with local (cocaine) anesthesia. Patient watched whole process and said he felt no change at all.

July 4th. No sleep all night, though there were no convulsions. All muscles relaxed except those of the jaw. Patient in howling delirium, trying to get out of bed, sees things in his room which do not exist. Temperature 103°, pulse 110. Is evidently in delirium tremens from ether. Inhales violently through mosquito netting or towel, or whatever is held over nose resembling an ether cone. Quieted by morphia sulphate, one-fourth grain, repeated twice.

July 5th. Violent and sleepless all night, except for an occasional half-hour's quiet following a whiff of Schleich's anesthetic. One slight tetanic spasm last night.

July 6th. White, blood-count 6,100. Delirium tremens much less violent to-day.

July 7th. Quiet and sleeping all last night. Special nurses omitted. Out on veranda.

July 13th. Inflammation of lower submaxillary lymph glands from ulcers on tongue where latter has been bitten.

July 18th. Jaws entirely relaxed and mouth opens normally for first time.

July 30th. Tuberculin injections gave no reaction.

July 31st. Patient is slowly recuperating and it is expected that he will be able to go home in about a week.

Conclusions. — The following points suggest themselves: The case was in no sense one of chronic tetanus; all others occurring at the Massachusetts Hospital that have approached this in severity have died. As the treatment varied from that of other cases only in the large doses of antitoxin given, it seems probable that this was responsible for the recovery.

Since the experiments on animals show that the autitoxic serum has little or no power over the disease when it has become well established, it is important to begin the dosing at the earliest possible moment. When injected, the serum should be heated to about 1° F. above the rectal temperature; if more than this, the body temperature will rise; if less the heart will be slowed and collapse may occur.

The best way to administer the serum is by intravenous infusion. Hypodermic injection is slow and painful, and it is not absorbed if given by the mouth or rectum.

The physiologists urge as an objection to the transfusion of a large amount of animal serum, the danger of thrombosis and embolism, although in this case these accidents did not occur. There did seem, however, to be some danger from overloading the heart, from the variation in temperature between that of the body and that of the serum, and also from the anemia and hemorrhagic tendency consequent to the injection of so large a quantity. (In all this patient was given 3,400 c. c., averaging about 285 c. c. daily.) It is evident that a more highly concentrated serum would obviate these difficulties. The dosage of serum in this case had to be regulated on the supposition that the strength was one unit to the cubic centimetre, which was the actual strength at the time it was last estimated by Dr. Smith.

Paraldehyde, twenty minims every hour and bromide of sodium twenty grains every two hours, were valueless. Morphine sulphate, one-fourth grain hypodermically every three hours, caused no diminution in the number or severity of the spasms, but did give rest and sleep between them.

Chloroform and Schleich's anasthetic were too depressing for a heart already overtaxed. Ether alone was safe.

This case is probably the first one in this country, at least it is the first one thus far reported, in which an attempt was made to give 500 units, the amount advised by Behring at one dose, and to inject it directly into the blood stream. The success of this case certainly points to the possibility that in the cases reported heretofore the dosage has not been sufficient, and demonstrates the practicability of the intravenous infusion of 500 c. c. of animal serum in cases where it is necessary.

Although the preparation of a stronger serum is much to be desired, it is evident that success can be attained with the present preparation if used in sufficiently large amount.

Medical Progress.

REPORT ON PROGRESS IN THORACIC DISEASES.

BY GEORGE G. SEARS, M.D., BOSTON.

THE PATHOLOGICAL ANATOMY AND ETIOLOGY OF ENDOCARDITIS.[1]

Harbitz publishes the results of three years' pathological and experimental study of endocarditis. He has found that the infectious form is a much commoner affection than is usually thought. Most cases are caused by the ordinary pyogenic bacteria (staphylococci, streptococci and pneumococci), but the course and pathological picture vary with the character of the organism. In one group of cases, where the infecting agent is the staphylococcus, one finds the classical symptoms of pyemia with a rapidly fatal course, while anatomically there are multiple pus foci and often a local focus of pus. In another group, due to the streptococcus and the pneumococcus, the course is more chronic and there is a certain tendency to recovery. Here the point of original infection is rarely found, the infarctions are not infectious and there are no purulent foci. A toxico-infectious influence, is, however, shown in other organs, for example, in the occurrence of nephritis. Endocarditis due to the gonococcus undoubtedly occurs, but it is still questionable if the tubercle bacillus can cause it. Although in certain cases of chronic endocarditis bacteria cannot be found the rest of the picture is so similar to infectious endocarditis that there is little doubt but that they were the cause. The process usually starts as an endothelial necrosis, but it may arise from bacterial emboli in the vessels of the valves.

Although no specific organisms have been found in acute rheumatism a number of these cases must be regarded as due to infection with weakened pyogenic organisms, and the accompanying endocarditis may well be of a toxico-infectious nature. Many of the slight excrescences found in other chronic diseases are also readily explained as the product of a toxic influence leading to a superficial necrosis.

AN EXPERIMENTAL INVESTIGATION OF THE CAUSE OF FAILURE OF COMPENSATION IN VALVULAR DISEASE.[2]

Since all theories as to the reason why a hypertrophic heart, the result of valvular disease or other cause, becomes insufficient, are of a purely speculative nature, Balint has endeavored to get at some positive facts from experiments on dogs, rabbits and cats. The aortic valves were destroyed by Rosenbach's method and the animals kept under observation for a long time. In each case after death marked hypertrophy of the heart-muscles was found but no trace of any failure of compensation although often several months had elapsed. In a later series of experiments, in addition to the destruction of the aortic valves, measures were taken to injure the cardiac muscle or the nervous mechanism. Intravenous injections of staphylococci produced too speedy death from ulcerative endocarditis, and the continuous subcutaneous injection of phosphorus, while it produced a high degree of fatty degeneration, did not lead to the slightest lack of compensation, and showed that the latter is certainly not due to an affection of the heart-muscle. When, however, the vagus was divided a different result was obtained. If both vagi were cut death followed very rapidly, much sooner than in otherwise healthy animals, but when one was left intact it was possible to produce cardiac insufficiency in dogs and cats but not in rabbits. Balint therefore considers it probable that in man a disturbance of the nervous mechanism of the heart leads to failure of compensation in valvular disease.

HYPERTROPHY OF THE HEART IN ARTERIO-SCLEROSIS.[3]

Hasenfeld says that the diversity of opinion regarding the frequency of cardiac hypertrophy in arteriosclerosis can be explained on the supposition that the former is not a necessary result of the latter, although theoretically from the increased work thrown on the heart it might be expected. He asks whether these varying effects may not be due to the special distribution of the sclerotic changes in the vessels in various portions of the body, as it appears to be proved that sclerosis of the splanchnics exercises a much greater influence on the circulation than that of other arteries, while probably marked sclerosis of the aorta has a similar effect. In order to arrive at a solution of this question he has made a careful study of the arteries in various portions of the body, and has weighed the heart in a number of cases. He arrives at the following conclusions:

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[1] Contrblt. f. in. Med., 1898, No. 21.

[2] Deut. med. Woch., 1898, Nos. 1 and 2.

[3] Deut. Arch. f. klin. Med., Bd. 59, s. 193.

Physiologically a slight connective-tissue growth is found in the intima of splenic, superior mesenteric and hepatic arteries.

Arterio-sclerosis is quite common, though only to a degree recognized by the microscope, in the splanchnic vessels. Marked changes, on the contrary, are found there much less often than in the aorta or in the arteries of the brain.

Sclerosis is usually most pronounced in the main trunks of the splanchnics and diminishes in the branches.

Arterio-sclerosis leads to hypertrophy of the left ventricle only when the splanchnics or the aorta above the diaphragm are markedly affected. Sclerosis of other vessels does not appear to alter the conditions.

In the cases under investigation, owing to the freedom of the terminal branches of the splanchnic system from degenerative changes and the varying degree of their development in the main trunks, hypertrophy of the left ventricle was very slight.

In the cases of contracted kidney examined all portions of the heart were invariably hypertrophied, but if, at the same time, the splanchnic vessels were greatly altered, hypertrophy of the left ventricle predominated. Marked changes in the aorta would probably act in the same way. Were the splanchnic arteries normal or only slightly affected, all portions of the heart were equally affected.

If further investigations as to the weight of the heart by Müller's method, which Hasenfeld considers the only accurate one, show the same general cardiac hypertrophy in connection with a contracted kidney it must be concluded that the cause of such enlargement increases the work of both sides of the heart and probably also spurs it to increased activity.

PNEUMOTHORAX CAUSED BY DIRECT VIOLENCE WITHOUT FRACTURE OF THE RIBS.

Walter Kidd[4] reports a case of a perfectly healthy man, twenty-one years old, who fell backwards with his spine flexed, from the footboard of an omnibus to the road, apparently falling on the left side of his back as no other bruises or injuries were found.

He felt a sharp pain in the left hypochondriac region and left lower ribs, but was able to proceed a considerable distance to a volunteer drill, in which he started to take part, but after a few minutes, feeling too ill to continue, he returned home; that night he suffered great pain in the region mentioned and his breathing was difficult. When seen the next day there was no external sign of injury, no fracture of ribs and no hemoptysis. His skin was cold and clammy, his pulse rapid and running, and the respiration hurried and painful, the pain being chiefly referred to the region of the spleen. Signs of left pneumothorax were present, while three days later some fluid had collected at the base of the chest. A month later there was still deficient expansion of the lung and some pleural fluid with pyrexia, the temperature ranging from 101° to 102°. These symptoms gradually subsided, and three and one-half months after the accident the patient was perfectly well and there were no signs discoverable in the chest.

A CASE OF RECURRENT IDIOPATHIC PNEUMOTHORAX.[5]

Finny reports the case of a stableman, eighteen years of age, of good family antecedents, and with no history of previous illness or delicacy, strain or violence, who complained on getting up in the morning of a feeling of great weight across the top of his chest, and when going to work was suddenly taken with violent pain and dyspnea. On the following day the pain had almost disappeared, only a slight catch in the upper part of the left axilla remaining when he coughed. Three days later on admission to the hospital there was no apparent evidence of any sickness in aspect, manner or decubitus. The respirations were easy, 28, pulse 96–100, temperature 98°. Physical examination showed that the left pleural sac was filled with air, the heart and mediastinal contents being displaced to the right of the sternum and the stomach downwards, well below the costal arch. Signs of effusion were never obtained. Recovery was uneventful except for the development of a double friction sound synchronous with the heart, which was considered by the reporter as of exocardial origin, and the patient was discharged six weeks later apparently well. Two weeks later while engaged in heavy lifting work with a manure fork he felt a little "crackle" in the top of the left chest, but he suffered little inconvenience till he got out of bed the next morning, when the old symptoms returned. Five days later he was again admitted to the hospital with marked signs of pneumothorax. When last seen he was making rapid progress toward recovery.

CRITICAL SWEATING IN PNEUMONIA IN RELATION TO DIURESIS.[6]

In view of the marked disturbance of the organs of circulation, and not the least the heart, which accompanies profuse sweating Rensner-Leinsal has endeavored to diminish or to prevent the sweating which occurs during the crisis in croupous pneumonia by lessening the amount of fluid in the body through increased diuresis, since the danger of death during or shortly after the crisis from cardiac paralysis might thus be in a measure avoided. He has used for this purpose only the sodio-salicylate of caffein with camphor or digitalis, and has only used them in severe cases, four of which are reported. Sweating was not prevented in every case, but in many it was reduced to an inappreciable amount as a result of the increased elimination of urine.

THE BACTERIOLOGY AND PATHOGENESIS OF SERO-FIBRINOUS PLEURISY.[7]

Le Damany brings up again the subject of the etiology of acute pleurisy and gives the result of his investigation of eighty-two cases. His conclusions, which are sufficiently radical, may be summarized as follows:

There is but one idiopathic sero-fibrinous pleurisy, to wit, the tubercular. That alone is due to the penetration of microbes into the pleura, and is the only form in which the effusion contains at all constantly the pathogenic agent, and is, therefore, the only one which is normally not sterile.

The presence of other pathogenic microbes in an effusion is accidental; they play no part so long as the effusion does not become purulent, and their discovery gives no clue to the character of the pleural inflammation.

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[4] Lancet, November 13, 1897.

[5] Dublin Journal of Medical Science, April, 1898.

[6] St. Petersb. med. Woch., 1898, No. 2.

[7] Presse Med., vol. v, p. 329.

Other pleurisies, always secondary, are pleural fluxions, whose existence is intimately connected with that of the subjacent pulmonary lesion (infarction, congestion, hepatization). They are never due to the invasion of the pleura by a microbe, for the effusion is always sterile, even when sero-purulent. Whether the pulmonary lesion is aseptic or infectious, the presence of bacteria in the pleural fluid is still accidental and exceptional.

Pathogenic bacteria, like the pneumococci, streptococci, Eberth's bacilli, bacteria coli, staphylococci, tetrageni, etc., acting directly on the pleura, can only produce empyema.

THE INFLUENCE OF THE FORM OF BACTERIAL INFECTION ON THE COURSE OF PNEUMONIA.

Weismayr [8] has made a series of observations similar to those of Dürck and others, but has devoted especial attention to the course of the disease. In thirty-nine cases of pneumonia he found that thirty-four were due to the diplococcus alone, two to a mixed infection by streptococci and diplococci, and three to a pure streptococcus infection.

In certain particulars the course of the disease seemed dependent on the form of infection, for while in those cases which were caused by the diplococcus resolution began in the majority of cases on the sixth or seventh day and never later than the eleventh, and was completed in a very short time, those in which the sputum contained streptococci, whether alone or mixed with diplococci, showed a distinctly delayed resolution, which could not be accounted for by the age of the patient, by the presence of complications, or, as Leyden considers the case in many instances, by a peculiar consistency of the exudate. The only characteristic common to all his cases was the presence of streptococci in the sputum. He therefore says that where streptococci are found in the sputum of patients who are ill with an inflammation of the lung, which is recognized clinically as lobar or croupous pneumonia, the prognosis as regards the duration of the disease should take into consideration the fact that delayed resolution is to be expected, while the general outlook is certainly less good, since the danger of a secondary infection, for example, by tubercle bacilli, or the possibility of abscess formation, is greater than in a pneumonia running a typical course.

No conclusions as to the condition of the affected lung can be drawn from the behavior of the fever. In most cases of streptococcus infection it is very irregular, remittent or intermittent, and may temporarily or permanently disappear without an alteration in the exudate. He has never observed chills. As regards the form of the pneumonia all his cases were of the lobar variety, although the signs did not always develop in their full intensity, and he does not consider it impossible that the original infection, often in cases where streptococci alone were found, was due to the pneumococcus, which had later given place to the streptococcus. Whether the latter alone is capable of producing a croupous lobar pneumonia or not, it is certainly true that their presence in the sputum of a typical croupous case, whatever the age or general condition of the patient, the course of the fever or the local phenomena, leads to a very much protracted resolution.

THE SPREAD OF PHTHISIS.[9]

Flügge denies that there is any evidence to show that a healthy individual gets phthisis from inhaling dust containing dried sputum, and says that nearly all experiments to induce tuberculosis in animals by causing them to inhale such dust have failed. Success has only occurred when there was some lesion of the respiratory tract. Furthermore it has been shown in the author's laboratory that the tubercle bacilli cannot be carried along in the finest dust as readily as other microbes. Tuberculosis can, however, be readily produced in animals, if they are forced to inhale finely divided drops of fluid sputum. The danger of infection lies therefore very largely in the patient's cough, the amount of contamination of the surrounding air depending on the frequency and character of the cough and the abundance of the sputum and the secretion of the mouth. He does not, however, think that this danger is as great as it appears to be, and can be probably avoided by attention to a few simple details. If the author's conclusions are correct the contagion must be much more fleeting than if it resulted from the dried sputum.

MIXED INFECTION IN TUBERCULOSIS OF THE LUNGS.[10]

Schabad, from a bacteriological examination of 31 cases of pulmonary tuberculosis, arrives at the following conclusions:

(1) Those cases only are to be considered instances of mixed infection in which the secondary organisms are found in the lung tissue or in the blood.

(2) The presence of pathogenic organisms in the sputum, even in pure or almost pure culture after Kitasato's method, is not enough to prove a mixed infection, since experience has shown that all micro-organisms grown in that way do not come from the lungs, the only exception being the true pus streptococcus.

(3) It is very important not to confound the real pus streptococcus with the so-called streptococcus of mucous membranes, which morphologically resembles it, but differs in its biological peculiarities and absence of pathogenic properties. While the latter play the rôle of harmless parasites, the former has a decided prognostic significance, since it enables one to diagnosticate a streptococcus mixed infection, altogether the commonest form in tuberculosis of the lungs.

(4) Less often a secondary infection occurs with the micrococcus tetragenus and pneumococcus, or a double infection with the streptococcus and staphylococcus or the streptococcus and pneumococcus.

(5) Secondary infections complicate chiefly the last stages of pulmonary tuberculosis and soon lead to death. It is so common that almost every case of the disease which comes to autopsy shows evidence of it.

(6) The significance of the secondary infection lies in the fact that it co-operates with the tubercle bacillus in the pneumonic process, or at least exerts a harmful influence through the toxins of its bacteria on the general condition of the patient, on the fever, and in the destruction of the lung. It can also occasion a septicæmia, which then appears as the last act of a mixed infection.

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[8] Zeitsch. f. klin. Med., 1897, Bd. 32.

[9] Deut. med. Woch., October 14, 1897.

[10] Zeitschft. f. klin. Med., Bd. 33, S. 476.

(7) Undoubted cases of pulmonary tuberculosis occur which run their course with all the manifestations of the hectic process and end fatally without the participation of any other organism than the tubercle bacillus.

(8) Hectic fever of the severest type is characteristic of uncomplicated cases of tuberculosis of the lungs. In cases of mixed infection with streptococci the typical streptococcic curve is seldom observed; in most cases the temperature is remittent or approaches the constant type.

(9) A normal temperature characterizes stationary uncomplicated pulmonary tuberculosis. A mixed infection with a normal temperature (a passive mixed infection in Spengler's sense) is hardly probable.

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Reports of Societies.

TWENTY-SECOND ANNUAL MEETING OF THE AMERICAN DERMATOLOGICAL ASSOCIATION.

Held in Princeton, N. J., May 31 and June 1, and in New York City, June 2, 1898.

(Concluded from No. 13, p. 323.)

Lupus Erythematosus in a Tuberculous Patient, with Autopsy Report and Notes on Other Cases.

Dr. J. A. Fordyce presented this report in connection with the present discussion. The first case occurred in a subject in whom the anatomical diagnosis, at autopsy, was pulmonary and cerebral edema, renal tuberculosis and hepatic cirrhosis. A section from the affected area of the skin showed no polynuclear cells, and no tubercular inflammation of the skin, the principal microscopical changes being vascular. The eruption in this case corresponded more closely with the telangiectatic type. In another case reported by him he was of the opinion that the lupus erythematosus was due to a local thrombosis of capillary vessels previously diseased, and that the peripheral extension might be explained by the spreading of this process in the capillaries. In other cases the passage of toxins through the vessels may develop a local thrombosis.

Dr. Gilchrist said that his studies concerning the histology of lupus erythematosus served, for the most part, to confirm the statements made by Dr. Robinson. It seemed to him to be a disease which is histologically distinct from tuberculosis of the skin. He had not found any thrombosis in his cases.

Dr. M. B. Hutchins, of Atlanta, said that in a limited experience with the disease, he had found the best results to follow the use of a 20-per-cent. pyrogallic-acid plaster — a method that had found favor in the New York Skin and Cancer Hospital.

Dr. G. T. Elliott said that he had tried every form of treatment, and had not seen two cases in succession react in the same way. He could only vouch for one cure, and that followed the application of the actual cautery to a small area.

Dr. C. W. Allen spoke of the good results that he had obtained from the electrolytic needle, and from the application of pyrozone, but admitted the proneness to relapse even after a considerable interval.

Dr. Politzer said, regarding the statement that the disease is claimed to originate in the sebaceous glands, that he thought the fact that the disease begins in the mucous membrane, and on the palms of the hand, where there are no sebaceous glands, should be sufficient to refute such a claim. In connection with the subject of treatment, a case was quoted to show the good effect sometimes observed from Schurz's method of painting the patches with a very weak solution of arsenic.

Dr. Montgomery remarked that although he had succeeded in obtaining the desired reaction from the Schurz treatment, he had never observed any reduction in the size of the patches.

Dr. Sherwell said that his favorite treatment for this disease is the acid nitrate of mercury externally, and arsenic internally. He had had a number of cures, including one which had had no relapse for eighteen years.

Dr. Zeisler said that he had long been impressed with the parasitic nature of lupus erythematosus, and while he had refused to accept the view that there is any connection between it and tuberculosis, some cases certainly suggested such a relationship. There was more hope of accomplishing something by treatment in those cases presenting a turgescence of the skin. His favorite treatment consisted in the application locally, about once a week, of a mixture of equal parts of iodine, carbolic acid and chloral, with soothing applications in the interval. Lotions were usually better borne than ointments.

Dr. Winfield favored the employment of mild measures. In only one case had he succeeded in curing the disease even for the space of a year, and in that one he had used pure carbolic acid.

Dr. Jackson advocated the local application of a 50-per-cent. solution of resorcin.

Dr. Fox was inclined to believe that with a red-hot poker the worst case of erythematosus lupus could be cured, but the scarring would be objectionable. He did not think one was warranted in saying that the disease is incurable, although admitting that the disease often recurs, even after a number of years. It was most important to use such local measures as would diminish the congestion.

Dr. Bronson said that as the disease, in its clinical aspect, was essentially an erythema, the object of treatment should be to diminish the hyperemia. The best remedy for this purpose is resorcin, which he preferred to apply in the form of varnish made with tragacanth and gelatin.

Dr. Duhring said that he had largely given up very active treatment in this disease, for he was convinced that he had made many cases worse by using the stronger remedies. Caustics, curetting and the local use of arsenic he considered harmful. He was of the opinion that the future treatment would be largely by internal medication.

Dr. Hardaway said that he reserved the destructive treatment for the fixed form of the disease.

Dr. Hyde said that he had observed some remarkably good results from the use of pyoctanin blue after disinfecting the surface with formalin solution.

A REPORT OF THREE CASES OF URTICARIA PIGMENTOSA.

Dr. H. W. Stelwagon presented this report, and exhibited one of the patients. Two out of three subjects were females. The early lesions were, for the most part, wholly urticarial. The eruption was most abundant on the neck and trunk.

Dr. Gilchrist said that he had examined sections from one case of urticaria pigmentosa, and had found, as Unna had asserted, that the lesions consist largely of mast cells.

IMPRESSIONS AND CONCLUSIONS FROM A STUDY OF FIVE THOUSAND CASES TREATED DURING THE YEAR.

Dr. C. W. Allen read this paper. Speaking of favus, he said that he had found the best treatment to be cutting the hair short, and applying such remedies as chrysarobin. In the treatment of facial erysipelas he had derived much satisfaction from applications to the nose of a 50-per-cent solution of ichthyol in water, and painting the face with a 25-per-cent solution of ichthyol in collodion. He had noted the occurrence of erythema nodosum so commonly in those who had just completed a sea voyage that he was inclined to believe there was a definite connection between the two. The temperature in these patients often rose as high as 104.5°F. A most satisfactory treatment for ringworm consisted in the application of formalin by the physician himself. It is a strong and painful application, but acts promptly and with great efficiency.

Dr. Johnston said that he had seen a most violent dermatitis produced by the use of a half-per-cent solution of formalin.

Dr. Gilchrist also thought formalin a dangerous application.

Dr. Hutchins, on the other hand, said that he had used it in half per cent. and also in full strength, without observing any dermatitis. Recovery had been unusually rapid.

A PAPULAR PERSISTENT KERATODERMIA. REPORT OF AN UNDESCRIBED DISEASE.

Dr. J. C. Johnston, in this report described a pruriginous, papulo-vesicular eruption, occurring in an adult, the papules being discrete, hard and not grouped. It appeared first on the face, and subsequently on the arms and legs. The microscope showed an enormous secondary thickening along the nerve trunks. It should be classed among the neurotic inflammations, between the neuromata and the neuro-fibromata.

A CASE OF LICHEN SCROFULOSUM OCCURRING IN A COLORED CHILD.

Dr. T. C. Gilchrist reported this case. Internal treatment with the hypophosphites caused a complete disappearance of the lesions, after they had existed about two weeks.

Dr. White remarked that the characteristic of this disease was the presence of a patch of papules, presenting a well-defined margin, and diminishing first in the centre.

A CASE OF UNIVERSAL LICHEN PLANUS WITH A FATAL TERMINATION.

Dr. J. A. Fordyce reported this case, which illustrated the fact that many cutaneous diseases are associated with severe lesions of the internal organs.

Dr. Johnston remarked that from the report of the autopsy he inferred that the condition of the adrenals had much to do with the extreme degree of pigmentation exhibited in this case.

Dr. Gilchrist said that recent investigators had succeeded in extracting from the adrenal gland an exceedingly toxic substance.

Dr. Hyde said that in this disease the degree of pigmentation was not always in proportion to the number of the lesions.

Dr. Fordyce said that he had never before seen a case of lichen planus with such an extensive distribution of the lesions and such marked pigmentation. As this patient had a marked cardiac lesion, it was a question whether the lichen planus was directly concerned in causing the death of the patient.

BATH PRURITUS.

Dr. H. W. Stelwagon, in a paper with this title, described that itching or burning from which some persons suffer immediately after a bath. It varies from a slight pricking to an almost intolerable itching. It is commonly felt in the lower limbs, and lasts from ten minutes to half an hour, becoming more and more intense for a time, and then gradually subsiding. It lasts longer if the individual goes from the bath to bed. It is not more frequent in cold than in warm weather, and is observed even after open-air bathing, both in fresh and salt water. Prolonged bathing, and very hot or very cold water aggravate the condition. Persons having an irritable, dry skin are most susceptible, and the condition is naturally aggravated by imperfect digestion, worry and a generally nervous temperament. The treatment is unsatisfactory. Only a mild soap should be used, and that sparingly. Gentle rubbing with glycerine lotion in small quantity is useful, as is also the free use of dusting powders.

Dr. White said that these cases were not easily influenced by treatment, but he had benefited one case by having the patient spray the body with alcohol immediately on coming out of the bath.

Dr. Hardaway said that he had observed one such case, in the person of a healthy physician, pretty constantly for ten years. Cold water produces agonizing itching in this man. A weak solution of menthol in alcohol, and the common calamine and zinc lotion had given this patient a good deal of comfort.

Dr. Hutchins thought these cases were similar to pruritus himalis, being the result of temperature changes occurring during the bath, as from evaporation.

Dr. Stelwagon replied that his cases did not seem to have any direct connection with temperature variations. The first case that he had observed had been in his own immediate family.

The third day of the meeting was devoted to a clinical session, and exhibition of photographs and colored plates of rare and interesting cases. This session was held in the New York Academy of Medicine, and the number, variety and rarity of clinical cases exhibited aroused much favorable comment.

Officers elected: *President*, Dr. J. A. Fordyce, of New York; *Vice President*, Dr. J. T. Bowen, of Boston; *Secretary and Treasurer*, Dr. George T. Jackson, of New York.

Yellow Fever in the South. — Yellow fever is present to a moderate extent through southern Mississippi and Louisiana, and on September 26th, twenty-six cases of a mild type were discovered at Wilson, La. In general the type of the disease is mild, and its spread is being kept under control by the officers of the Marine-Hospital Service.

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THE WHEAT SUPPLY OF THE WORLD; THE WASTE OF NITRATES; THE FIXATION OF NITROGEN.

AT the meeting of the British Association for the Advancement of Science held lately in Bristol, Eng., Sir William Crookes, among other subjects, spoke of the "Wheat Supply of the World," in an address which has attracted much attention.

It is important to be able to forecast the future in respect to the wheat supply, for nations of the highest civilization are wheat eaters, and, as Sir William Crookes says, none of the other cereals have the food value, the concentrated health-sustaining power of wheat. It is on this account that the accumulated experience of civilized mankind has set wheat apart as the fit and proper food for the development of muscle and brains. A failure then on the part of the wheat-exporting countries to keep pace with the demand would be a dire calamity.

Sir William Crookes takes a survey of the wheat-producing regions and gives estimates from published statistics of the quantities of wheat produced during the last three decades by Canada, Australia, Russia, the United States, etc., and comes to the pessimistic conclusion that the limits of production are nearly reached for all these countries and even for the United States. Practically there remains no uncultivated prairie land in the United States suitable for wheat growing, — vast regions, once great wheat fields, have ceased to grow wheat, the soil for that cereal being exhausted. The virgin land has been rapidly absorbed until at present there is no land left for wheat without reducing the area for maize, hay and other necessary crops. It is, he says, almost certain, that within a generation the ever-increasing population of the United States will consume all the wheat grown within its borders, and will be driven to import, and like Great Britain will scramble for a lion's share of the wheat crop of the world. As for Russia, he declares that the prospect is far worse; the peasants are starving while the wheat growers export grain which should be consumed at home; as for Siberia, the most of this country is too far north for the cultivation of wheat and there are but a few very limited districts in the western part, where wheat can be grown to advantage. The wheat-bearing area of all Canada has increased less than 500,000 acres since 1884, while the exports have not increased in greater proportion, the added acres in the northwest and Manitoba being only about sufficient to meet the growing requirements of the population. Not much more can be expected from Australasia and Argentine and Uruguay, — the prospective supply of wheat from these countries having been greatly over-rated. In India, seven-eighths of the harvest is required for native consumption and only one-eighth is available for export. The acreage devoted to wheat has been steadily declining and will probably continue to decline. But little more can be looked for from Austro-Hungary, whose wheat area for the future is not likely to exceed home requirements. There are reasons why great expectations for the future cannot be entertained of Africa.

Sir William Crookes's prospective is sufficiently gloomy. Before the year 1930 this country will have an increased population which will need all the wheat that it produces and the annual production of wheat will become less and less, while population will augment in a geometrical ratio; other nations will experience a wheat famine of a most deplorable kind. The results will be manifest in the deteriorated constitutions of the great Caucasian race whose progress has everywhere gone along *pari passu* with wheat cultivation.

It is worthy of note that Sir William Crookes's statement of facts and statistical probabilities have been disputed by the commercial experts. The *Evening Post* sharply criticises his prognostications. The view given above of the productive limitation of Canada and Roumania is rejected, and much stress is laid on Russia's possibilities under scientific farming. Dornbusch's London organ of the grain trade contests the theory that Australian production has reached its maximum and affirms that fifty million acres of suitable soil are to-day cultivated in Queensland alone. Our own Department of Agriculture estimates a ten-per cent. increase this year in the acreage of the United States with at least 150,000,000 bushels increase in the output. Finally, the very obvious point is made that estimates of the world's population and of its ratio of increase are largely matters of guesswork, especially when the attempt is made to discriminate between bread eaters and non-bread eaters.[1]

On another point of Sir William's address, even more importance may be placed. The world's stock of fixed nitrogen is slowly being exhausted, and this exhaustion when accomplished would surely entail destruction of the wheat crop, for wheat pre-eminently demands nitrogen, fixed in the form of ammonia or nitric acid. In its free state, nitrogen is one of the most abundant and pervading bodies on the face of the earth. Every square yard of the earth's surface has nitrogen gas pressing down on it to the extent of seven tons, but this is in the free state, and wheat demands it fixed. In the free state nitrogen is worth nothing, combined in the form of nitrate of soda a ton's weight is worth about $31.00. We now get our available nitrogen: (1) as ammonia and sulphate of soda, in the by-products of gas making (the quantity obtained from this source is very small); (2) from guano (guano deposits are unfortunately now nearly exhausted); (3) from cultivation of clover and the leguminosæ which assimilate nitrogen by the help of certain bacteria of the soil — the supply from this source is attended with uncertainty and difficulties; (4) from manure, and from the sewage and drainage of towns. Sir William Crookes comments on the unspeakable waste of fertilizers constantly going on in cities which pour their sewage into water courses and into the sea, and declares with Liebig that "nothing will more certainly consummate the ruin of a country than a scarcity of fertilizers,— it means a scarcity of food."

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[1] New York Evening Post, September 27, 1898.

The fixation of nitrogen Sir William Crookes declares to be the problem of the future awaiting the ingenuity of chemists, being vital to the progress of civilized humanity. He formerly made some experiments in which he showed that nitric acid can be generated from air by passing a strong induction current between terminals, when the air takes fire and burns with a powerful flame, producing both nitrous and nitric acids, whose after combination with soda is a simple affair. It is then demonstrated that nitrate of soda can be produced artificially by the combustion of the atmosphere. But how about electricity? he asks. Can we generate enough energy to produce 12,000,000 tons of nitrate of soda annually — the amount required? A preliminary calculation shows that there need be no anxiety on this score. Niagara alone is capable of supplying the required electrical energy without much lessening its mighty flow. The artificial production of nitrate of soda is clearly within view, and by its aid the land devoted to wheat can be brought up to the thirty bushels per acre standard!

These considerations are of the highest practical utility, as showing the relation which chemistry sustains to the solution of the food-problems of the future. There will be bread for all.

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REST IN BED IN THE TREATMENT OF INSANITY.

BERNSTEIN[1] states that the characteristic advance in practical psychiatry in the nineteenth century is the evolution of the idea that the insane person is a sick person, and the systematic introduction of this idea with all its consequences into practical life. The treatment by rest in bed has recently been much discussed. Its practicability has led to the establishment in an asylum of two or three wards as an observation quarter, to which all new admissions are sent, where they must remain in bed. The chronic cases in physical good health, capable of work and not demanding especial care are sent in a few days to other wards; the acute, weak cases and the dangerous cases are kept in bed in these wards, together with relapsed cases, those temporarily agitated and general paralytics in the marasmic state. Agitated, furious and untidy cases and the cases of suicidal melancholia are also fitted for these wards. The idea of the bed treatment is, of course, not wholly new since many of these cases have always required such treatment, but this special régime of rest in bed is based to some extent on the theory of giving to insane patients a remedy employed largely in the treatment of physical diseases. The chief objection raised has been to the possibility of its application, based upon the idea that the insane will be unwilling to submit to remain in bed, especially the violent and destructive patients who may demand restraint. Practically, however, the violence is found to be considerably moderated by such treatment and the habit of remaining in bed is quickly acquired. The newly-admitted patient is undressed, put to bed, surrounded by other patients submitted to the same régime. This atmosphere has the effect of convincing him of his own sickness and of that of his neighbors and the necessity of rest and tranquility for him. This state of things acts as a discipline. It is true that sometimes restraint in bed is necessary, either by aid of the attendants, baths, packs, drugs, etc. Bernstein has applied this in his wards for women at Moscow with good results. Where the patients are in separate rooms the method becomes very difficult and demands a large force of attendants. It must be employed, therefore, in large wards. At the outset the practice was much more difficult than later, when the newcomers arrived in an established order of things and found themselves surrounded by patients accustomed to remain in bed. The attendants were sometimes obliged to restrain patients in bed for a day or two, but even the most excited quickly yielded and warm baths, restraint and narcotics were very rarely needed. During a period of eight months 32 patients were cared for in his ward, of whom 21 were acute cases, 19 of whom remained in bed during 1,696 days. During the year the isolation rooms were not used; the ward ordinarily occupied by excited cases was surprisingly orderly and calm. A larger nursing force was not required and frequent visits were made by the physicians. The violence and excitement of the patients rapidly diminished. The familiar scenes often observed when patients were isolated in separate rooms were never seen. The patients seemed to keep their human qualities; they were much less filthy. Motor excitement was reduced to a minimum; the excitement of the mind was diminished, the delirium was slight. The patients did not seem to be cured more promptly, but the system certainly possesses the merit of making it possible to renounce the isolation of the insane in cells, it facilitates their care and ameliorates the supervision. It is economical because it diminishes the filthiness and the destruction of furniture. It simplifies the type of asylums and renders superfluous the padded cells.

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[1] Annales Medico-psycholog., v. 55, 1897.

MEDICAL NOTES.

Troop-Ships for the Army. — We are glad to learn that the War Department is about to fit up troop-ships which shall be properly equipped and arranged for the transportation of our soldiers. There will probably be plenty of occasion for their use for many months to come, even if no further wars require our attention.

The Heated Term in Paris. — The following account of the disastrous effects of this summer's heat and drought in Paris is given by the Paris correspondent of the *Lancet*, who writes under date of September 20th. The excessive heat prevailing in Paris for the last two weeks has had a markedly injurious effect upon the public health. In addition to the numerous cases of sunstroke, gastro-intestinal affections have run up to an unprecedented number owing to the water-supply being temporarily enhanced by water taken from the Seine, the ordinary sources of supply being insufficient to meet the demand. Some cases of gastro-enteritis have been of a very severe type, death occurring in about three days; others have been milder and very few Parisians have escaped an attack of this mild form. Every effort is being made to increase the supply of drinkable water for the town and it is hoped that by next year water from Lunain will be available. Last week an artesian well was bored at the Butte aux Cailles. This well, the boring of which was originally commenced in 1864, gives a minimum supply of 6,000,000 litres *per diem* at a temperature of 27° C. The water, which is very pure and appears to come from the shell beds of the Jura, will be used in part for a thermal bathing *établissement* and in part, after having been cooled down to 12° C., for drinking purposes.

With the disastrous drought produced in East London this summer by the heat, our readers are undoubtedly familiar. On this side of the water, although marked suffering has resulted from the heat, we have been spared the drought and in fact have cause to complain rather of too much than too little rainfall.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 5, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 45, scarlatina 24, measles 7, typhoid fever 26.

Bequests to Hospitals. — The will of the late Samuel B. Symonds, of Beverly, recently proved in the Essex County Court, bequeathes $1,000 to the Beverly Hospital. By the will of the late Elizabeth C. Ware $25,000 is bequeathed to the Boston Lying-in Hospital, $20,000 to the Children's Hospital, $10,000 to the Massachusetts General Hospital.

Death of a Centenarian. — Mrs. Betsey Barker, of North Grafton, died October 31 at the age of one hundred years and four months, of pneumonia.

Sailing of the "Bay State." — The *Bay State* sailed again for Utnado, Porto Rico, with several nurses who are to be left for service in the Military Hospitals there. She will return with another complement of soldiers.

William Reardon, thirty-four years of age, a coal-handler of South Boston, died last week as the result of drinking carbolic acid from a bottle which he found in the lunch-basket of a friend, and supposed to contain whiskey. The danger from both the internal and external use of carbolic acid is so great that the greatest care ought to be taken in labelling bottles containing it.

Death at the Age of One Hundred and Three. — Miss Theresa Emery, probably the oldest resident of Maine, recently died at her home in Eliot, Me., aged one hundred and three years, six months and eight days. She was a daughter of a Revolutionary soldier, and had two brothers who served in the War of 1812. Up to within a short time of her death she was active and was able to read and sew without glasses. She was one of the young women who scattered flowers in the path of Lafayette on his visit to Portsmouth in 1825.

A Would-be Benefactor of Humanity. — The following letter was received by the Superintendent of a large hospital within ten miles of the State House.

Pleasant Valley, Ala.
September 24, 1898.

To the Supt. of Hospital of Boston Mass.

Dr, I have a medicine that I want you to test in your Hospital it will take a cancer out roots and all clean in 8 or 9 days, any old sore is a cancer if the directions are followed. Now, if you have any old sore of any kind, will you test it. I will give it free for two three or four or may be more, it is vegetable and harmless hoping that this request will meet approval it will not kill any person only the cancer it take the mater and say yes try it, I send stamp for answer

Yours truly

P. S. I want to put it on the Public.

NEW YORK.

The Consolidated Medical College. — The consolidated medical college began its first session on October 3d. Of the ninety-five members of the teaching faculty, twelve professors and twenty assistants were appointed during the summer. Twenty-two of the others were last year professors and instructors in the University Medical School, and forty-one connected with Bellevue Hospital Medical College.

Death of Dr. J. E. H. Nichols. — Dr. James E. H. Nichols, one of the attending surgeons of the Manhattan Eye and Ear Hospital, New York, died on September 11th at Sapphire, in the mountains of North Carolina. He was about forty years of age and was a graduate of the College of Physicians and Surgeons in the year 1885.

Death of Dr. George Trowbridge. — Dr. George Trowbridge died suddenly at his residence in New York on September 10th. He was a son of the late Amos H. Trowbridge, who was prominent in financial circles and president of one of the large national banks. He was born in New York City and was graduated from Yale College in 1878. He studied medicine in New York, and received the degree of M.D. from the College of Physicians and Surgeons in 1881. He was a successful and highly esteemed practitioner, but some time ago retired from active work in the profession.

Death of Dr. Thomas Seton Robertson. — Dr. Thomas Seton Robertson died suddenly at his residence in New York on September 7th, at the age of forty-five. He had not been in good health for some months, but his death was entirely unexpected and was immediately due to cardiac syncope induced by the intense heat. Dr. Robertson was born in Glasgow, Scotland, and commenced the study of medicine in London, where he had a thorough hospital training and for some time served as the assistant of Sir John MacNamara. After coming to the United States he received the degree of M.D. from the University of Vermont, in 1879, and settled in New York. He devoted himself assiduously to his work and built up an extensive and lucrative practice.

Bequest to a Medical School. — By the will of Dr. Thomas Seton Robertson, who died recently in New York, the sum of five thousand dollars is bequeathed to the Medical Department of the University of Vermont, of which he was a graduate, three-fourths the income from which is to be devoted to the purchase each year of a fine microscope, to be awarded to the student producing the best essay on any neurological subject. From the remainder of the income a pocket surgical case is to be awarded annually to the student writing the second best essay in the same department of medicine. These are to be known as the "Robertson Prizes." If any surplus remains from the residuary estate it is to be given to the medical school for the purchase of a large microscopical cabinet, with microscopes for the use of students, to be known as the "Robertson Memorial Cabinet."

The New Medical College Building. — At a meeting of the Executive Committee of the Council of the University of the City of New York held September 26th, a deed was accepted transferring from private ownership to the university the new medical college building at East Twenty-sixth Street and First Avenue, which was begun last year for the use of Bellevue Hospital Medical College. The university accepts the building subject to a purchase money mortgage equal to the value of the lot on which it stands. The university has also received from the former trustees of the Bellevue School the use of Carnegie Laboratory with the understanding that the building will become the property of the university when certain conditions agreed upon by the owners shall have been fulfilled. The property acquired by the university for its medical department represents, it is stated, an outlay of over half a million dollars. It was also announced by Chancellor MacCracken at the meeting that over one hundred thousand dollars had been received in gifts during the summer for the consolidated University and Bellevue Hospital Medical College, and that a medical endowment had been founded. A lady (whose name is withheld) whose husband in his lifetime was greatly interested in the university has given a sum sufficient to set apart three halls in the medical buildings for the use of the students in recreation hours. One will be a reception and study room, another will be devoted to a reference library, and the third is to be a Young Men's Christian Association hall.

Fatal Accident. — Another fatal accident has been added to the numerous lists of cases in which persons have been shot in mistake for deer in the Adirondack forests. On September 23d the only son (a lad fourteen years old) of Dr. Andrew F. Currier, the well-known gynecologist, was killed in this way, and what makes the tragedy seem doubly sad, the fatal shot was fired by his own party. Dr. Currier with his young son and a friend had gone to the Adirondacks for a week's hunting, and were accompanied by guides at the time of the accident. Some time ago it was suggested, for the purpose of preventing such melancholy catastrophes, that all individuals going about in the Adirondack woods during the game season should wear upon their persons some article of a bright scarlet color, so that there should never be any danger of their being mistaken for deer. It does not appear that this has ever been practically acted upon, but even if a custom of this kind had been in vogue it is possible that it might not have been the means of saving young Currier's life. According to the accounts reported the underbrush was exceedingly thick, and it was merely the movement of the bushes made by his body passing through them that attracted the attention of the other hunters. A deer's tracks had been discovered by the guides, and just before the moving of the foliage was observed the baying of the hounds had announced that the game was near.

Curious Effect of a Head Injury. — A case of unusual neurological interest has been under treatment for some time past at St. Vincent's Hospital. Dr. T. H. Curtin, the house-surgeon, who has had charge of it, states that the patient, William Larsen, a Norwegian, was admitted on September 5th in a state of coma, a block from a derrick on one of the piers having fallen upon his head and crushed in the right side of the skull, the fracture being nearly three inches across. Most of the third frontal convolution of the brain had been destroyed and it was not expected that the man would survive more than a few hours; but two days after the fragments of bone had been removed, the edges trimmed, and all pressure removed from the brain, he recovered consciousness. The effect of the injury upon memory and speech was watched with special interest, and it was at first found that while be seemed rational and nearly normal in his understanding of what was said to him, all his answers to questions were in an unintelligible gibberish. After a few days, however, the condition of the brain had so far improved that his speech became entirely coherent; but the remarkable circumstance was noted that he could no longer speak in his mother tongue, but only in English. Before his accident, it was ascertained, he could talk fluently in both Norwegian and English. Another feature of the case is the development of great emotional sensitiveness; so that if any one conversing with him smiles, he is moved to laughter, and if the person looks depressed, he begins to weep. He recognizes his acquaintances immediately, and talks with interest of his plans for the future. There is also at St. Vincent's Hospital at the present time another patient who is recovering with a large area of the brain exposed. In this instance the fracture necessitated the removal of a section of the cranium about three inches long and one inch in width; but the destruction of cerebral tissue was less than in the other, and the injury was not attended with the same variety of phenomena.

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Miscellany.

THE WORK OF THE RED CROSS SOCIETY.

In view of the various press criticisms of the work of the Red Cross Society, the following statement of Dr. N. Senn, published in the September 17th number of the *Journal of the American Medical Association* is of interest:

"Miss Clara Barton, President of the American Red Cross Society, has performed her onerous duties during the entire war with a devotion and earnestness that merit universal recognition at home and abroad. She has been tireless in her efforts to bring comfort to the soldiers at times when her services were most needed. The *Texas* and the little steamer *Red Cross*, under her command, made their appearance at Siboney at a time when outside help was most appreciated. Ice, medicines, dressings and hospital supplies were freely distributed among the sick and wounded. After the surrender of Santiago the *Texas* was the first vessel to enter its harbor on its errand of mercy in bringing food for the hungry Cubans and delicacies for the sick of the victorious and vanquished armies. The Red Cross Society established supply depots in all of the large camps and the good work done everywhere will live in the memories of all who were engaged in the conflict. Miss Barton has the confidence of the American people and she has sustained it through the present war by the thoughtful and timely distribution of the innumerable and liberal donations to the society she so well represents. An appropriate idea of what this society has done can be gained from the fact that in Camp Wikoff alone two thousand dollars of supplies are distributed daily. Miss Barton has been assisted in her widespread humanitarian work by a large staff of physicians and nurses who came to the relief of the medical officers at times when their services were most needed. After peace was declared, Miss Clara Barton immediately sailed for Havana to bring much-needed aid to the starving reconcentrados of the long-besieged city, while her numerous helpers continued their faithful work in the home camps. The work of the Red Cross received the moral and substantial support of the charitably disposed citizens throughout the United States and liberal donations from abroad. Recent experience has again demonstrated that this society is the most important auxiliary in war as well as other natural disasters in bringing prompt relief to the sufferers."

When all this is said, however, the fact remains that it was unfortunate the necessity for such assistance should ever have arisen.

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RESOLUTIONS VOTED BY THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The following resolutions were offered, referred to the Executive Committee of the American Public Health Association and subsequently adopted by the Association:

Offered by Dr. Geo. H. Rohe:

Resolved, That the Committee on Public Health Legislation be continued; that it be authorized and requested to proceed along the lines of work already begun; that the Association reaffirms its endorsement of the creation of a National Department of Public Health. Adopted.

Presented by Dr. A. L. Gihon:

Resolved, That a committee of seven be appointed by the Chair to wait upon the President of the United States with a view of obtaining a bacteriological commission to go to Havana to study the cause and prevention of yellow fever. Adopted.

Offered by Dr. A. Walter Suiter:

Resolved, That this Association recommends that public health authorities in general exercise every possible means to effect the complete discontinuance of the use of the so-called long-tube nursing bottle, which is so largely a contributing factor in infant mortality. Adopted.

Offered by Dr. U. O. B. Wingate:

Resolved, That a committee of five be appointed by the Chair for the purpose of drafting and presenting to this Association, for adoption, a definition of the term "epidemic," for the guidance of health authorities in executing such laws as call for the declaration of the presence of an epidemic. Adopted.

Offered by Dr. Henry B. Horlbeck:

Resolved, That the Association call to the attention of the Government of the United States, the presence of leprosy in that country. This Association would urge upon the United States Government the necessity of establishing a leper home or colony, similiar to such institutions as now exist in Canada and Mexico, where such persons can be segregated, and in this manner protect the general public and, at the same time, afford these sufferers a proper home and medical care. Adopted.

METEOROLOGICAL RECORD

For the week ending September 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S. .18	29.80	72	81	62	90	79	84	S.	W.	4	7	G.	C.	
M. .19	29.84	67	75	59	57	48	52	W.	W.	12	15	C.	C.	
T. ..20	30.07	58	67	50	64	54	59	W.	N.W.	8	8	C.	F.	
W. .21	30.36	55	66	44	52	51	52	N.W.	S.W.	14	12	C.	C.	
T. ..22	30.20	62	73	51	72	73	72	S.W.	S.W.	12	16	F.	O.	
F. .23	29.78	70	78	62	95	92	94	S.W.	S.W.	14	12	R.	O.	.74
S. ..24	29.97	58	70	48	94	100	98	N.E.	N.	18	14	R.	R.	.02
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, September 24, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1268	603	21.84	11.68	15.44	2.32	1.60
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,214,256	376	118	14.04	10.80	3.51	4.05	6.56
St. Louis. . .	570,000	—	—	—	—	—	—	—
Baltimore . .	550,000	200	79	21.50	9.50	11.10	5.00	5.50
Boston . . .	517,732	219	95	20.24	12.42	14.72	2.76	1.84
Cincinnati . .	405,000	105	—	8.64	10.58	4.80	1.92	1.92
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	—	—		—	—	—	—
Washington .	277,000	104	38	-	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	60	21	26.56	11.62	16.66	3.32	—
Nashville . .	87,754	30	13	20.00	16.66	13.33	—	3.33
Charleston . .	65,165	—	—	—	—	—	—	—
Worcester . .	105,050	33	14	21.21	9.09	18.18	—	—
Fall River . .	95,919	36	22	19.39	8.31	19.39	—	—
Lowell . . .	87,193	48	23	10.40	16.64	10.40	—	—
Cambridge . .	86,812	39	15	30.72	10.24	20.48	2.56	2.56
Lynn	65,220	18	4	16.66	11.11	5.55	5.55	—
New Bedford .	62,416	22	4	24.90	4.15	16.60	8.30	—
Somerville . .	57,977	15	8	33.33	—	20.00	—	—
Lawrence . .	55,510	18	8	27.77	—	22.22	—	5.55
Springfield .	54,790	17	8	17.64	—	11.76	—	5.88
Holyoke . . .	42,364	23	15	43.47	25.10	34.80	4.35	—
Salem	36,062	16	2	—	12.50	—	—	—
Brockton . .	35,853	—	—	—	—	—	—	—
Malden . . .	32,891	9	2	11.11	11.11	11.11	—	—
Chelsea . . .	32,716	—	—	—	—	—	—	—
Haverhill . .	31,406	15	8	26.66	—	6.66	—	—
Gloucester . .	29,775		—	—	—	—	—	—
Newton . . .	28,990	12	4	16.66	8.33	16.66	—	—
Fitchburg . .	28,392	7	6	57.12	—	42.84	—	—
Taunton . . .	27,812	9	3	44.44	—	44.44	—	—
Quincy . . .	22,562	4	3	50.00	—	50.00	—	—
Pittsfield . .	21,891	—	—	—	—	—	—	—
Waltham . .	21,812	10	2	20.00	10.00	10.00	10.00	—
Everett . . .	21,575		—		—	—	—	—
North Adams	19,135	6	2	—	—	—	—	—
Chicopee . .	17,368	4	1	25.00	—	25.00	—	—
Medford . . .	[illegible]	4	1	—	—		—	—
Newburyport .	14,794	—	—	—	—	—	—	—
[illegible] . .	11,465	2	1	—	—	—	—	—

Deaths reported 2,738: under five years of age 1,131; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 568, consumption 301, acute lung diseases 175, diarrheal diseases 257, diphtheria and croup 78, typhoid fever 75, whooping-cough 32, cerebro-spinal meningitis 14, erysipelas 5, scarlet fever 4, measles 3.

From whooping-cough New York 19, Philadelphia 4, Haverhill 3, Boston 2, Providence, Nashville, Cambridge and Somerville 1 each. From cerebro-spinal meningitis New York 5, Washington 4, Worcester, Cambridge, Somerville, Holyoke and Fitchburg 1 each. From erysipelas Providence 3, New York and Philadelphia 1 each. From scarlet fever New York 3, Philadelphia 1. From measles New York 3.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending September 17th, the death-rate was 24.0. Deaths reported 5,165; acute diseases of the respiratory organs (London) 135, diarrhea 1,315, diphtheria 70, whooping-cough 67, fever 43, measles 28, scarlet fever 22.

The death-rates ranged from 15.1 in West Ham to 40.6 in Sunderland; Birmingham 20.9, Bradford 24.3, Cardiff 22.0, Huddersfield 27.0, Hull 30.6, Leeds 24.0, Liverpool 29.6, London 21.2, Manchester 31.0, Newcastle-on-Tyne 30.9, Nottingham 25.2, Portsmouth 16.5, Sheffield 29.3, Wolverhampton 33.2.

RECENT DEATHS.

John Benedict Curtis, M.D., M.M.S.S., died in East Cambridge, October 1, 1898, aged thirty-one years.

George Danforth Colony, M.D., M.M.S.S., died in Fitchburg, October 1, 1898, aged seventy years.

BOOKS AND PAMPHLETS RECEIVED.

Neurotic Eczema. By L. Duncan Bulkley, A.M., M.D., New York. Reprint. 1898.

Post-Operative Insanity. By R. Harvey Reed, M.D., Rock Springs, Wyo. Reprint. 1898.

Katatonia. By Frederick Peterson, M.D., and Charles H. Langdon, M.D. Reprint. 1897.

Acute Chloral Dementia Simulating Paretic Dementia. By Henry Waldo Coe, M.D., Portland, Ore. Reprint. 1898.

First Annual Report of the Trustees of the Boston Insane Hospital for the Year ending January 31, 1898. Boston. 1898.

The Annual Statistics of Manufacturers, 1897. Twelfth Report. Boston: Wright & Potter Printing Co., State Printers. 1898.

A Study of Four Cases of Full-Time Extrauterine Pregnancy. By James Oliver, M.D., F.R.S.E., F.L.S., London. Reprint. 1898.

The Advantage of Physical Education as a Prevention of Disease. By Charles Denison, A.M., M.D., Denver, Col. Reprint. 1898.

Twenty-eighth Annual Report of the Bureau of Statistics of Labor, March, 1898. Boston: Wright & Potter Printing Co., State Printers. 1898.

Medical Department of the College of Physicians and Surgeons of San Francisco, Third Session commencing October 3, 1898 and ending July 1, 1899.

A Contribution to the Surgery of Gastroptosis and Enteroptosis. Preparation of the Patient for Operation. By Byron B. Davis, M.D., Omaha, Neb. Reprints. 1897–98.

Upon the Existence of a Minute Micro-organism Associated with Cases of Progressive Portal Cirrhosis. By J. G. Adami, M.A., M.D., F.R.S.E., Montreal. Reprint. 1898.

A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By Richard C. Cabot, M.D. Third revised edition. New York: William Wood & Co. 1898.

Bulletin of the Harvard Medical Alumni Association, No. 12, Report of the Eighth Annual Meeting held in Boston, June 28, 1898. Boston: Published by the Association. 1898.

The Employment of Solutions of Toluidin-Blue as Collyria, and as a Stain for Corneal Abrasions and Ulcers. By Clarence A. Veasey, A.M., M.D., Philadelphia. Reprint. 1898.

Some Remarks Concerning Rectal Affections, with Especial Reference to the Physical Exploration of the Rectum. By Lewis H. Adler, Jr., M.D., Philadelphia, Pa. Reprint. 1898.

An American Text-Book of Gynecology, Medical and Surgical, for Practitioners and Students. Edited by J. M. Baldy, M.D. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

Proceedings of the Tenth Annual Session of the Association of American Anatomists, held at Cornell University, Ithaca, N. Y., December 28 to 30, 1897, to which is appended a List of Members. Washington, D. C. 1898.

Beneficial Effects of the Withdrawal of Bromides in the Treatment of Epilepsy. New Paths in Psychiatry. Vibratory Therapeutics. A Case of Amaurotic Family Idiocy with Autopsy. By Frederick Peterson, M.D., New York. Reprints. 1897–98.

A Text-Book upon the Pathogenic Bacteria for Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Medico-Chirurgical Hospital and to the Rush Hospital for Consumption and Allied Diseases, Philadelphia; Fellow of the College of Physicians of Philadelphia. With 134 illustrations. Second edition, revised and enlarged. Philadelphia: W. B. Saunders. 1898.

Address.

THE PHYSICIAN AND HIS SURROUNDINGS.[1]

BY J. S. GREENE, M.D., DORCHESTER.

Mr. President and Fellows of the Norfolk District Medical Society: *The Physician*, as the subject of an Annual Address before a Society of Physicians, may have sufficient interest to justify its selection for even more than two consecutive years. Especially may this be true as we approach the end of this half century, which has seen such manifold changes not only in drugs and appliances and methods of working but in modes of thought and social conditions.

The Address of 1897 was entitled *The Physician and his Armamentarium.* It was a masterly review of the material resources at the disposal of the physician of the present day, and a comparison of these with those of a generation or two ago. The reasoned appeal was for a discriminating conservatism which should keep what is best among the means and methods of the earlier time in the treatment of disease. To-day you are to consider

The Physician and His Surroundings, not a different subject, but another phase; and the plea is for recognition of a present need of the *individuality* of the earlier day, broadened to fit the conditions of the present.

Such individuality should vitalize, not supersede, a knowledge, even to mastery, of the enormously expanded resources of the art of medicine and of the principles by which those resources are made effective. It should aid the exercise of a restrained intelligence in the choice of therapeutic agencies, a profound and penetrating scrutiny into the causes of disease, and a discriminating and refined diagnosis. As the physician's armamentarium has become complex and elaborate, so has the structure of society of which he is a part. Formerly armamentarium and the man were all in all. Apart from drugs and appliances his power lay chiefly in the influence of his personality, strengthened by "that strange spell, a name."

To-day armamentarium is much, but the shadow of the mighty name has become faint, and *doctor* is no longer a word to conjure by. Nevertheless he stands, no shadow, but a substantial personality, not to dissect nor analyze, but to view as a moving factor in the life of the age. As in Dr. Tanner's study so also in this, a glance at the past will serve to set forth the present in its due proportions.

First, then, the physician of the mid-century, — what manner of man was he in his day and generation? The veterans of the profession to-day knew him in their boyhood. He was the family physician. Then the life of the community was simple and placid compared with the complexity and din of the present. The local carpenter, for instance, was the architect and builder, and there was no need of the licensed plumber. The intelligent farmer who at school inclined to arithmetic became the surveyor of the neighborhood. The woman's life was wholly domestic. Of course there were social gatherings of the people, but of concerted intellectual resource outside the great cities there was little besides the debating club, the circulating library, and now and then a lecture. There were three learned professions; the schoolmaster made a fourth; and this quadrilateral dominated the intellectual and the moral life of the community. In local politics two corners of the quadrilateral usually regulated the other two. If the lawyer and the doctor were at variance on the question of the minister or the schoolmaster, the tide of battle ebbed and flowed; but if these two powers agreed it was bad for the minister or the teacher upon whom they frowned. Perhaps the doctor was self-sufficient. If so who can wonder. Of the Art of Medicine as it then existed "all that was knowable, he knew it"; and, to adapt the remaining lines of the amusing quatrain on the famous master of Baliol College, "What he knew not wasn't knowledge." Perhaps the doctor was now and then intolerant. If so, it was a trait more or less characteristic of his time. Certainly he was self-reliant and fertile in expedient. He had need to be so in a time when in our State the only institutions for care and relief of the sick were the Massachusetts General Hospital, the Eye and Ear Infirmary and the Boston Dispensary, when medical schools were not only few but feeble, and post-graduate courses had not been dreamed of.

The physician of that day was not cosmopolitan. He rarely travelled far, and he gained most of his knowledge of the wide world from his reading. But let us not suppose that the physician of the mid-century was less qualified than he of to-day for successfully meeting the wants of his patients. He may have been less definite in his diagnosis, more empirical in his treatment, but he had more time to know his patients. He knew their constitution and temperament through his knowledge of lines of descent and the influences of intermarriage. What we trace by inquiry he possessed by inheritance and birthright. Perhaps he was born among them. Often in his college days he had taught school in some neighboring district. He knew how to coddle his practice. He called it husbanding. We do not hear the term nowadays. The process consisted in calling around at the house at odd times when he hadn't anything else to do, and was not in attendance upon any member of the family. It showed his interest and helped to keep himself in evidence. He grew to have a sort of proprietary feeling towards the family, and to be jealous of any poaching on his preserves. Naturally the other doctor also gave due attention to the art of husbanding; and, if the fields reclaimed by his own special industry were not broad enough to occupy all his energies, he would have a little time to spare where work seemed to be needed just over the border. Sometimes he could manage to be more or less definitely invited over. Generally, however, it was the men who were most busy and successful on their own reservations who were actually urged to extend their ministrations. Whichever way it came about, it made trouble, and caused ill-suppressed jealousy and dislike; and it was no easy matter for a family to change its doctor.

Thus the family and the doctor knew each other's hopes and fears, — shared each other's jealousies and rivalries; and in a closer and more enduring sense than now the doctor was the family physician. His patients were the same kind of men and women as those of to-day; but the times of which they were a part, the problems pressing upon them, the hurry and push of the course they traversed, how different!

Let us take a single example: Fifty and odd years ago, in this part of Boston which was the old town of Dorchester, was a manufacturer of chocolate. He built a mill, where he made the product himself, with such help as he required; and when he had a wagon load he drove into the city and sold his stock among the grocers. He was a large-minded, generous-hearted, public-spirited man, and he made a fortune by enterprise and thrift. At his hospitable board he entertained many men of note, and his bounty always went forth to the needy. Peter Parley made him the subject of a sketch in his magazine to inspire the youth of the land to generous deeds. By this man's will his thousands were distributed among his heirs; and this is one of the articles of that will: "Art. 7th. It has been my practice for years past to distribute to the deserving poor of this vicinity, Bread. I wish this distribution continued to the persons whose names stand on my book on pages No. fifty-one and two. And the same quantity as there mentioned to be distributed until, by death, removal, or better circumstances, the recipients shall be reduced to ten in number. Then I would have each survivor receive twelve dollars and the distribution closed." Such a man was the wealthy chocolate manufacturer of the earlier half of the century. We pass by the son, who inherited the business, and by it made his fortune. Then came a step-grandson of the elder manufacturer, the legatee of one hundred dollars by the will from which we have quoted. This legatee, then a poor young man, was enabled to purchase the business through the confidence of men of means in his honesty and capacity; and he, too, made a fortune. He, too, developed and showed to the world the traits which make for success. He, in his turn, was large-minded, generous-hearted, sagacious, enterprising, hospitable. Where his predecessor distributed tens and hundreds, he in life gave tens of thousands, and at his death the wonderful display of knowledge of the channels of beneficence and human sympathy through which by his will this multi-millionaire assigned his millions to the public good is now the admiration, the example of the world.

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[1] Address read before the Norfolk District Medical Society, May 10, 1898.

Parallels like this, though few so striking, could easily be multiplied. There is history in them, and better than citation from the newest cyclopedia they illustrate the momentum of our age. They are concrete examples, not merely of the resources of the time, but of the men who handle those resources and who are handled by them. They are the same kind of men that their grandfathers were, but changed in their attitude, — modified by their changed environments. The armamentaria of all these men are new and elaborate, and they, too, must assort and choose among the new and the old. It was the difference in the times rather than in the traits which in the elder manufacturer limited the exercise of these traits to the field of business and private citizenship, while in the younger the like traits were levied upon for the public service. What is significant for us in this regard is that in his conscientious discharge not only of the claims of private charity but of public responsibility, as mayor of Boston, and as member of congress for a Boston constituency, Mr. Pierce kept always in touch with the men who represented the worthiest ideals of the medical profession. He sought their opinions and welcomed their advice; and some of the acts which he accomplished under such inspiration, like the appointment of the first Boston Board of Health (whose chairman, of Mayor Pierce's selection, still honors his important office) and the stamping out of a serious small-pox epidemic, — acts like these, in their remoter effects, still powerfully affect the public health. The physician of the forties could influence his rich and liberal-hearted neighbors in the distribution of their private charities while public charities were few. The physician of the nineties helps to shape the channels through which private munificence flows not only to the individual poor, but to hospitals, to homes for aged and disabled, to institutions of learning, museums of art, and innumerable causes which bless, and will continue to bless, humanity.

This brings us in face of the relation of the physician to the science of preventive medicine. The physician in the earlier time knew no such science. To-day its problems everywhere confront him, and he should be able and ready to illumine the minds and urge the duties of his fellow-citizens and their legislators on subjects and measures which concern the public health. Of such subjects and measures we may recognize two classes, occupying different levels; a higher and a lower plane. In the higher must be classed such questions as the suppression or restriction of epidemic diseases, the better sanitation of communities, the wiser administration of public charities, and sometimes a voice in the nomination of the fittest persons to guide such causes and to secure for them their completest success. On this plane the physician often has with him the professional philanthropist, the practical politician and the force of public sentiment. His word has the weight belonging to the disinterested expert, and the cause he espouses triumphs, by reason of his advocacy, over the opposition of prejudice and selfish interests.

Also, there are measures of the lower plane, towards which the physician may feel himself likewise conscious of disinterested purpose and of expert knowledge, but where philosophic theorists and professional philanthropists combining with the forces of charlatanry may obscure the issue with imputations of arrogance and unworthy motives and with phrases about the liberty of the individual. The cause thus hampered may suffer check. The physician must console himself with the reflection that if he have felt constrained to break a lance in a field where the weapons and laws of knight errantry are not acknowledged, his defeat has been without dishonor since he has fought not for privilege nor emolument, and has kept his escutcheon clear. He will reflect that victory in this kind of contest would have been barren if it placed him too far in advance to receive the support of slow-forming public sentiment; and he will still labor according to his opportunities to the end that sound experience shall be received as guide,— that ignorant or false assumption shall no more have passwords accepted by the commonsense of common people.

Passing from the domain of Preventive or State Medicine, where science is the guide, to the region where medical art confronts the daily questions which disease and disability present, we enter the social field, where characteristics of our time may be noted as currents affecting the moral atmosphere and offering problems from a medical point of view. We need touch but lightly upon the trait indicated in the common remark, that the masses of mankind are gullible and that people like to be humbugged. This, so far as it is true, is a legacy to our time from all the past. We do not look forward to a day in the nearer future when there shall be no gulls. Having now in larger proportion than formerly a more or less at-leisure class, not absorbed in self-culture or the various forms of philanthropic endeavor, we have a relative excess of goodies of either sex whose office seems to be to tempt and catch the gulls for the quacks to pluck; and they approach their quarry from opposite edges of the field of medicine. From the one side come those who are inventing formulas by means of which everything can be simplified into a statement. They readily become proselytors, even martyrs if occasion serve. While dogmatists in religion and philosophy are losing ground and the system-mongers in medicine are dropping to the rear, there is still something in the old catchwords, and some of them are maintained with a sort of grim tenacity. From the opposite quarter come a less sophisticated but not less earnest band, who grope for what is mysterious and supernatural; and the tide of popularity is with these at present.

May not this current in society meet a social want in two ways: in that it may serve with some as a counterpoise to the disposition towards luxurious ease always seen in highly-developed social states, and with others more selfish as a hoped-for means of indulgence in that same ease with possible escape from penalties?

What we may hope for in the new century is first among the leaders of thought, and then among the intelligent and cultivated many, a reaction against the nervous hurry of life, a recall to rational ideals, an assertion of the prime necessity (as Hammerton puts it) of distinguishing what is attainable from what is impracticable. When this gospel is more widely preached and exemplified there will be readier acceptance of the truth that the basis of health is physiological hygiene; and faith in nostrums and fads will weaken like faith in dogmas and systems.

The physician is sometimes approached by some intelligent friend who says in substance, "I want you for your experience in sickness, for your knowledge of my constitution, or for your reputed skill in battling the enemy, disease; but I wish to know if I may try this or that potion or pellet for a disagreeable symptom, this or that fad or system to amuse my fancy with the idea that I am doing something, believing that it will do me no harm, if it does no good." To such inquiry he may take issue in this wise: Be the remedies inert or powerful, I care not. If you take them as remedies they are not harmless, and are the less so if they relieve. You take them for a symptom which is generally a sensation. The symptom ceases; another symptom or sensation is substituted; you are ready for another remedy. The system is unworkable. You cannot be always chasing symptoms. Symptoms are not always enemies; they are often friendly monitors, useful guides. When you are seeking antidotes for symptoms you are breeding attention which begets a progeny of new symptoms. Your best hope is in finding an adviser who has a sense superior to the mere hunting down of symptoms. If that adviser call himself a Pathist of any sort, he is superior to his system, which must, however, cramp and limit him in so far as he heeds it. To be symptom fighting is *not* harmless. It leads to symptom seeking and finding. It concentrates your attention upon yourself and your woes, and withdraws it from worthier matters. Symptoms are chiefly to be heeded as indicating conditions and tendencies. Come to me if you wish, but look upon me as an interpreter of conditions and tendencies. Do not appeal to me to relieve a symptom primarily, but to show you what symptoms may be disregarded, what ones guided, what others controlled or checked. If you ask me to study and understand you, to remove hindrances, to give you the best chance, I will try. If you wish to understand yourself, and to know your needs, your capacities and limitations, I will try to help you to gain something practically useful in such self-knowledge.

There are other fads that take the believer away from worse than useless attention to his worse self; but instead of an unworkable system, they supply a pseudo-system that is sure to be, by the undisciplined minds that are drawn to such notions, *over*-worked. The physician with sense and balance secured by discipline and large experience knows that he may well watch and guard himself against tendencies to cocksureness which may verge toward crankiness.

The men and women in the veal stage of mental insight who get a glimmer of a truth out of perspective and dress and decorate it into a doctrine are irredeemable cranks. Are they therefore to be avoided? Yes, doubtless, as a rule. But here comes in a paradox. There are probably some people of such mental mould (whether with too much gelatine and too little fibre or howsoever described) that they become squashy, and easily flop, and with difficulty are set upright again. Such people are the appropriate material for the cranks to work over, and into them the cranks convey the stiffening which brings the semblance of moral equipoise and thereby of cure,—a kind of cure which the man of science and sound sense would be powerless to promote, because incapable of what, to him, were humbug. That is the class of patients which the physician is, and may well be, glad to have taken in hand by cranks of whatever stripe; though he might wisely shrink from recommending such a process.

But I must not go farther astray from my chosen subject, the physician, to discuss the patient, for then there would be no end.

The doctor's duty toward himself is logically the first which confronts him, and the one which should be settled first.

Sir Alfred Milner, one of the most popular and successful among the public men of England, has said that,

"Our age of bustle succeeds a period of unprecedented fertility in time-saving inventions," and "in this fact we have only another instance of the old, old story, that the actual effects of any great change of human circumstances are constantly the opposite of what *a priori* reasoning would have led you to expect." [2]

We might make an extension of Sir Alfred's observation to this effect: that, while we see an age of extraordinary bustle attended, as might have been anticipated, by abundant evidence of overstrain, we do not everywhere see the physician as *a priori* we might have expected to see him, conspicuous in warning, interpreting, calming. On the contrary, we often find him foremost among the hurrying crowd, sharing the excitement of the struggle, seemingly unconscious that he is losing his place, his opportunity, and perhaps a great deal of himself, thereby supplying another example of the same old story. The physician's treatment of himself permeates his career, and immensely influences his true success in treating others. Undoubtedly he should *be* himself; and to be his best and fullest self he should not omit to study and observe himself sufficiently to understand his bodily and mental constitution, and thus to know not only his capacities but his limitations. Having this knowledge, he will place himself where he will find something to do, and he will not blindly be led to overdo. He will be likely to escape on the one hand the disappointment of utter failure, and on the other hand the humiliation of a break-down in health. He will neither miss his vocation nor omit his vacation.

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[2] Response of Sir Alfred Milner at a banquet given in his honor before his departure as High Commissioner to South Africa. See New York Nation, April 15, 1897.

Thus can he successfully adjust his relations with the world around him, and keep his poise. Thus can he qualify himself in that most convenient worldly wisdom which consists in rightly understanding individual human nature and accurately estimating the strength of motives and impulses. Thus can he exert his best influence over those who look to him for guidance; and though he " live laborious days and nights devoid of ease," his lot is still most fortunate.

He may not want to be beneficent, any more than Faust wanted to be, but he must be whether he will or not, if he attends to his work. He may vastly prefer that his play shall be wholly for fun, reckless of results; but he cannot choose but gain profit for his patients even here. If he devote himself to open-air sports, he gains personal experience in the conditions and limitations of outdoor exercise which increases his worth as an adviser over a wide range of remedial influences. If he prefer for his recreation the society of books, he is accumulating treasures of thought and fact which will inevitably be distilled in the crucible of his mental faculties — his powers of reasoning and comparison — and supplied to his patients at appropriate time in the form of apt illustration to impress the needed advice upon their minds. Whatever his tastes, they still contribute to his value as a guide to his fellowmen. He is a man, and nothing of human interest is foreign to him. So likewise, nothing in the range of human interest is useless in the equipment of the man for wise dealing as an adviser of men.

When the physician, by knowledge of himself and by practising justice towards himself, has learned to make the most of himself, he will practise justice towards his fellows in the profession.

It matters little whether his calling be styled a profession or a trade or a business. If it is a business, it need not be conducted as pirates conduct their business. If it is a profession, it will be none the worse if business methods share its conduct. Profession or business, it may well cultivate the industry, the accuracy, the sodality of the craftsman. Whatever we name it, it means work. No matter how lofty one's ideal, it must still be a practicable one. We want to make a living; we want money and fame: good. Let each get what he can of both. Only in our professional, business craft we defeat our purpose if we put either or both these objects foremost. The ethics of it are indispensable to real, ultimate success; and the ethics of it are very simply summed up in a motto: "The interests of our patients our leading purpose." And the second is like, "To our fellow-workers their chance."

It is a hustling age, and hence it is the age wherein the young men have their opportunity. They have come to the front; very well; let us all be, and continue to be, young. But ripe judgment can never remain at a discount. The high authority whom I have quoted says, in another utterance, "In these days of ever-increasing hurry and ever-quickening pace, a man requires more judgment, more balance of mind, more strength of character, than ever before, to husband his forces and control his life." [3]

These are traits of maturity, and we must agree that if old men may bustle, young men should cultivate balance of mind.

The physician as I view him holds a position unassailable. He has no rival. The specialists are not rivals; they are one and all his aids and allies; and in a sense sufficiently real, his subordinates. They are to him as the makers of main-springs or dials are to the watchmaker. He knows their work and can judge of its value; they do not and cannot know, though they may appreciate his. Who are the specialists? They are not dermatologists, neurologists, and the like, who avow a preference for treating one region of the body rather than the man in the body, — or else one class of diseases rather than disease. These are physicians, with especial lines of eminence. I would call them especialists rather than opprobiously name them pseudo-specialists. Compared with the ideal physician, they are like the man with expansive chest or huge biceps as compared with the Apollo Belvedere. Their advantages in so far as they are especial, deprive them of the poise which belongs to perfect symmetry. The specialists are sociologists, vital statisticians, climatologists, sanitary engineers, who deal at a distance with man in masses and groups, or with the grand environments of man. The physician is in direct relation with individual men. Or they are oculists, aurists, laryngoloists, etc., — surgeons one and all, who have limited their studies and directed their skill to one delicate or intricate organ or part of the body. Then there are the laboratory specialists, studying microbes, molecules and atoms, who are, by the minuteness of their scrutiny, as far removed from contact and insight with respect to the individual as are the specialists of the other extreme, who deal with masses. All these are allies, never rivals, of the physician. They could never trench upon his province if he were what he should be — the starter, the supervisor, the *deus ex machina* for the individual man.

I may not assert that the average physician fulfils this rôle; but this is surely what he should aim at, and is what he can arrive at. If by reason of the extraordinary activity of recent years in scientific research and in appliances therefor, sub-dividing and multiplying the lines of progress, enlarging the field of their distribution and accelerating the advance thereupon, the specialist, thorough, painstaking and confident, has become more conspicuous than the physician, we have here but one of the anomalies of a time of transition and readjustment. Just at present it seems as if specialism were running riot. The physician cannot, in justice to his responsibilities, when he sends his patient to a specialist, permit the patient, without a respectful protest, to be passed from one specialist to the next and the next — from the aurist, perhaps, to the rhinologist, from him to the craniologist, from him to the craniotomist — not knowing the while where to seek for the victim, unless perchance he seek and find him, or some of the pieces, in the jars, or on the slides, of the pathologist. Rather let the specialist continue the safe and time-honored policy towards patients of remanding them, with such special aid and advice as he can give, to the wise discretion of the physician, if such there be, who knows the individual and can allow for the personal equation.

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[3] Sir Alfred Milner, in an address at Froebel Institute, of whose success in practical affairs a discriminating admirer said that "it was a tribute to the world that Sir Alfred Milner could succeed in it." Id.

The physician who understands himself and, while claiming his own opportunity, accords to his co-workers their chance, is ready for his highest purpose, the interest of his patient. He is prepared to help him to make the most of himself; and this phrase is the expression of the highest ideal of his professional work.

It is a work which begins at the cradle, yes, at the womb of the mother. It would fain begin farther back if it could, even with the ancestors. Indeed it *sometimes* has its influence in matrimonial alliances; sometimes, too, in the conditions attending the inception, oftener still the development, of the human embryo. Introducing homunculus into the world, guiding him through the ailments of infancy and childhood, assigned to deal with his future mishaps and illnesses, is it not the logical, and, as humanity advances to clearer vision, the inevitable tendency, that the physician be looked to by the individual man for help to balance and harmonize his attributes, for aid to improve himself towards perfection, and so to improve the type? He has not to force himself forward, nor thrust his views upon unwilling minds. It is his advantage that people know where he is, and not until their conscious need presents is his opportunity at hand. Their disadvantage, often their misfortune, is that they know not where to look for help, know not even that they need help, — and when they know that they need, too often go to false guides, and are led still farther astray. This we cannot help and of it we need not complain. It is not our affair if untrained minds are unable to discriminate and to weigh the value of evidence, and if to such the advice of one person is as good as that of another. We cannot help it, but it is too often the spectacle of blind leading the blind, and the blind being willingly led. When they fall into the ditch together, it is but the working out of that principle of natural selection with survival of the fittest which has governed the evolution of life on this planet until now; which now, our wisest philosophers tell us is, notwithstanding an occasional war, gradually but surely dropping the way of struggle and fight, and pursuing its upward development through cultivation and expansion of the sympathetic, altruistic faculties of the soul. It is in this final phase of human evolution that the physician must more and more be recognized as leader. His field of labor may not be large, but is sure to be productive. The ignorant, the giddy, the narrowly prejudiced and the headstrong may keep aloof or fall away, but the intelligent, the teachable, the sensible, will seek him with evergrowing confidence. His *entourage* from patients, will often become clients, seeking his aid to keep the full advantage of recovered health, to avoid the pitfalls where lurk disease, as the *clientèle* of the wise lawyer look to him for guards against drifting tendencies towards litigation as well as for successful contests in the tribunals of law.

This doctor is not merely a counsellor, he becomes a judge. His highest function is to adjudicate. The patient comes to you and makes complaint. You hear the case, and find perhaps that he has mistaken the offender. Instead of head, for example, it is the stomach or eyes, or again, instead of any organ it is deficient power in the nervous centres. You then find that the supposed offending parts are the victims rather than the assailants; that the patient as constable has taken the side of the wrong party, and unwittingly made himself *particeps criminis*. His habits or his prejudices have borne false witness; but, called into court, break down in their testimony and humbly confess their error. In your conduct of the trial, you arouse the patient's sense of justice, and get him to espouse the cause of the injured organs or functions. At the least and worst, you make him admit that the attacked party is justified in resisting, and is not to be blamed if it reckons the officer of the law as an aggressor and singles him out as chief target for abuse. The judge should never spare the complainant from a clear showing up to himself. If the complainant's action is influenced by the spirit of self-sacrifice and devotion to supposed duty, the consequences may be as deplorable as if he were blinded by self-indulgence. He must be made to see the way he is going and to have glimpses of the remoter effects of his policy. Many are the saints on earth who have been led by the common-sense of a far from saintly adviser to see that God's work can best be done towards God's creatures by noting and respecting the God-given capacities and limitations of the would-be doer. The paradox is always being wrought out that it may be the wisest unselfishness to look out for number one.

"The thoughts of men have widened with the process of the suns," and those of us who have carried on our work within this generation, can see, as we review the field, that the work and thought of the physician have widened, and have relatively more than kept pace with the advance.

A generation ago, who among the elders could confidently affirm that the scope of the physician had greatly exceeded that of Macbeth's doctor, who to the despairing question, "Canst thou not minister to a mind diseased, raze out the written troubles of the brain, and cleanse the foul body of the perilous stuff that weighs upon the heart?" meekly answered, "No; therein the patient must minister to himself." And who, to-day, with the knowledge born of experience in the physician's work and word, would hesitate to assert that the predominant ideal and aim in our profession has widened to an extent to bring within its purpose, and almost comprise within its successful achievement, enough to warrant at least a qualified reply in the affirmative, when such question were repeated? Can we not, do we not — oftener, with clearer confidence, more effectively than they of old — say to the despairing, overburdened mind, "We can show you a way; we can pilot you; you need never despair. You are in the world to do one man's work, for all must work at something. The work assigned you lies before you, and you are in it and at it. But you must not be drawn into attempting the work of another man, nor of two men; and *your work* you must proceed with aided by the tools assigned you, namely, your own endowments of strength and capacity; and you must not work overtime. If you have entered upon more than this, you must pause, retreat if need be, enough to readjust yourself to actual conditions (partly, perhaps, but not wholly, of your own making), and then proceed, always proceed, limited, doubtless, but not balked, handicapped, if you will, but never crushed and never out of the procession. I cannot carry you; no one can do that; but I, better perhaps than another, can point out how you may carry yourself."

To many a morbid mind, this or something like, is the way to minister. Surely such methods and aims are far more constantly present to the mind and purpose of the physician than formerly, and they are essential in the evolution of the race. It is the work of exemplifying and inculcating to the community the best way of living, and to each individual how to minimize his risks, guard his vulnerable points, emphasize his advantages and stand four square to adverse circumstance.

Here our study of the physician and his surroundings may cease. From beginning to end the emphasis (whether we would or not) has been on the importance of the personal equation. Attention to this is the true individualism in medicine which displaces dogmatism and all the other isms. It means the influence of the personality of the physician and his recognition of the personality of the patient.

This art or faculty, amplified from the narrower conditions of the past and comprehending the complexity of the present, is the legacy of the physician of the mid-century to him of the century's turning.

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Original Articles.

THE ABUSE OF MEDICAL CHARITIES.[1]

BY JAMES C. WHITE, M.D., BOSTON.

Fellow Alumni: — I ask your kind attention to some brief remarks upon a subject which has strongly interested our profession of late, — the so-called abuse of medical charities. You are all well acquainted with the recent widespread agitation of the question, and with the efforts which have been made in this country and Great Britain to correct the evil by legislation and stimulation of public opinion. I should certainly not introduce the matter here, did I not feel that something remained to be said from the teachers' point of view, which should concern you, although I am aware that my views may not be those of many who are present.

I have been teaching medical students just forty years, and I have been in almost daily attendance upon out-patient service since 1850. I may fairly claim then to have founded my opinions upon the subject after experience.

I wish to state at once that I admit the legitimacy of the term "abuse of medical charities" in connection with the administration of hospitals and dispensaries, but it must be applied with discrimination. According to my observation, patients come to free hospitals because they are poor and unable to pay any professional fee; a majority, perhaps, because they expect to find in them a class of physicians whom they regard as more skilful than those who practise medicine in their humble neighborhoods in city or country round about us; because they are foreigners, in great numbers, paupers for generations, and accustomed to depend upon such charity in former homes; because, having obscure diseases, they are sent thither by their physicians' honesty and modesty for the benefit of superior skill; because, in the case of a large superior class, represented by school-teachers, students, shop-girls, artisans and domestics, they seek there a class of physicians whose services elsewhere they could not pay for; and, lastly, because, in much smaller proportion than is commonly supposed, some do not hesitate to seek there gratis professional advice they are well able to pay for outside.

The number of patients treated at the Massachusetts General Hospital, according to the last published report was as follows:

Patients in wards		4,304
Out-patients:	Medical	10,587
	Surgical	10,150
	Skin	3,309
	Throat	2,916
	Nervous	1,521
	Eye	1,384
	Total	29,867

Now were hospitals founded and conducted for the sole purpose of administering medical charity, I should agree with the most active agitators of the question of so-called reform that no excuse can be found for the existing method of administering them; for I have no doubt that a considerable proportion of the above-mentioned 30,000 patients were able to pay some fee. But there is another and great purpose for which hospitals are founded, in addition to the care of the sick, namely, the education of physicians, and in foreign governmental hospitals this object has always been predominant; hence their fame and vast usefulness. Without hospitals and dispensaries devoted in part to this purpose, there could be no medical schools, no such thing as an educated physician, no control of disease. A great school of medicine requires unlimited clinical material for the uses of its many departments, and it must be at its complete disposition. Now to accomplish this high purpose in this prosperous community of ours by means of pauper patients alone is entirely out of the question.

Permit me to use the requirements of my own department, the best known to me, in partial illustration. It is necessary to state that it is impossible to teach dermatology without abundant clinical material. There are more than one hundred diseases of the skin. Having no beds at its command, by means of which alone the natural processes of evolution and involution and the results of treatment can be adequately studied, the department must substitute the brief inspection of patients in illustration of each individual affection; and it requires a great number of examples to properly represent all phases of a disease. Indeed, to teach properly the three courses on our schedule — the third year, the fourth year, and the graduates — requires a much greater number than the three or four thousand patients at the command of the department. It is true that certain forms of skin disease may be best studied among the pauper class and our foreign population, such as the parasitic diseases and the so-called immigrant dermatoses; but it is even more important that the student should learn to know every type of disease, as it occurs in modified forms in the various occupations and in every class of society. He should have the opportunity of seeing, also, every possible example of the rarer affections, which are attracted to the clinic through the reputation of the hospital and its staff, which is the hospital, from all parts of the New England States and the British Provinces. Were such interesting cases treated by the teacher in his private office, he would be the gainer in fees, the student would be the loser of knowledge. The possible three or five or ten dollar patient is just as important to the student for educational purposes as the one-dollar, the fifty-cent, or the pauper patient. Were every patient able to pay something excluded from the clinic because some physician outside should receive this, proper clinical teaching would be no longer possible.

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[1] Remarks before the Harvard Medical Alumni Association, at the Annual Dinner, June, 1898.

I recognize no higher object than the education of the student of medicine to the highest plane of accomplishment, for this knowledge is later diffused along illimitable paths of humanity and charity. I would use, therefore, every means not immoral or inhumane, to this end, if essential. Good medical education is costly. It costs the family, mostly in moderate circumstances, much deprivation, often, to pay for it. The sister or widowed mother toils for the boy's sake for four long years. The student engages in the most wearisome, even menial, occupation, to get this much-prized knowledge. The facts which are laid open to the Committee on Scholarships are often pitiful indeed. But others are helping him, — the noble men and women of this community who have contributed so generously in the past and so often in recent years to the funds of the school and hospitals are aiding him; and so is the great body of teachers who work so faithfully and for so little recompense. Therefore let not the physician, young or old, who once received these same benefits, complain too loudly, if, in turn, necessary and legitimate use be made of a few patients, for the present student's sake, who might pay him a fee, nor forget that he was once well pleased to receive similar advantages.

Such use of clinical material then, representing all occupations and classes for direct purposes of teaching, is, I maintain, no abuse of hospital charity, no injury or degradation to the person seeking medical advice under such conditions, for recompense is made by every one of them in permitting themselves to be used for these ends. It is no light matter for a patient to go before a class and submit to inspection, more or less extensive; and every patient who grants us this privilege makes a positive and valuable contribution to the cause of medical education and humanity. This should be definitely understood by the public and the profession, that those who seek advice at hospitals and dispensaries, where medical instruction is given, on account of the reputation and skill of the teachers upon the staff, do allow themselves, as proper return for such advice, to be used for the purposes of clinical teaching. Objection is rarely made to such treatment by patients of any class; but they should be made to feel that an obligation on their part has been incurred, and has been thus honestly and fitly paid.

The loud outcry against hospital abuse and consequent pecuniary damage to physicians at large would, in my opinion, never have arisen, were it believed that patients were admitted to them for such purposes only. It is one more reason why the Medical School should have its own hospital; for its professional staff would consist of its teachers exclusively, and it would be recognized by the public and the profession that every patient admitted to its wards and out-patient departments would be used for clinical instruction. There could be no longer any question of the motives of its physicians or just ground of complaint of the abuse of medical charity, for all must admit the necessity and legitimacy of such use of clinical material in sufficient amount. This must be determined by the needs and opportunities of each department, not by indiscriminate accusations on the part of the profession at large. The honor of teachers must be trusted to this extent.

ROUND SHOULDERS.[1]

BY ROBERT W. LOVETT, M.D., BOSTON.

There are certain points in connection with the condition commonly known as Round Shoulders which are not generally noted in speaking of it to which my attention has been directed by a series of thirty-seven consecutive cases occurring in private practice where there were good opportunities for observation. Twenty-six of these patients were girls and eleven were boys. These cases have all been of the same general type differing chiefly in detail and, although in every respect corresponding to what is ordinarily known as round shoulders, it might seem better for reasons which will be explained later, in speaking of them to use the more correct term of faulty attitude, which is more in use among teachers of physical training than among medical men.

Round shoulders is in general the name given by common consent to a faulty position of standing and sitting most often described as a condition of adolescence. The attitude is perfectly well known and is familiar to every one. The head is carried not erect but run forward somewhat, the shoulders slope forward, the scapulæ are unduly prominent behind and the chest appears narrow and flat; such, in a general way, are the most obvious characteristics of this condition.

If any attempt to correct this vicious attitude is made it is generally done by the parents who put on a peculiar kind of suspender, holding the shoulders back, or sometimes a more elaborate attempt is made by means of some steel or brace devised by the instrument maker. It is not the common custom to recognize the importance of the condition or to regard surgical advice as necessary.

The affection is not necessarily, as it is usually described, one of adolescence, but occurs in young children, for of the series of cases spoken of above the children were from four to fourteen years old; the majority being from six to ten years old.

The patients in the series alluded to lived mostly in the city and belonged to the better class where food and hygienic conditions should be good. Twenty-one of these children were brought for consultation because they stooped or protruded their abdomens. Sixteen came for advice because they had "weak ankles" and the round shoulders were mentioned incidentally or not at all. The remaining case came for treatment for a loose semilunar cartilage and examination showed a well-marked vicious attitude. In certain cases, in my own opinion in a large majority of the cases, round shoulders of any considerable degree form only a part of a general faulty attitude, the characteristics of which, it seems to me, are fairly constant. Proceeding from the consideration of these cases and others seen in hospital practice the whole class may be described as follows: These children are often thin and generally pale, although occasionally they may be fat and rosy. As a rule they have grown rapidly. They are most often nervous active children and not infrequently they are inclined to constipation. They are generally clumsy in running, inclined to fall easily and unsteady in their more finely co-ordinated muscular movements; their "balance" is poor. They stand with shoulders drooping and the dorsal spine somewhat rounded backward. If corrected they straighten up wholly or partly for a moment and then fall back into the original position.

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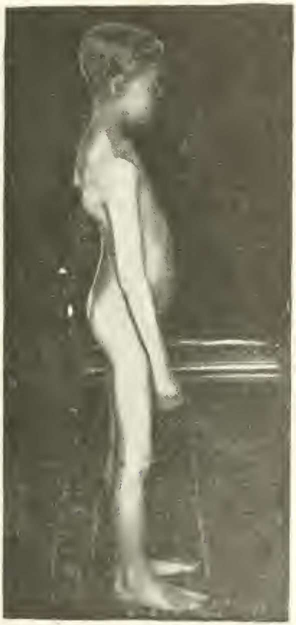
[1] Read by title before the American Orthopedic Association Boston, May 17, 1885.



What is equally characteristic with the position of the round shoulders is prominence of the abdomen, which is rarely absent. The lumbar spine is at times curved forward so that the patient stands with an unduly hollow back, at other times the lumbar spine does not differ from the normal curve, but the abdomen protrudes forward in its lower half and the walls seem lax and pendulous. In the severer cases that I have seen, an increased forward lumbar curve (lordosis) was present.

If the child is stripped to the hips and examined from in front and behind some lateral deviation of the trunk is most often noted. It was present to a well-marked degree in twenty of the thirty-seven cases noted above, which were routine examples of round shoulders and not ordinary cases of lateral curvature. In the other cases it was absent or very slight. The deviation of the trunk is seen to be due to a slight grade of lateral curvature of the spine, most cases that I have seen having a left lumbar curve with the corresponding slight curve to the right in the dorsal region. In no one of these cases can it be classed as anything more than the very earliest stage of lateral curvature and in only five had any lateral deviation been suspected. If every child with round shoulders of marked degree were stripped and examined, many cases of lateral curvature would be detected at a stage when treatment is generally satisfactory.

Pronated foot, "weak ankles," is another commonly associated symptom; indeed so constant is this association that in all children of from four to fourteen years old with weak ankles brought for treatment, it should make a part of the routine examination to examine the back for round shoulders and scoliosis. This is because "weak ankles" often are only the expression of a general muscular weakness.

Th re are, then, four elements most of which or all of which may be found in cases of so-called "round shoulders."

(1) Drooping shoulders and prominent scapulæ.
(2) Prominent abdomen, with lax walls.
(3) Slight lateral deviation of the spine.
(4) Pronated foot.

Of course these are, in practically all cases, merely expressions of the same underlying muscular weakness and the position is chosen which requires the least muscular effort for its maintenance; this peculiar attitude apparently represents the position of ligamentous support as contrasted with the erect position due to the good muscular balance and proper strength of the muscles.

The treatment should be both local and general. Local treatment should include exercises and, temporarily, support by a brace if necessary. General treatment should consist in an attempt to reach and correct the essential cause of the muscular weakness.

Local Treatment. — The routine treatment generally ordered for these cases consists of exercises prescribed to develop the faulty muscles. In extreme cases and where the muscles are unable to maintain a better position after a little exercise, temporary support is advisable in connection with the exercise. The ordinary apparatus used is a rigid waist-band for the posterior half of the body attached to two tempered steel uprights which hold the shoulders back by axillary straps at the top. In addition to the general developmental exercises some of the special exercises are as follows: Backward head bending; backward arm flinging; arch flexions backward; trunk twisting and similar exercises addressed to the extensor muscles of the spine and to the scapular muscles. Abdominal exercises are given for the weak and flaccid abdominal muscles. The scoliosis requires attention by special exercises, usually unilateral, to develop the muscles on the convex side of the lateral curve. The pronated foot or weak ankle demands a set of exercises devoted especially to the development of the tibialis posticus, the flexor longus hallucis, the short flexors of the foot and the adductors of the fore foot. Such exercises consist in rising on tiptoe and separating the heels when standing on tiptoe and sinking when in this position, walking with the feet in the position of congenital club-foot, that is, with the soles facing each other, and similar exercises. The exercises in general should be prescribed with the greatest care and watched most carefully. They should be done once or twice a day and be followed by a period of rest. The period of treatment is likely to continue over months at least and any cessation of it before the muscles are properly strengthened is likely to be followed by a return of the faulty attitude.

General Treatment. — In my own experience, however, the general treatment of these cases has seemed to me almost as important as the local. As a rule the children of this class that I have seen have been obviously overworked and too great demands have been made upon their muscular system, whatever one may say of their nervous system. The life of an active American child living in the city in the upper classes is, as a rule, one of incessant activity. Only too often the noonday nap is discontinued at an early age and after that from early morning until evening a continuous demand is made upon both muscle and brain. This demand is obviously well met by children of strong and perhaps average muscular development, but for growing children not of average strength with possibly a highly developed nervous system, the demand is too severe and the muscular system apparently from overfatigue fails to hold the trunk in proper position. All sorts of contributary causes come in to effect this and to cause muscular weakness, but no one of the series of cases of which I have spoken has had its origin in severe illness. Where I have asked for a written account of the child's daily routine I have found there, it seemed to me, sufficient explanation of the muscular debility in a child of less than the average muscular strength.

The parents are generally very hard to convince that this is the fact and particularly resent the use of the very legitimate word, overwork. They almost invariably claim that the child's health is constantly watched and that he or she is not allowed to get tired. Nothing less than the detailed account of the daily routine is of any value, when the surgeon may judge for himself. Not only must the daily school routine be followed, but music lessons, dancing lessons, drawing and similar demands fill up the rest of the day, in the intervals of which the overworked child is encouraged to take exercise and to play out of doors which, in some cases, is equally contributary to the undesirable result. The following will serve as examples of the state of affairs just spoken of:

Case I. A healthy girl, six years old, a child of muscular development rather below the average, was brought to me for well-marked pronated foot. She had had no pain but got very tired in the feet. Her abdomen was very prominent and her shoulders drooped forward; she had a slight lateral deviation of the spine; she had never had any severe illness and was considered by the parents perfectly strong. Her pronated feet were corrected by plates, and exercises and massage were ordered for the faulty attitude. She improved rapidly at first, but after a while the exercises ceased to improve her position in standing and inquiry as to her routine was made. Her day was as follows:

She got up at 7, had breakfast at 8, went to school at 9, came home at 12.30 and had her dinner at 1.30. She then played out of doors till 4.30 and then played in the house till supper at 5.30; she went to bed at 7. During this time the mother told me she was practically never quiet unless she was being read to, when she sat still. Here was a day reasonable enough at first glance, but one of unceasing activity and calling for muscular strength for twelve continuous hours.

An hour's rest in the horizontal position was insisted upon early in the afternoon, when the exercises again caused improvement and the progress has since been favorable.

Case II. A boy eight years old, of apparently average muscular development, had for some months been stooping and his abdomen was so prominent that his family noticed it. He stood with some slight lateral deviation of the spine, but he had no pronated feet. His routine was as follows:

Wakes at 6.30, gets up at 6.45, breakfast at 7.45. Walks or rides on his bicycle to school, a mile away. Gets home at 2.30, and has had no appetite for dinner. Plays out of the house or in it till 5 then reads or draws till supper at 6; draws again till 7.30, when he goes to bed. Here was a day of thirteen hours of continuous activity. As an adjunct to treatment by massage and exercise an hour's rest was ordered and he left school at 12 instead of 2. Within ten days he was noticed by his family to be standing much better, his lateral deviation has improved and he stands in an improved position.

Case III. This is an example of another type of case where even a modified day's routine proved too much for the individual boy. A boy, five years old at that time, was under my care ten years ago for faulty attitude. His general condition was so poor that a brace was applied and rest for three or four hours daily was insisted upon. This was followed by exercises and he made excellent progress. The brace was given up and I lost sight of him. This year he was brought to me again standing badly and looking thin and anemic; he had round shoulders, his abdomen was prominent, and he had a slight scoliosis, but did not have pronated foot. The parents had continued the daily rest and some exercises, but the routine, modified as it was, apparently made too great demand on the boy in his present condition. His daily routine was again amended by my suggestion and the exercises were increased with the most gratifying results. There was rapid gain in flesh and color and marked improvement in the faulty attitude. The table shows the changes made:

	Former plan.	Modified plan.
Getting up	7	9
Breakfast	7.30	8.20
School	8.30	9.30
Dinner	1.30	1
Rest	30 min.	30 min.
Play	2.30 to 5	2 to 4.30
Rest	5 to 6.30	4.30 to 7
Supper	6.30 to 7	7
Bed	8	7.30

These examples of the daily routine that occupies the time of these children are not, I fancy, exceptional and they serve only to illustrate what the ordinary children of that class are expected to do. But for certain children that is obviously overwork and overwork which is paid for by nervousness, anemia, muscular debility and resulting faulty attitude.

Round shoulders then should not necessarily be regarded as a trick which certain children have acquired and the view is often incorrect that if they will only make the effort they can stand and sit straight. It is better regarded as one expression of a condition of muscular weakness which often the children are unable to correct for any length of time on account of poor development of certain muscles.

In addition to the local exercises the general condition should be rendered as good as possible in every way and daily overwork should be avoided.

Chicago Hospital for Consumption. — Mr. Otto Young, whose son recently died of tuberculosis, is building in Chicago a hospital for tuberculous patients at an estimated cost of $65,000. It will accommodate 75 patients and will be provided with every device for the treatment of the disease by modern methods. — *Philadelphia Medical Journal.*

TWO CASES OF CLAUSTROPHOBIA.

BY ALBERT N. BLODGETT, M.D., BOSTON.

Case I. The patient is a man, age thirty-one years, of exemplary habits, who has always been well, with exception of occasional rare attacks of the nature of indigestion, and one well-marked onset of malaria some years ago. He is of unusual intelligence, well educated, and occupies an important and responsible professional position, requiring ability and a high degree of skill, the duties of which he performs with exceptional fidelity and success. Neither in his personal history or that of any member of his family is there any record of nervous disease, with the exception that some months ago, one brother suffered a cerebral hemorrhage with resulting hemiplegia, from which he is now slowly recovering. Syphilis and tuberculosis may be absolutely excluded. The patient formerly suffered from severe ocular symptoms, which have been entirely relieved by glasses correcting a marked degree of astigmatism.

Mr. L. first consulted me on account of peculiar "turns" which would occur without known cause, at any time of the day, never when asleep, and consisted, in outline, of a sensation of indefinable distress, apprehension, discomfort in the epigastrium, giddiness and a feeling of uncertainty in walking or standing. Examination revealed no adequate cause for the symptoms, and it was thought that they probably proceeded from indigestion; for which out-of-door exercise and a simple stomachic were prescribed. This was followed by relief from some of the symptoms, but the main trouble was not influenced by treatment. This slowly increased in severity, and the feelings of apprehension and giddiness increased in intensity, until on the occasion of his graduation from college, when standing with his fellows to receive his degree, he had an attack of unusually severe character and fell to the floor unconscious. He soon rallied and in an hour felt as well as ever. From this time the disease has steadily progressed, and its symptoms have become more pronounced, until a typical picture of the features of true claustrophobia is now present. The patient cannot under any circumstances attend church, cannot go to a party, theatre, assembly of any kind, nor even be in an ordinary group of persons without a most distressing sensation of apprehension and anxiety, for which he can give no reason, but which is so overpowering that he is at once obliged to seek the open air, or at least freedom from the crowd, when he experiences immediate and complete relief. On several occasions recently when this was not possible he has fallen to the floor and lost consciousness. He presents none of the symptoms of epilepsy, has no aura, never utters any cry, never bites the tongue, vomits, nor urinates, never has subsequent delirium or convulsion, and apparently suffers no mental detriment from the attacks, except the momentary nervousness consequent upon the feeling that he is attracting unenviable attention. No lesion of heart, lungs, arteries or other complication has ever been detected, although several careful examinations have been made. Appetite and sleep are normal, and the patient in every other respect is in perfect health. Hysteria may be safely ruled out, as the patient is of rather a phlegmatic temperament, and presents no stigmata of this condition, unless his astigmatic aberration should be so considered. He is of equable and amiable disposition, and is not worried by his infirmity, but now naturally avoids crowded assemblages from fear of attracting attention. He is active in athletic sports, and enjoys life, is jolly and shows no inclination to melancholy. There seems no doubt that the condition is a typical claustrophobia.

Case II. H. B., age fifty-nine years, unmarried. Has always been well and able to carry on his business as messenger for a commercial house, except as hereafter noted. His work is not arduous, and keeps him most of the time in the open air. Mr. B. consulted me about twelve years ago on account of an old irreducible inguinal hernia, which has existed for many years, and had caused him no trouble or inconvenience until that time, when signs of incarceration had appeared. He was admitted to the Massachusetts General Hospital, where with palliative treatment the signs of obstruction disappeared, and he has had no recurrence. There is no history of tuberculosis or syphilis. Gout and rheumatism may also be excluded. Insanity does not appear in the history of his family. Mr. B. has always been "nervous" in the ordinary sense of the word, but has carried on his business successfully for many years.

About ten years ago, Mr. B. began to exhibit symptoms of a character not before observed. He became restless, could not remain quiet but wished to be continually moving about; soon afterward he became apprehensive for his health, fearing a recurrence of the strangulation, of which there had been no signs; and at length imagined himself threatened with every disease which he might hear mentioned. This condition was associated with a mild degree of melancholia, which rendered him at times morose. During the past five years he has developed a fear of inclosed spaces, which from simple restlessness has now reached such a degree of distress that he can hardly be persuaded to remain indoors at all. He enters his house at meal times, eats with greedy haste and rushes out again as quickly as possible. If the meal be not ready when he arrives at his home, he cannot be persuaded to remain, but sallies forth for a time, when he returns to eat hastily and again escape from the house. At times his distress it so great that he cannot eat, and rushes out of doors without tasting food. He cannot attend church, cannot call on his friends, nor entertain at his own home, nor can he without the greatest effort restrain his terror when entering the business houses which his duties oblige him to visit. He walks uselessly many miles every day in order to escape entering a house, or being in a crowd. His sleep is disturbed, his appetite variable, and his temperament has become irritable and capricious. He has lost ten pounds in weight within a year, for no other objective reason than constant fear and worry. He has become somewhat emotional and cries easily if harshly addressed, or if opposed. His appearance is somewhat "slouchy," which is, however, said to have been his condition before the present illness. His countenance has a somewhat blank aspect, reminding one of the *facies* of general paralysis, but he exhibits none of the more characteristic symptoms of that disease. There are no delusions of grandeur, no interference with motion, no hallucinations, no ocular disturbances, tremor or other signs of that disease. He occasionally suffers from temporary disturbances of digestion which quickly yield to simple treatment. Remedies addressed to his mental condition have been quite without effect, and his condition in this respect seems to be slowly but steadily becoming worse. He is melancholy, and at times very despondent, wishes himself dead, etc.; but has betrayed no tendency toward self-destruction or other violence. He describes his affection as a distress which he does not understand, and is absolutely unable to control by any exertion of the will. In this case the actual symptoms are doubtless exaggerated by marked hysteria. It should be added that in this case there is distinct tachycardia, with at times a soft blowing mitral systolic murmur. No other morbid signs of any physical lesion have been observed on repeated examination.

These cases are recorded on account of their infrequency, and the feeling that this class of diseases is not sufficiently understood. When met, the malady is often wrongly considered as hysteria, or may be classed in the ranks of obscure mental or epileptic diseases. This is evidently a great mistake, and it is hoped that further study and the reporting of cases may clear up the uncertainty at present prevailing in this domain of disease, and enable us to know, if not to relieve, a condition most distressing to the patient and to his surroundings.

Professor Westphal, in an exhaustive article upon the allied condition of agoraphobia,[1] alludes to the mental state in that disease, which will fully apply to the condition in claustrophobia. He says: "All patients without exception positively affirm that they can give absolutely no reason for the distress which overwhelms them. It appears without warning, of itself, a sudden dreadful *something*." He adds: "I have in vain endeavored to obtain a more definite explanation of the psychological processes associated with an attack, but my patients — some of them very intelligent — can only relate the external circumstances under which the morbid condition arises and without exception can only say that all at once the distress and the thought associated with it are present with them, completely without their psychological volition." The process is evidently purely cerebral (psychical), and has quite as little analogy with *normal* psychical processes, and is as little to be comprehended through such analogy as is the case in other pathological sensations, effects, presentiments and impulses. From this group, which in its entirety represents the greater part of the domain of the so-called mental diseases, the condition of agoraphobia (and claustrophobia?) differentiates itself principally through the fact that the appearance of the pathological *effect* is connected essentially with certain external conditions or surroundings; circumstances between which and the effect produced there would seem to be absolutely no possible connection. In addition to this, there is wanting any indication of a real condition of mental disease.

Professor Benedikt[2] has described a case somewhat similar to that noted by Professor Westphal, in which he speaks of giddiness as the principal symptom, which leads Westphal to consider the condition to have been something different from that noted in the cases here quoted. Without more definite particulars it is not easy to decide on the correctness of his claim, but from the accessible data it would seem that there is a lack of similarity in the conditions which leads me to exclude it from present consideration.

Dr. B. Ball[3] has reported a case in which the following were some of the essential features: During the night the patient was seized with terror at the idea of being within a narrow space. Whenever he found himself in a room, he attempted to keep the doors and windows open. He insisted that the windows of his sleeping-room should remain open. He would get up several times in the night to see if his orders had been obeyed. At length, seized with an irresistible inquietude, he would rise in the middle of the night and wander in the streets until daylight. Questioned upon his sensations he stated that he experienced an agony of sensation of constriction like that felt in going through a passage more and more narrow, even to a point where he could neither advance nor recede. It was at this moment when he found himself in a position so intolerable that, struck with extreme terror, he went out of the house.

Meschede[4] reports the case of a student, twenty years old, who experienced vertigo and dyspnea every time he entered a small chamber or narrow place. He was soon obliged to quit his studies and live with a farmer. He could not sleep in a chamber, but camped at night in the fields or woods; and it was only during the most rigorous part of the winter that he consented to sleep in a large chamber, and on condition that the doors and windows be left open. Meschede considers this a particular kind of delirium which ought to be placed at the side of agoraphobia, for in both conditions the patient is unable to appreciate the dimensions of space.

Raggi[5] narrates the case of an artist who was painting in the company of his friends, and receiving their commendation. All at once he lost his presence of mind, and with the appearance of a man ruled by a tyrannical preoccupation he directed his steps toward the door, which was locked. He could not open it; he ran here and there, as if to escape some great danger. Perceiving a window he opened it, reaching the roof of a neighboring house, and thus from house to house until he reached the wall of a garden, and so the ground. On reaching this he at once became tranquil as before.

In the *Lancet*, February 26, 1898, is an article by Dr. R. Jones upon "Agoraphobia," an analogous nervous disorder in which the symptoms are exactly the opposite of those exhibited by the patients who are the subject of this paper. His conclusions have an equally valuable bearing upon the condition of claustrophobia. In relation to the pathology of the disease he says: "there seems to be a periodicity about this condition and it may (as Nieden has endeavored to show in similar cases) be epileptic in character, as the patient occasionally wets the bed. Nieden describes paroxysms of this sensation as being accompanied by considerable concentric narrowing of the field of vision both for white and colors. This he found to be bilateral and his interpretation suggested that it may have been of cortical origin, and caused by vasomotor spasm of the arteries supplying the visual area of the cuneus. He seems to be supported in the vascular view by the fact that in bilateral (double) hemianopia from disease (spasm?) of the vessels, a very small central field of vision is often left, due probably to the half visual centres just perceiving visual impressions. In some cases due to temporary spasm of the vessels, and not to permanent destruction of the visual cortex, this central remaining part of the field of vision is stated to be correspondingly brighter, although usually there is much diminished acuity."

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[1] Archiv. für Psych. und Nervenkrank., Band 3, p. 138, et seq.

[2] Allg. Wiener med. Ztg., 1870, No. 40.

[3] Annales Medico-Psychologique, November, 1879.

[4] British Medical Journal, vol. i, 1879.

[5] Gazette des Hôpitaux, 1878.

Further on, Dr. Jones adds: "Sir Thomas Grainger Stewart writing to me on November 11, 1897, stated that he referred to this condition ten or twelve years ago in relation to giddiness, and he then regarded agoraphobia as co-related with cliff or tower giddiness, the patient having somehow learnt to depend for his special equilibration upon visual impressions of lateral objects, and the absence of such impressions produces the symptoms." Westphal in 1872 described this condition and he characterized it as a neurosis allied to epileptic vertigo. C. W. Suckling[6] has published a valuable contribution to this subject under the title "Agoraphobia and Allied Morbid Fears."

In the *Boston Medical and Surgical Journal*, Vol. cxvii, p. 407, I reported a case of agoraphobia in which the symptoms, though of the same general character, were the exact reverse in expression of those exhibited in the present case. In that patient the features were briefly: a man over forty years of age, who had been totally blind since early childhood, having lost his sight, from some cause to him unknown, while crossing the Atlantic. He had preserved absolutely no visual impressions of external objects, with the single exception of an indistinct remembrance of the waves seen from the ship on which he was travelling. In that patient the nervous symptoms appeared long afterward, and progressively increased in intensity until he could hardly be induced to leave his room; and to pass from his office to his house only across the street caused him inexpressible agony. He finally became quite unable to go out of doors from this cause, and the account of his sufferings is very touching. He died at length of some obscure disease of pulmonary character, entirely unconnected with the nervous phenomena of which he had so bitterly complained. He never at any time showed the signs of mental aberration or of dementia, and was in no way allied to the so-called "degenerates," unless the existence of his double infirmities should be reckoned sufficient reason for such a classification, which I think quite unjustifiable in this case. Whether visual impressions play any part in the pathology of the cases of claustrophobia which furnish the basis of the present communication, I do not undertake to decide. In the consideration of the symptoms it would seem quite reasonable to suppose that if the patient could not *see*[7] the persons surrounding him, he would not suffer from the apprehension associated with a crowd of people. On the other hand, the patient who could *not* see, suffered acutely from the impression of illimitable expanse, although the element of vision was totally absent as a subjective factor. Dr. Jones states that "as to the pathology of impellant ideas, the presumption that irregular stimulation of isolated cortical centres should cause motor instability on the one hand, and vertiginous feelings (disturbed feelings and emotions — corresponding to the subjective aspect) on the other, would seem to be as favorable a hypothesis as can be advanced according to our present knowledge." This is as much as to imply that the various impellant ideas are due to a disturbance of *psychical co-ordination*.

It would seem to me that our knowledge of these obscure conditions of the nervous system is still very imperfect, and it is manifestly neither right nor warrantable to roughly classify the subjects of these and similar infirmities as either hysterical or insane, as is sometimes done, through the appellation "fixed ideas," "subjective hallucinations," or other terms adequately indefinite and meaningless, which only veil our ignorance of the real pathology or the actual seat of the disease. There is apparently as little connection between agoraphobia, claustrophobia, etc., and the true insanities, as there is between writer's cramp and tetanus.

M. Ball formulates the following conclusions:

(1) There exists a special form of delirium characterized by the fear of closed spaces.

(2) It acts like a true psychosis, and not as a simple sensorial trouble, since the patient has knowledge of his delirium.

The question suggests itself: May not these various forms of different functional psychical disturbances constitute the *mental equivalent* of the various *physical* or *motor* functional neuroses, such as writer's cramp, piano-player's spasm, telegrapher's cramp and other forms of professional disability or occupation-neurosis, which are evidently also due to some disturbance of the nervous system, the result of which is a greater or less degree of *motor inco-ordination*, but the pathology of which is equally obscure?

ON THE DISSEMINATION OF THE TUBERCLE BACILLUS IN COUGHING.[1]

BY J. J. CURRY, M.D., BOSTON.

C. **Flügge** recently reported in the *Deutsche Medicinische Wochenschrift* on his investigations as to the manner in which tuberculosis is spread. He disagrees with the generally accepted theory that the spread of tuberculosis is due mainly to the inhalation of dried sputum dust. He says: "It is not at all proven that the inhalation of dried sputum dust can produce tuberculosis in healthy man. If there is infection in healthy man this can be produced either by contact or inhalation, not so much by dried dust as by sputum which is spread in the air in finest drops in coughing."

According to Cornet, the real danger of infection is the sputum dried on the floor or in the handkerchief. This sputum dust remains dangerous for months. The experiments of Cornet are well known. Under Koch's direction he collected dust from the floor, walls and furniture in various hospitals, prisons, asylums and private rooms which had been occupied by phthisical patients. He determined the presence of living virulent tubercle bacilli by inoculating this dust into animals. Out of 118 dust samples from the hospital wards and rooms of phthisical patients 40 produced tuberculosis in the animals inoculated. He obtained virulent bacilli from dust from 15 out of 21 medical wards. In one case in private practice he found the dust in a patient's room infective six weeks after the death of the individual. There have been many other observers who have confirmed this work of Cornet. And to-day it is the opinion of investigators and of physicians generally that the chief factor in the dissemination of tuberculosis is the inhalation of dried tuberculous sputa as dust, mixed with air.

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[6] American Journal of Medical Sciences, vol. xcix, p. 476.

[7] Upon questioning one of the patients, he states that he *thinks* he would experience the distress if he felt that he were in a closed or crowded place even if he could not *see* the persons present or the size of the apartment.

[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, May 18, 1898.

In the short time allowed it would be impossible to consider Flügge's article in detail. The main points in it were the following:

(1) That it is not proven that dried sputum dust can produce tuberculosis by inhalation in healthy man. Flügge thinks that the cases supposed to be infected by inhalation of dust could be infected either by contact or by the inhalation of these fine droplets thrown out in coughing which, he says, float in the air for some time. He calls attention to the fact that on animals the attempts to produce tuberculosis by making them inhale dried sputum dust was seldom successful.

(2) That in coughing phthisical patients throw off fine fluid drops which contain tubercle bacilli. These drops, not visible to the naked eye, according to Flügge, are carried by very slow currents of air and remain floating for some time. These he considers the real source of infection, and to this condition rather than to the dried sputum dust he ascribes the dissemination of the tubercle bacillus. In this connection he compares the experimental work with moist sputa and dried sputa. He calls attention to the fact that experiments made by spraying tuberculous sputa in an apartment containing experimental animals invariably led to their infection, whereas the experiments with dried sputum dust, as noted before, were negative.

Flügge's work in brief was as follows:

(1) He found by spraying tuberculous material that fine drops not visible to the naked eye and capable of being held in the air for a considerable length of time contained tubercle bacilli.

(2) His assistant, Laschtschenko, found that such fine drops containing bacteria were formed in coughing, sneezing and loud talking. He proved this by mixing the bacillus prodigiosus with his mouth fluid. He set up agar plates in various places in the room, some near the ceiling. By this means he found that the bacilli were transmitted in coughing to a distance of ten metres. Then he made patients cough in a large glass box. This box was protected against the accidental flying-up of dried sputa by having the patient wear sterilized clothes. He placed bowls of water in various parts of the box, and these were found afterwards to contain tubercle bacilli. He exposed glass plates from one-half to one metre distant from a patient's face and had the patient cough against them. These plates he stained for tubercle bacilli. Oftentimes he could find no bacilli, but in hard-coughing patients early in the morning he obtained numerous bacilli and in *all* such cases tubercle bacilli were found in the mouth fluid.

Flügge concludes "that coughing phthisical persons can contaminate the air around them with these flying drops, which can cause tuberculosis in others. He says that the spread of tuberculosis in this way is possible. The question is, How great the danger? Some tuberculous patients cough with closed lips and do not bring up much. Others cough strongly and with open mouth. One can see the droplets and the mouth fluid contains tubercle bacilli. This is the class that is dangerous. He says, "There is no danger in the first class nor even in the second class if the patient holds the handkerchief against the mouth while coughing. The danger is not so great as would seem at first glance, as the avoidance of hard coughing and the use of the handkerchief before the mouth prevents the drops from going into the air." He makes suggestions for further work:

First, that on numerous patients the experiments of catching drops from coughing patients be made after the method used by Laschtschenko, namely, suspension of glass plates in front of patients, and these examined by staining methods. These observations to be made at various times of the day and the plates held at various distances. Second, examination of mouth fluid of the patients, as this, the mouth fluid, is better adapted to the formation of fine drops than the tough sputa. He also suggests investigation as to the kind of cough and other circumstances favorable to the spread of these drops.

While at the Hygeia Sanitarium, Citronelle, Ala., this past winter, at the suggestion of Prof. Edwin Klebs, I carried out Flügge's suggestions in the examination of twelve cases. All of the cases were of pulmonary tuberculosis and the sputum in each case contained tubercle bacilli. The mouth fluid was examined at various times of day, also glass plates suspended before patients at distances from one to three feet. The following were the results: Examination of mouth fluid showed that in nine out of the twelve cases tubercle bacilli were found at some time during the day. The examination was by staining method. The bacilli occurred usually in very small numbers, though in three of the cases many bacilli were found at nearly every examination. Examination was made in the morning, at noon and at night. In the early morning the bacilli were most plentiful. In the other six cases only a few tubercle bacilli were found and these generally in the early morning, though after a coughing spell at any time of day they were usually found in small numbers. In one case of a patient who had considerable expectoration and many tubercle bacilli in the sputum, only one tubercle bacillus was found after over an hour's careful search. In another case only three bacilli were found after the same length of time spent in examining the specimen. In three of these six cases it was only after a long search that tubercle bacilli were found and in all the cases I often would not find any. In the three cases in which no tubercle bacilli were found in the mouth fluid all had bacilli in small numbers in their sputa. On plate examination one-half of the cases showed negative results. It is worthy of note that *all* these cases had a low cough and kept the lips closed during coughing. Of the others, six positive cases, every one had a loud cough and kept the mouth open during cough. In the examination of these plates two kinds of drops were noted. One class, fine drops, some of them found with difficulty on stained slides and containing chiefly mouth fluid. Others, larger drops, from one to five millimetres in diameter, which apparently came from the trachea. These latter presented microscopically the same appearances as a small drop of sputa. In these drops the bacilli were most frequently contained; and in these also the bacilli occurred in the greatest numbers. The small drops only occasionally contained tubercle bacilli, and then usually in very small numbers. In one case as many as twenty-seven and twenty-eight tubercle bacilli were found in the larger drops.

Of course, this is a very small number of cases, but the results correspond to what we would expect to find. In the hard, open-mouth cough large-sized drops are thrown from the trachea up against the palate and then out of the mouth. We would hardly expect to find large numbers of tubercle bacilli in the mouth fluid. The bacilli usually do not separate in any numbers from the sputum passing through the mouth, and the flow of saliva, drinking, swallowing, etc., helps to keep the mouth clear. In the experiment with the prodigiosus we do not have by any means a similar condition to that which exists in the mouth fluid of phthisical persons. In the first place in phthisical patients tubercle bacilli occur only in small numbers. In this experiment with the prodigiosus we have enormous numbers of bacilli. Every little droplet contains them. The experiment is an interesting one and explains many of the cases of transmission of such acute diseases as diphtheria, tonsillitis, etc., but in the transmission of the tubercle bacillus coughing does not seem to be such an important factor.

In regard to Flügge's theory that it is by these small drops expelled in coughing that the tubercle bacilli are disseminated; there is no doubt that this is not only possible but even probable, but there is reason to believe that he has greatly exaggerated the danger. These small drops do not all contain bacilli; only a comparatively small number do, and such small droplets readily become dry. The question of how frequently this condition may cause inhalation tuberculosis is a hard one to determine. There appears a danger that does exist, not mentioned by Flügge. This is, that these larger and smaller drops very soon become dried and act the same as so much dried infectious sputa. For this reason it is important and demands attention. That dried sputum dust can infect by inhalation has recently been demonstrated by Cornet. Cornet on March 16, 1898, before the Berlin Medical Society, reported the result of his most recent work. Cornet's first attempts at producing infection in animals by blowing dried sputum dust were failures. He attributes his former failures to his faulty and artificial methods. In his later work he tried again under natural conditions, and was successful. He took an old carpet infected with tuberculous sputum dust and shook it in a room. Two days later he placed 48 guinea-pigs in this room. Out of the 48 animals, 46 of the pigs became infected with tuberculosis. They showed extensive lesions in the lungs and also in the abdominal organs.

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Clinical Department.

POISONING FROM HEADACHE POWDERS.[1]

BY ROBERT W. GREENLEAF, M.D., BOSTON.

The following case is worthy of note as it emphasizes the danger incurred by the laity when taking medicine on other than qualified medical advice.

The patient, Mrs. M. B., forty-eight years of age, came to the clinic of Dr. Frederick Coggeshall at the Boston Dispensary on April 12, 1898. Her symptoms appeared so urgent that immediate death was feared. I report the case through the courtesy of Dr. Coggeshall, who had called me in consultation and had placed her later care in my hands.

It seems that Mrs. B. had left the Convalescent Home of the Boston City Hospital on the preceding day and that, owing to various anxieties on reaching home, had been taken with a headache. To relieve this she sent to a neighboring druggist for some medicine. A box of "headache powders" was given her. The powders were warranted as "A positive cure for Sick and Nervous Headache." They were sold under a trade name and no cautions as to their dangerous properties were specified. Each contained three grains of acetanilid and two grains of phenacetin besides a little caffeine. Of these powders she took five during the night, thus giving her fifteen grains of acetanilid and ten grains of phenacetin. She did not sleep, and, though her headache was relieved, she felt so poorly that she came to the Dispensary in the morning for advice. Her exertions in getting there weakened her dangerously and she was assisted at once into the clinic. The symptom which especially attracted our attention was the extreme degree of cyanosis. This was of a peculiar bluish tinge. It was most marked in the fingers and lips and it spread out into surrounding areas in a diffuse fashion. Her pulse was weak but otherwise she did not appear so ill as the degree of cyanosis would lead one to expect. Examination of the heart, lungs and urine did not reveal a sufficient cause for her condition. A few râles from a chronic bronchitis and a weak heart were the only noteworthy signs excepting the cyanosis.

The immediate treatment consisted of rest and aromatic spirits of ammonia. Under these her strength gradually returned.

The diagnosis was established with difficulty, as at first she was too prostrated to give an account of herself and denied having taken any medicine. Indeed not till making a careful eliminative diagnosis with my students some two hours later did we ascertain the cause of her danger. She then told us of her headache and its treatment and the exact data were subsequently confirmed by the druggist of whom the powders were purchased.

A visit to the patient in her home five hours later found her comfortable but still markedly cyanotic. This symptom gradually wore away and disappeared by the following day.

The poisoning was probably due chiefly to the acetanilid, as that drug predominated in the powders and as it is relatively more active then phenacetin. From the cases noted by others one would say that the toxic symptoms of the two drugs were somewhat similar, both causing the peculiar cyanosis noted in our case and usually prostration and lowering of the temperature. There is less tendency to vomiting and excessive perspiration than in antipyrin, the other drug frequently found in "headache powders." When antipyrin was beginning to be used in this vicinity, the writer, then a hospital interne, recalls seeing it used extensively in different diseases,— and in much larger doses than most of us would dare to use it to-day. He has seen dangerous results follow the use of ninety grains given in hourly doses of thirty grains each. Yet in other cases this large dose was safely borne and produced only a considerable lowering of the temperature, profuse sudorisis and prostration.

The toxic dose of antipyrin may thus be stated as approximately ninety grains, that of acetanilid as twenty or more, and of phenacetin as thirty or more. Idiosyncracies and special conditions modify this estimated dose to a greater or less degree. In our case toxic symptoms appeared from a relatively small dose. Her nervous and debilitated condition combined with the fatigue on exertion were also probably factors in so seriously affecting her.

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[1] Read at a meeting of the Clinical Section of the Suffolk District Medical Society, May 18, 1898.

Elimination takes place with therapeutic doses in a few hours. With toxic ones it requires a longer interval. Possibly cyanosis lasts longer than during the actual presence of the drug, as it is considered that changes occur in the blood. It is found that cyanosis persists in toxic cases for from one to four days. Fatal cases are rare. Of thirty-eight cases collected by Hare but three were fatal.

Toxic symptoms may follow the administration of the drug however exhibited provided that it can obtain an entrance to the body. Most of the reported cases of poisoning have occurred where an overdose had been taken internally. Several cases, however, from its external use are on record. As acetanilid is of considerable value for surgical dressings it is important to remember that it is dangerous if it can be absorbed in any quantity. One serious case of poisoning is reported by Dr. Irving R. Snow [2] where the navel of an infant had been dressed with it. Another case is reported by Dr. Richard C. Newton [3] where acetanilid was used as the dressing in the case of a child suffering with extensive burns of the face, arm and leg. In this case twenty to forty grains were used five times in nine days. If employed for two successive days the toxic symptoms came on after the second dressing.

The practical application from these cases is that when we wish to use acetanilid externally we should bear in mind the same caution we have been accustomed to observe regarding cantharides, belladonna, etc., namely, to be cautious in applying it a second time in the same place or on a freshly denuded surface.

As to the treatment of acetanilid or similar poisoning, the important measures theoretically and shown to be of value in recorded cases are rest, recumbency, warmth, stimulation as by aromatic ammonia — also atropia and strychnia. Elimination should be furthered by attention to the skin, bowels and kidneys.

The State Board of Health has recently called attention to the dangers to the community from the ill-advised use, now so common, of acetanilid and allied drugs in "headache powders." [4] The analysis of several proprietary kinds is therein given. Acetanilid appears to be the important ingredient in most of the powders examined.

The case reported this evening is a striking illustration of the wisdom of their caution.

A Good Effect Spoiled. — "A distinguished physician of the medical establishment of the court, being on one occasion called to an exalted personage, had a notice posted up intimating to all whom it may concern that 'Dr. ——, having been summoned to Balmoral to see Her Majesty, will be unable to lecture to-day.' The effect of this announcement was rather spoiled by the fact that some one, with an inopportune display of loyalty, had written underneath 'God Save the Queen!'" — *The Practitioner.*

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

E. W. TAYLOR, M.D., SECRETARY.

Regular Meeting, Wednesday, May 18, 1898, Dr. W. F. Whitney in the chair.

Dr. Curry read a paper on

THE DISSEMINATION OF THE TUBERCLE BACILLUS IN COUGHING.[1]

Dr. Otis: Dr. Curry in his review of Flügge's paper and from his own investigations has raised a very important and suggestive question, which his experiments have partially answered. The ubiquitous bacillus seems always to be *en evidence*, and the task of completely eliminating him from the environment of tho coughing consumptive appears well-nigh hopeless. At the same time, as Dr. Curry concludes from his experiments, tubercle bacilli do not seem to be very largely disseminated in coughing if the patient uses due precaution, and has trained himself to reduce his coughing to a minimum. Although the risk of disseminating the bacilli in this way exists, yet it does not appear so far to be a very great one, for Hance, in "A Study of the Infectiousness of the Dust in the Adirondack Cottage Sanitarium," proved by the inoculation of guinea-pigs that sixteen out of seventeen cottages in habited by consumptives for as long a period as ten years were free from infectious material, the sputum being properly disposed of.

In the seventeenth cottage the patient has disobeyed instructions as to expectoration. The same negative results were obtained by Heron in the City of London Hospital and by others. Furthermore, Hance found that not one of the twenty to twenty-five attendants at the Adirondack Cottage Sanitarium ever developed tuberculosis; and that no patient who was admitted suffering from pulmonary disease without the bacilli being present ever subsequently developed them. Williams, of the Brompton Hospital, reports the same result; and in the "Free Home for Consumptives" in Dorchester, where there are twenty-eight consumptives in the later stages of the disease, constantly coughing, no case of tuberculosis has arisen among the attendants or nurses. One nurse had pleuritic effusion but entirely recovered. It would seem, then, that the risk of infection from coughing was a small one in comparison with that from the dried sputum. And this being properly disposed of there then appears to be very little evidence that there are many bacilli about in the wards or rooms occupied by consumptive patients.

In this connection I would like to exhibit two sputum cups, one the so-called Dettweiler pocket spit-cup of glass, and the other a modification of this, devised by Dr. S. A. Knapp, of New York, and made of aluminum: these can be used by the patient out of doors and carried in the pocket; or, when the patient is confined to his bed, can be kept under the pillow and used without getting up and thereby incurring the risk of a chill from the exposure. They can be readily cleansed by boiling, and the cover shuts tightly preventing any leakage. When carried about they are so small and neat that they do not attract attention.

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[2] Medical Record, May 29, 1897, p. 788.

[3] Loc. cit., March 7, 1896, p. 333.

[4] See Weekly Bulletin, March 12, 1898.

[1] See page 368 of the Journal.

Dr. Bowditch: I have listened with much pleasure and interest to Dr. Curry's paper. It brings up the possibility, certainly, of the spread of the bacilli by coughing. I have always felt that if the patient was coughing severely he was liable to eject small particles of sputa and have therefore often cautioned patients to hold something before their mouths when doing so, at the same time avoiding as far as possible spreading that spirit of what may be called terrorism of infection among the community, a danger which I think the sweeping, carelessly-made statements of some medical men are apt to bring about.

Dr. Otis has spoken of the experiments of Hance and others in the different sanataria for consumptives in trying to detect the presence of bacilli in the rooms occupied by the patients. Judging by their results it would hardly seem that from coughing alone the number of bacilli ejected in a patient's room could form a large factor of danger inasmuch as no bacilli could be found in the dust of rooms where the patients had been careful merely in the disposal of the sputa, regardless of coughing. In regard to the sputa cups used at Dettweiler's Sanitarium and by Dr. Knapp, as shown by Dr. Otis, I confess I can see no advantage in them over the Japanese paper handkerchiefs used at the Sharon Sanitarium. When walking on the grounds the patient expectorates into the paper, rolls it up and places it an ordinary rubber tobacco pouch, the contents of which are burned later and the pouch cleaned. It is a matter of taste after all, but the latter method is pleasanter to me.

I am very glad Dr. Curry has brought up this subject for it must be met, but I feel very strongly that we must be careful in our statements to the laity upon such subjects, lest we stir up the spirit of terrorism to which I have already alluded. Only the other day a gentleman who had read somewhere a statement regarding the subject of Dr. Curry's paper, asked me if I thought his daughter was in danger from a patient's coughing in the house next his in the country, inasmuch as he read something which had led him to this belief in a State Board of Health Report lately. I told him I thought the danger was practically *nil*. I have seen too many instances in the last two or three years of absolute fright on this subject among the laity, not to make me very cautious in expressing my views to them when trying to inculcate strict cleanliness in the care of the patient's surroundings.

Dr. Greenleaf read a paper on

POISONING FROM HEADACHE POWDERS.[2]

Dr Knapp: I remember two or three years ago that Dr. Wadsworth asked me to see a young woman at the hospital, who was suffering from an intra-orbital growth which probably extended into the cranial cavity. Her headaches were very intense and when she came to the eye clinic she presented a very marked cyanosis. Her whole body was exceedingly blue. When we came to question her we found she had been buying headache powders and taking them on her own responsibility several times a day for several weeks. The special name of the powders I do not now recall and I do not think we ever had them analyzed to know exactly what they contained, but they probably contained some of the coal tar derivatives. One curious feature about her cyanosis was that in spite of its being extremely marked, it seemed to interfere comparatively little with her getting about. She walked about very well, the pulse was in fairly good condition, she was not very much troubled for breath. We took her into the house and stopped the headache powders. The cyanosis gradually died away; further investigation of her case led us to put her on anti-syphilitic remedies which gave considerable relief. On the other hand, I have had occasion only this afternoon to look up certain cases of cerebral tumor where the coal tar derivatives were used in the treatment. One case took somewhere in the neighborhood of 20,000 grains of phenacetin in the course of a year in doses of thirty to ninety grains a day without the slightest signs of any disturbance, and his heart was in sufficiently good condition at the end of that time for him to have an operation performed upon the brain from which he made a satisfactory operative recovery, although it was merely a palliative operation. I saw yesterday the brain from another tumor case which had taken antipyrin at the rate of about 20,000 grains in a year, in similar doses, which afforded relief to the headache and yet did not give rise to any circulatory disturbance at all or any indications of poisoning. She also went through a palliative operation some three years ago in a perfectly satisfactory manner, and since the operation, which relieved her headache very materially, she continued the use of antipyrin in smaller and less frequent doses, the operation not having completely relieved her headaches.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-fourth Annual Meeting held at the New York Academy of Medicine May 26, 27 and 28, 1898.

FIRST DAY. — THURSDAY.

Dr. G. H. Hammond, of New York, President, in the chair.

RESULTS OBTAINED BY PARTIAL THYROIDECTOMY IN EIGHT CASES OF GRAVES' DISEASE.

Dr. J. Arthur Booth, of New York, read a paper with this title. The following were the results obtained: five were cured, one improved, one unimproved, and one died.

Conclusions: (1) Cases of Graves' disease may be entirely cured by operative measures.

(2) Pathological and clinical evidence is in support of the view that the symptom complex is the expression of a primary neurosis multiplied by a secondary glandular intoxication.

(3) While the ultimate cause of the disease of the gland is still a matter of speculation and a mortality of seven per cent. after operation is reported, we cannot justly recommend it as a routine plan of treatment.

(4) Sudden death may occur in the course of, or shortly after, operation, and has not as yet received a satisfactory explanation.

Dr. J. J. Putnam, of Boston, said he had reported two cases of thyroidectomy for Graves' disease, with death following in one instance and gradual improvement in the other. Since then he had another case, which resulted fatally after the removal of the cervical sympathetic.

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[2] See page 370 of the Journal.

Dr. William M. Leszynsky, of New York, said he had had two cases operated on during the past year. In one there was considerable improvement in all symptoms. The other died thirty-six hours after the operation.

ACUTE MYXEDEMA (?) WITH TACHYCARDIA, DELIRIUM AND DEATH.

Dr. William Osler, of Baltimore, described the case of a man, age thirty-one, of good family history and good habits, who, from October 1, 1896, to January 1, 1897, increased in weight from 145 to 192 pounds. Except an occasional attack of diarrhea and an increasing irritability there were no other symptoms. On February 5th he went to Florida, and there became excited and delirious and had delusions.

On reaching his home there was slight exophthalmus. The subcutaneous tissues were everywhere infiltrated, brawny and did not pit; the skin was dry, and on the chest was a red papular rash. The pulse was 120 per minute. The thyroid gland could not be felt. The temperature normal. The urine free from albumin and sugar. For the first two weeks he remained in about the same condition. He had attacks of diarrhea, and at times there was blood in the stools. On March 1st he was given thyroid extract. He lost rapidly in weight and became delirious. Albumin and sugar appeared in the urine. He grew progressively weaker and died March 13th. Dr. Osler remarked that myxedema has followed in a considerable number of cases of exophthalmic goitre, and at times certain symptoms of the latter disease have appeared in patients taking the thyroid extract. In this patient there was a rapid increase in the subcutaneous tissue, with a bloated infiltrated appearance of the face, but not the waxy characteristic facies of myxedema. The increase in weight and size was remarkable, so that the patient had to have a completely new outfit of clothing.

Tachycardia, tremor and slight exophthalmus supervened, with mental symptoms. Coincident with the use of the thyroid extract, of which only twenty-five grains were given, he began to lose weight, albumin and sugar appeared in the urine, he became delirious, and died of exhaustion.

Dr. Booth referred to one of his cases (the one in which there was no improvement after thyroidectomy) which presented some of the symptoms mentioned by Dr. Osler.

Dr. Osler thought that in those cases where sudden death follows the operation it is possible we may have a condition of so-called *status lymphaticus*, in which we know that sudden death occurs.

AMYOTROPHIC LATERAL SCLEROSIS WITH BULBAR SYMPTOMS.

Drs. F. X. Dercum and **W. C. Spiller**, of Philadelphia, reported a case of this disease. The microscopical examination showed degeneration of the lateral columns, involving a greater area than that occupied by the crossed pyramidal tracts, and a slight sclerosis of the posterior columns in the lower cervical and upper thoracic regions. The pyramidal tracts were not degenerated above the pons. The bulbar symptoms were due to degeneration of the motor tracts and not of the motor nuclei. The writers discussed the significance of the degeneration in the posterior columns and showed how the symptoms of amyotrophic lateral sclerosis could exist without degeneration of the pyramidal tracts.

AMYOTROPHIC LATERAL SCLEROSIS

was the title of a paper by **Dr. E. D. Fisher**, of New York.

He considered amyotrophic lateral sclerosis a disease of a similar character to that of progressive muscular atrophy, chronic poliomyelitis and tabes. All are simply degenerative diseases of the nervous system. Amyotrophic lateral sclerosis is not an entity, and the name in future will probably be abolished. The author presented microscopical sections from a case which was a typical clinical picture of amyotrophic lateral sclerosis, and showed disease of both lateral and posterior columns and the anterior horns.

Dr. Dercum said that the case reported by Dr. Spiller was apparently one of lateral sclerosis, the lateral column symptoms preceding the muscular atrophy. The presence of the bulbar symptoms was probably referable to minute lesions in the border tracts above the nuclei. He was hardly prepared to go as far as Dr. Fisher in regarding tabes as being actually related to the disease which we know as amyotrophic lateral sclerosis.

Dr. Charles K. Mills, of Philadelphia, said there are three distinct sub-types of this disease. In one type the symptoms of so-called primary lateral sclerosis develop early, with contractures and bulbar symptoms later. In the second type we have muscular atrophy in the limbs, and in the third type the special bulbar symptoms develop very early.

Dr. P. C. Knapp, of Boston, believed that while the three types mentioned by Dr. Mills were now recognized, many transitional types were met with which did not fit any one of them. We must assume that there is but one pathological entity.

Dr. H. M. Thomas, of Baltimore, agreed with Dr. Knapp. He thought that amyotrophic lateral sclerosis is a bad name, combining, as it does, a symptom and pathological finding in one term. It would be better to consider these conditions as due to degenerative lesions in the motor tract, which are simply variations of one and the same trouble, sometimes beginning in the upper motor segment, sometimes in the lower, and usually involving both.

SYRINGOMYELIA AND TABES WITH SENSORY DISSOCIATION ON THE TRUNK.

Dr. Hugh T. Patrick, of Chicago, reported a case of syringomyelia showing analgesia of almost the entire trunk, including the arms, with a narrow zone of tactile anesthesia about the middle of the body such as had been recorded by Laehr and the author as occurring in this disease. Two cases of locomotor ataxia that presented almost the same sensory conditions were then described. This sensory dissociation on the trunk was opposed to the rule in tabes, for in this disease the sensory blunting on the trunk was usually a tactile anesthesia with no analgesia whatever or only a comparatively narrow zone in the middle of the anesthetic area where pain sense was lost. One of the cases of tabes, moreover, presented atrophy of one trapezius muscle and deformity of one foot which were almost identical with like conditions in the patient with syringomyelia, and had, besides, suffered spontaneous gangrene of two toes, a complication much more characteristic of this latter disease than of locomotor ataxia.

SYRINGOMYELIA WITH UNUSUAL SYMPTOMS.

This was the report of a case by Dr. William N. Bullard and Dr. John J. Thomas of Boston.

A boy previously healthy and of fairly healthy antecedents, when three years old became subject to attacks of headache of much severity lasting an hour or more; these were soon accompanied by vomiting and increased in frequency and severity. This condition continued three years, growing gradually worse, and at the end of that time staggering was noticed and a severe double optic neuritis occurred, which soon produced double optic atrophy and nearly total blindness. The headaches, vomiting attacks, and blindness continued much the same for nearly two years, — the remainder of the patient's life. At times the pain and prostration were such that he was in bed for days or weeks at a time, then improved, and was able to be up and about like a healthy child. During this time there was great increase in the general adipose tissue, so that the patient became obese, and to this condition was added later exophthalmos and an appearance suggesting myxedema. These two latter symptoms, however, disappeared after a month or two. During the first part of this time (in March, 1895) there were temporary paresis of both external recti and nystagmus. There were no further changes in the symptoms until about ten months after the blindness began, when there was a sudden attack of paraplegia accompanied by incontinence of urine and feces which became permanent. At the same time there appeared a paralysis of the left face and some weakness of the upper extremities, but these soon disappeared. Bedsores developed but later improved, and the child was in good general condition, although the obesity had somewhat diminished at the time of death, from typhoid fever.

At autopsy there was marked dilatation of the ventricles, including the fourth, and the iter, resulting from the hydrocephalus. The branching cavity in the cord seemed to originate in the gray matter and not to be a diverticulum of the central canal, although at the point of greatest dilatation of the cavity in the lower cervical region the central canal opened into, and became a part of, the general cavity. Above the point of greatest dilatation of the cavity there was an ascending degeneration of the direct cerebellar tract, the tract of Gowers and the posterior columns. Below this point there was marked degeneration of the direct and crossed pyramidal tracts and diffuse atrophy of the posterior columns. There was also well-marked atrophy of the tract of Gowers. At the point of greatest dilatation of the cavity there was extensive degeneration of all the fibres of the white matter of the cord, and marked distortion of the gray matter, in which, however, fairly normal nerve cells were found in moderate numbers. There was diffuse increase of neuroglia fibres in the atrophied tracts and marked neuroglia proliferation about the cavity in the cord.

Dr. P. C. Knapp said that the study of sensory disturbances, especially in tabes, shows that they do not follow any definite course. As a rule, in tabes the analgesia is more extensive than the anesthesia.

Dr. B. Sachs, of New York, thought the view that the well-known sensory symptoms of syringomyelia were almost pathognomonic of that disease could no longer be entertained. He had observed two cases of Pott's paralysis with dissociated sensory symptoms confined to the extremities. In two other cases there was dissociated sensation in the distribution of the trigeminal nerve.

Dr. Patrick, in closing the discussion, said he did not agree with the statement of Dr. Knapp, that in tabes, as a rule, the analgesia was more extensive than the anesthesia. On the trunk tactile anesthesia is more extensive than the analgesia, and appears sooner.

The ordinary dissociation of sensation on the extremities in Pott's disease was not very uncommon.

LANDRY'S PARALYSIS.

This was the report of a case by Drs. Chas. K. Mills and W. G. Spiller, of Philadelphia.

Paralysis developed very rapidly in a man previously healthy, and after one week the man died, completely paralyzed in all the extremities. Sensation was preserved until death. One of the external popliteal nerves examined was found degenerated, and the motor cells of the spinal cord presented the lesions known as central chromatolysis. The writers reviewed the cases published in the literature, and discussed the value of central chromatolysis as indicative of secondary changes within the cell body. They believed that transition forms of acute ascending paralysis occur, which make the diagnosis between Landry's paralysis, polyneuritis and myelitis difficult. Landry's paralysis may be due to myelitis or to neuritis, and it is possible that in some cases no lesions may be found.

Dr. Mills held the view that in these forms of acute toxemia or infectious diseases it was very probable that in many of them the entire peripheral motor neuron — or whatever system is affected — is attacked at the same time.

(To be continued.)

Recent Literature.

Electricity in the Diagnosis and Treatment of Diseases of the Nose, Throat and Ear. By W. Scheppegrell, A.M., M.D., New Orleans. New York: G. P. Putnam's Sons. 1898.

This is a book of four hundred pages, thoroughly covering the ground set forth in the title. The first half includes the general principles of medical electricity, the galvanic and faradic currents, electric lamps, illuminators, electro-cautery, motors, electrolysis, cataphoresis and x-rays. In the second half, different pathological conditions which are best treated, or which may be treated by any of these electrical methods are classified and the treatment described.

The book is carefully compiled, clear and attractive. By not attempting too much the author has succeeded in giving to the profession a supplement to our text-books on diseases of the nose, throat and ear which was much needed. He is to be congratulated in not having burdened his text with an endless number of cuts of instruments, and also in having arranged the quotations from other authors and references to their opinions in such a way that connected description is not lost.

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THE CAUSES OF SUDDEN DEATH.

BICHAT'S famous statement that every kind of sudden death commences by the interruption of circulation and respiration or of the action of the brain (that is, begins in the heart, the lungs or the brain[1]) has long been found inadequate. It has in fact been affirmed and by an author much more modern than Bichat, that sudden death originating in the kidney is of all kinds of sudden death the most frequent.[2] This may be doubted, — at the same time sudden death from renal failure, from so-called uremic poisoning, is a common occurrence. It may well be that the toxic urinary waste elements cause broncho-pulmonary lesions which result in death by asphyxia as often occurs in the bronchial form of uremia; or precipitate a fatal termination by paralyzing the heart as in renal affections with concomitant cardiac lesions; or bring about sudden death by suspending all cerebral action, as is witnessed in the comatose form, — it is none the less true that the death begins with the kidney. Though sudden death does sometimes take place from renal causes, and every general practitioner is cognizant of such cases, yet oftener not being instantaneous the fatality would be tabulated as rapid rather than sudden death, and the physician called to the scene obtains a history and sees symptoms which more or less clearly indicate the disease. This is even the case with sudden death due to lesions of the encephalon. These comparatively seldom come within the province of the medical examiner or coroner, the fatal lesion to be determined and the death entry to be made by him. A meningeal hemorrhage, for instance, may be speedily mortal, but not till one or more hours have elapsed. An apoplexy at the *basis cranii*, bringing about sudden death by inhibition of the cardiac and respiratory centres, is rare. Brouardel very properly takes such cases out of the category of deaths from cerebral causes and tabulates them as sudden death due to lesions of the circulatory apparatus.

A certain number of sudden deaths has been laid to the account of latent meningitis, like the case which Ollivier, of Angers, reports where a laborer was taken suddenly sick during his work, died very soon, and at the autopsy there was found a limited suppurative meningitis. Sudden deaths have been recorded from latent abscess of the cerebrum, from cerebral tumors in the bulb, pons and peduncles, causing spreading congestion and suspending the centres of cardiac innervation, etc. Similar sudden fatalities from paralyzing the cardiac innervation have arisen from insignificant traumatisms. Ivanoff records sudden death in a boy aged fourteen years resulting from a kick in the abdomen given by another boy. At the autopsy nothing was found to explain the death. Brouardel, who cites the case, remarks that experience teaches that violent blows over the epigastrium may determine death by irritation of the solar plexus and consequent reflex arrest of the heart and respiration, or, as others would explain it, by constriction of the arteries of the cerebrum and medulla oblongata. It would seem that the blow over the epigastrium sufficient to cause death need not be a very severe one (Lancisi, Sir Astley Cooper, Maschka). Men have died suddenly in consequence of a kick or blow upon the scrotum, also by a blow over the larynx, the nose, the mouth, or some part of the cranium. A blow upon the cranium may not cause fracture or even great contusion, and the resulting death is generally somewhat tardy being due to intra-cranial hemorrhage. Sudden death due to alcoholism may result from the toxic action of alcohol on the nerve centres, also from the development and culmination of any of the visceral diseases which alcohol engenders, and especially from cardio-vascular and renal scleroses, from fatty myocardium, from meningeal hemorrhage, etc. Sudden deaths from diabetic coma generally have a known antecedent history and seldom become medico-legal cases. It is not always so with the occasional unforeseen fatal accidents of pulmonary or pancreatic hemorrhages; rupture of the spleen after moderate traumatism (seventeen medico-legal cases recorded by Dr. Pellereau[3]); rupture into the peritoneal cavity of hydated cysts of the liver with sudden death in profound collapse; syncopes attending hepatic colic (Charcot), — in one case of hepatic colic recorded by Brouardel, the train of fatal symptoms consequent on irritation of the bile passages by calculi and following a meal awakened suspicions of poisoning and gave rise to an inquest. Cases of rapid death with pain, vomiting, purging and collapse due to ptomaine poisoning and suspected before judicial investigation has been made to be arsenical poisoning are on record; so also of sudden mortal collapse following hemorrhage from a latent ulcer of the stomach. Instances of intestinal ulcers producing sudden death by perforation — complications or sequels of dysentery, typhoid fever, tuberculosis, cancer, etc., — have sometimes come under observation; rapid death with violent symptoms following volvulus and other forms of intestinal obstruction has often been witnessed, and such cases have been mistaken for acute poisoning. Instances in which sudden death was caused by emotion (shock) are not unknown. The autopsy either discloses nothing sufficient to account for death, or at the most some congestion of the cerebral meninges, as in a case of Marchal.[4]

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[1] Bichat: Researches on Life and Death, 1809, p. 183.

[2] Brouardel: La mort et la mort subite, 1895, p. 245.

[3] D. Pellereau: Considerations medico-légales sur les ruptures de la rate (cited by Brouardel).

Among the lesions of the lungs capable of causing sudden, unexpected death, we must give the first place to pulmonary embolism associated with fractures of the leg, with typhoid fever and originating in thrombosis of some of the large veins, with phthisis pulmonalis, with rheumatic phlebitis, with *phlegmasia alba dolens* and other puerperal conditions, with varicose veins, with latent cancer of the uterus, etc.

Sudden death has frequently resulted from the introduction of air into the veins, as in cases of provoked abortion; this accident has even followed natural delivery.

Cases of sudden death originating in the heart, occasion probably a very large percentage of visits and "views" made by the medical examiner. The usual verdict, "death by heart disease," is unfortunately seldom verified by an autopsy, therefore positive data on this point are not attainable. The majority of the subjects concerning whom the above mortuary record is written by the medical examiner, being advanced in years, are probably victims of fatty degeneration of the myocardium, with or without stenosis of the coronary arteries. There is reason to believe that this malady is often latent, or nearly so, till the moment of death. Aortic regurgitant far oftener than mitral disease is followed by sudden death, but there have generally been definite symptoms and a definite history, so that the sudden death cannot be said to have been an unforeseen and unexpected accident.

It is probable that deaths are continually being entered as due to heart disease where other causes were responsible. According to Lesser's statistics, out of one hundred cases of sudden death, there were sixty-six by cardiac lesions and thirty-four by unknown causes. Of these unknown causes, the autopsy in ten per cent. failed to give any explanation. These figures may fairly well represent the experience of many others. Often the autopsy is performed when decomposition is too far advanced for satisfactory results to be obtained; and, as above intimated, the direct or reflex causes of sudden death may be of too impalpable a nature for detection.

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MEDICAL NOTES.

Plague in India. — Plague in India is reported to be increasing, and it is interesting to note that the British Government has lately removed certain restrictions previously placed on travel in the infected districts as impracticable, and causing more inconvenience than was justified by their results.

The Government and Yellow Fever. — In answer to an appeal from the Board of Health of Mississippi to the United States Government for aid, Surgeon-General Wyman is reported to have answered that the Government cannot furnish nurses or provisions for sufferers, but can only establish detention camps and maintain a corps of inspectors and physicians.

Extraordinary Case of Maternal Impression. — We have recently published several cases of reputed maternal impressions. A correspondent sends the following as an addition to our list. We are not responsible for its accuracy. A Chinese cook, trying to catch a barn-door fowl for the pot, pursued her to the henhouse, where, having escaped from her pursuer, she was prematurely delivered of an egg. When the egg was hatched the chicken proved to be a "Cochin China." — *New York Medical Journal.*

Casualities in the Soudan Expedition. — In the recent fight at Omdurman there were 4 officers killed, 3 English and 1 native, as well as 23 men in the British regiments and 20 in the native. There were 14 British officers wounded, and 8 native officers. The wounded in the British regiments numbered 99, and in the native regiments 221, so that the total number lost in this battle — in which the enemy lost some 15,000 in killed and wounded — was 389. Lieutenant-Colonel Hoggett, senior medical officer of the expedition, received a bullet wound of the left breast, and 2 men of the corps were wounded, one of them severely, by a bullet in the head. — *Medical News.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 12, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 21, measles 15, typhoid fever 26.

Free Hospital for Women. — Through the generosity of Mrs. Dumaresq and Mrs. Arthur W. Foster a ward has been fitted, furnished and endowed at an expense of eighteen thousand dollars ($18,000) to be known as the Jordan Ward.

The Massachusetts Hospital for Consumptives and Tubercular Patients. — This hospital, located in Rutland, Mass., on the Central Massachusetts Railroad, twelve miles from Worcester, about twelve hundred feet above sea-level, was opened October 1, 1898, for the reception of patients. It is built on the pavilion plan and will accommodate two hundred patients. Inasmuch as the primary purpose of the hospital is to arrest the disease, and if possible to extirpate it, only such patients will be admitted as are not too far advanced to admit of reasonable hope of radical improvement. In no sense is the hospital to be considered as a home for the hopelessly sick. Patients who do not improve after a stay in the hospital sufficiently long to test the effect of treatment will be advised not to remain, and their friends will be expected to arrange for their removal to surroundings primarily devoted or better adapted to their comfort. Patients will be admitted only upon applications endorsed by the visiting staff, Drs. Vincent Y. Bowditch and Herbert C. Clapp, who will have supervising charge of their medical treatment and who will decide the duration of their stay in the hospital. The charges for patients will be uniform at the rate of fifty cents per day. No private patients will be received and private rooms will be allowed only for physical reasons. No extra charges will be made and no fees or tips will be allowed to be accepted under any circumstances. The Boston office, No. 181 Tremont Street, will be open for the examination of applicants on Wednesdays and Saturdays from 10 to 12 o'clock only. Any further information will be gladly given by the Superintendent, Dr. Walter J. Marcley, Rutland, Mass.

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[4] Marchal: De la mort subite, Paris, 1861, p. 25.

NEW YORK.

The New Columbia Gymnasium. — The various departments of Columbia University were reopened for the season on October 3d, with an address by President Seth Low. On this day the new gymnasium was thrown open for the first time. The gymnasium itself contains an available floor space of 16,000 square feet, and is, with one exception (that of the University of Wisconsin), the largest in the country. The marble swimming pool, which is in the basement, is semicircular in shape, and is one hundred feet long by fifty feet wide. Its depth ranges from three to nine feet, and the water is lighted from beneath by electric arc lights. The medical director of the gymnasium is the well-known expert, Dr. W. L. Savage.

The Four Years' Course Adopted. — On the occasion of the opening of the University and Bellevue Hospital Medical College, on October 3d, the address to the students was made by Prof. Edward G. Janeway, Dean of the Faculty, who stated that the present senior class will be the last to be graduated after a three years' course, the four years' course having been made obligatory in the consolidated school.

Opening of the Cornell Medical College. — The first session of the new Cornell University Medical College was opened on October 4th, in the building on the grounds of Bellevue Hospital formerly occupied by the Bellevue Hospital Medical College, by addresses by Jacob Gould Schurman, LL.D., President of the University, and Dr. William M. Polk, Dean of the Medical Faculty and Professor of Obstetrics and Gynecology.

Wanted: Brains. — Dr. Burt G. Wilder, Professor of Physiology on the Cornell Staff of Instruction at Ithaca, has recently issued a circular asking prominent men of the country to bequeath their brains to the University. In it he states that while it is easy to procure the brains of criminals and the insane or ignorant, it has hitherto been extremely difficult to obtain those of persons in whom the cerebral development is beyond the average, and that it is highly desirable for the advancement of science that a considerable number of brains of this character should be secured. This request, which has been circulated principally among the students and graduates of Cornell, is accompanied by a blank form of bequest, which, however, contains a clause by which the legacy becomes void if serious objection is made by the relatives of the deceased.

The Wounded at Santiago. — At the first meeting, on October 6th, of the New York Academy of Medicine, after the summer recess, Dr. William Duffield Bell, Surgeon of the Seventy-first Regiment, New York Volunteers, read a paper on "Surgery in the Recent War." In the course of it, in speaking of the Santiago campaign, he said:

"In tents where there was not accommodation for more than one hundred, fully eight hundred patients were treated during the three days of the great battle of San Juan. During the conflict, a constant stream of wounded and injured men kept coming in from the firing line. Many of the wounded walked fully four miles to have their wounds attended to, while numbers had to lie on the ground unattended to for several hours. We had an insufficiency of clothes and blankets, and the injured had to lie in their rain-soaked uniforms. Could it have been possible to keep a complete report of the cases and the nature of the wounds made by the Mauser bullets and the explosives fired from the Springfield rifles of the Spanish volunteers, it would be a most valuable acquisition to the annals of military surgery. I have seen men who were shot through the head with Mauser bullets go back to duty within three days after having been treated, apparently as well as ever. The explosives from the Springfield rifles, fired at either short or long range, were destructive in their effects. The men of the medical department deserve all praise for the fearless manner in which they risked their lives in ministering to the wants of others, both in the hospitals and at the firing line. The Spanish sharpshooters, hidden in trees, never lost an opportunity to shoot at a medical officer. In fact, the Geneva cross on his shoulder was but a target for the bullets of the Spanish sharpshooters."

A Public Bathing Pavilion. — At a meeting of the Board of Estimate and Apportionment held October 6th, an appropriation of $150,000 was allowed to the Commissioner of Parks in Brooklyn and Queens for the construction and equipment of a great bathing-house and pavilion at Coney Island. It is to be built on land belonging to the city at the terminus of the Ocean Boulevard and the bicycle path, and will be ready for occupancy next summer. It will be maintained, under the supervision of the Park Department, on similar lines to those on which the Revere bath and shelters are conducted in Boston, and it is claimed that the institution will be self-supporting. The preliminary plans for the structure propose a large brick building three stories in height, on either side of which there will be colonnades protected from the sun's rays, where women and children can find comfort during the hot weather. The pavilion will have an ocean front of about six thousand feet, and in the bathing-houses there will be room for over one thousand persons at a time, while the entire structure will accommodate ten thousand.

Suicide of a Young Physician. — Henry E. McDermott, Assistant in Physiological Chemistry in the College of Physicians and Surgeons, New York, recently died in New Haven, from the effects of prussic acid, which he is supposed to have taken with suicidal intent while suffering from mental depression resulting from continued ill-health. He was graduated with high honors from Yale University in 1896 and was a student in the Yale Medical School until last spring, when Prof. R. H. Chittenden invited him to become his assistant in the Medical Department of Columbia University, a very unusual honor for so young a man.

Typhoid among the New York Volunteers. — A despatch from Middletown, Pa., dated October 4th, states that there are no less than four hundred cases of typhoid fever in the 203d Regiment, New York Volunteers. The disease is probably of a comparatively mild type, however, as there seem to have been but few deaths. This is one of the regiments that went from Camp Black, at Hempstead, last month soon after the outbreak of typhoid there, and when they had been at Camp Mead some little time so many cases developed among the men that it was deemed advisable to isolate the regiment in the Concavago Hills, eight miles from the other troops. Disease is said to be abating in the 201st and 202d Regiments, which also contracted typhoid at Camp Black.

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Miscellany.

YELLOW FEVER IN THE SOUTH.

Reports from Mississippi and Louisiana show a continued spread of yellow fever. On October 10th it was reported that seventeen counties and twenty towns in Mississippi were infected. An extensive migration has taken place from the infected districts, 25,000 people being reported to have taken flight to northern and western cities or to the woods. Great hardship has been caused to all classes by the total suspension of business in the infected districts.

From the beginning of the epidemic the state of unreasoning panic which it has caused has been out of all proportion to its severity, as the character of the cases has been uniformily mild, the death-rate being reported to be about ten per cent., though larger among the white than the colored population. The character of the disease is so mild, in fact, that the State Board of Health, of Louisiana, in a recent proclamation have termed it "yellowoid fever," and relaxed the quarantine regulations to the extent of allowing all persons from non-quarantined localities to enter quarantined localities, from which, however, they cannot return. All quarantined localities except Franklin and Wilson are permitted to hold communication with New Orleans and adjacent quarantined localities. Ten counties out of sixty-nine in Louisiana have already removed quarantine restrictions.

Surgeon-General Wyman on October 9th, issued the following statement for publication regarding the present epidemic:

"The disease is confined to Mississippi and Louisania and is a recrudescence of the fever from last year. In my opinion it did not come from Cuba and was not admitted by any quarantine. The hospital service has a large corps of officers throughout the infected territory. All trains leaving infected districts are manned by inspectors of the marine-hospital service and through trains are supplied with guards as well. Freight trains are obliged to change their crews so that the same crews may not go from one infected district to another district.

"The disease has appeared so late that it is extremely improbable that it will assume the extent of a great epidemic. After November 1st there may be some new cases, but there will be no new foci."

The following are the statistics of the disease as reported to the Marine-Hospital Service up to October 8th:

				Cases.	Deaths.
Louisiana:	Bowie,	Oct. 6,		1	
	Delogny,	"		1	1
	Franklin,	Total to Oct. 6,		375	7
Mississippi:	Taylor,	"	"	100	11
	Orwood,	"	"	79	4
	Waterford,	"	"	2	
	Jackson,	"	"	41	4
	Oxford,	"	"	52	6
	Edwards,	"	"	6	
	Water Valley,	"	"	10	
	Harriston,	"	"	42	4
	Fayette,	"	"	1	
	Madison,	"	"	3	1
	Port Gibson,	"	"	1	1
	Woodville,	"	"	1	
	Clinton,	"	"	1	
	Starkville,	"	"	3	
	Hermanville,	"	"	2	

Public schools, colleges and seminaries have been generally closed throughout Mississippi, and all courts, including the State Supreme Court, have been suspended.

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Correspondence.

THE "BAY STATE'S"[1] FIRST TRIP TO PORTO RICO.

Boston, October 8, 1898.

Mr. Editor: — By all accounts, the *Bay State's* Porto Rican voyage was a "soft snap" in comparison with her Cuban voyage — for all concerned. It was more like a pleasure excursion and less like a relief expedition. There was no real hardship about it. The vessel rolled and pitched very ostentatiously despite the smoothness of the sea, but there was but little seasickness among us on the way down and none on the way back.

The heat was never oppressive at night. I needed a blanket every night of the whole three weeks — even when we were in port and at anchor. In the daytime it was very hot in the sun between 11 and 4 o'clock, but in the shade I never found it uncomfortable.

To me there was no languor in the air. There was a great deal of work to be done, indeed I have seldom worked harder than during the six days we were at Ponce; but we felt energetic and eager for the work. We were told on every hand by those who had been some weeks on the island that our energy would soon wear itself out and that we should soon move as slowly and "enthuse" as little as did most of the soldiers and doctors with whom we came in contact. But I am inclined to think that we could have kept it up a good deal longer if we had continued to eat and sleep on the ship. The listlessness, forgetfulness and irritability of many of the officials who have lived there some time and become acclimated may very well have been due to their insufficient food and sleep. Almost every one of the twenty odd officers and physcians who took a meal with us on board the *Bay State* said, "Well that's the first square meal I've had since I left home," and hardly a man but would interrupt himself to scratch now and then those portions of his anatomy where the fleas were most active. A great deal of the debility for which the climate was blamed may very possibly, I think, be due to lack of sufficient food and sleep. I do not mean to imply that the Government was to blame for this. Most of the men whom I saw were pursuing the regular American happy-go-lucky tactics regarding food and sleep, that are so familiar to us all.

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[1] The *Bay State* is the Hospital Relief Ship of the Massachusetts Volunteer Aid Association.

There was very little rain while we were there. A few short showers — most of them at night — were all that we felt though we saw many more falling on the mountains farther inland, and at Utuado in the interior it rained every day except the one when our party was there. So much for the climate.

Our general course was as follows: On reaching Ponce at sunset, after a six days' voyage, we were at once warned away to avoid an expected hurricane which was to make the harbor unsafe. So we ran back along the southern coast of the island to Guanica — a deep, safe harbor into which our captain steered us safely though it was nearly pitch dark and we had no pilot. Behind us came the ill-fated *Seneca* with a native pilot, and ran ashore!

We stayed at Guanica twelve hours — until we heard that the hurricane had gone off without approaching the island — and then steamed back to Ponce. Here we passed six days in the process of getting coal and water, and communicating meantime with the Sixth Massachusetts in the mountains at Utuado. Finding that we could not move the sick down from Utuado to Ponce on account of the impassibility of the trail for wagons, we sailed completely round the island to Arecibo on the north coast and there received the ninety-one patients convoyed down from Utuado by Drs. Crockett and Manahan who had gone in from Ponce on mules, as well as by Drs. Burrell and Clarkson who drove up to meet them from Arecibo. I am tempted to tell of the many difficulties and adventures of this move, but here I must confine myself to saying that it was largely due to the splendid generalship of Dr. Burrell — his foresight, his resourcefulness and great executive ability — that everything went so smoothly and successfully. The ninety-one patients were all brought down on a single trip, — a twelve hours' drive over a horribly rough road — and carried to the *Bay State* in a huge lighter fitted with a latteen sail. After lying at anchor another day, during which we got the cases diagnosed and settled down for the trip back, we sailed for Boston just two weeks from the day we had left there.

We saw seventeen sick men at Guanica, one hundred and sixty-nine at Ponce, and ninety-one from Utuado. As those at Ponce were collected there from all parts of the island, at the U. S. General Hospital and the Red Cross Hospital, it is fair to suppose that we had a fair sample of such sickness as exists among the American troops in Porto Rico.

I examined the blood twice in all of the 277 cases above mentioned, once for malaria and once for the Widal typhoid reaction.

To me the results of these examinations were very surprising. Just before leaving Boston I had been examining at the Massachusetts General Hospital the cases brought from Santiago by the *Olivette* and the *Bay State*. A large proportion of these cases showed in their blood the organisms of estivo-autumnal malaria, and I had become so used to seeing the crescentic parasites in case after case that I listened with polite scepticism to the report of the doctor at Guanico, who said to me that he had seen no malaria in his regiment. When my examinations for malaria began to turn out negative in case after case, I could hardly believe my eyes, and repeated the examinations as carefully as I knew how. The result was the same, and out of the whole 277 cases examined I found malarial parasites in only two cases — one the tertian, and one the estivo-autumnal organism. Since the crescentic forms of malarial parasites remain in the blood for weeks despite the administration of quinine, I do not think that these negative findings were due to the fact that almost all the patients (typhoids included) had been taking quinine in large doses. [We were highly gratified to hear before leaving Ponce, that owing to my findings and those of Dr. T. Leary, the wholesale use of quinine in all fevers at the Ponce United States Hospital was stopped. This alone would, I think, have made the *Bay State's* trip worth while.]

The greatest kindness and courtesy was shown us everywhere, both by military men and army surgeons. I spent four days, morning and afternoon, at the United States Hospital at Ponce, which is a splendid institution. It stands on a hill behind the town — a very large, square, one-storied building, the wards opening onto a central courtyard, and containing over three hundred beds. It was cool, clean and airy, no bad smells anywhere, good beds, plenty of doctors and nurses (male and female) among whom I found several friends; records and charts orderly, and patients apparently contented. I walked about without any kind of *surveillance* and talked with patients and nurses. The typhoids were getting sponge baths every four hours for a fever of 102° or more, and milk every three hours. The mortality was only three per cent. among the typhoids so far.

Among the physicians whom I found there were Drs. Greenwood and Chadwick, of Waltham, and Dr. T. Leary, formerly of the Boston City Hospital, who is now the pathologist of the Ponce Hospital and is doing splendid work there. He had no typhoid cultures for the Widal test and we were very glad to be able to supply him with these as well as with formaldehyde, fruit jars, slides and cover-glasses and other necessities which he lacked. Among the nurses I saw Sister Louisa of St. Margaret's and Mr. Woods of the Massachusetts General and Boston City Hospital. The former said that she was well pleased with everything at the hospital and looked the picture of health.

At the Red Cross Hospital there were only some eight or ten officers. They were receiving the same excellent care as their soldiers at the General Hospital.

Another Red Cross Hospital was managed by the Spaniards and contained about thirty wounded Spanish soldiers — no fever cases. It was ill-smelling and disorderly, but the men seemed to be convalescing well.

The field hospital of the Sixth Massachusetts at Utuado, I did not see, but Dr. Burrell reported it as in excellent condition, managed just then by Dr. Washburn (lately surgical interne at the Massachusetts General Hospital) during the illness of Surgeon-Major George Dow who came home with us on the *Bay State*. To help fill his place we left at Utuado Dr. Booth-Clarkson, who went down with us on the *Bay State*, as Porto Rican agent of the Massachusetts Volunteer Society. Four of our nurses (two male and two female), already remained at Utuado and we sent them a large supply of Mellin's Food, Kennedy's crackers, corn starch and other stores.

Seeing the patients so well cared for at Utuado and Ponce and considering the roughness of the road from Utuado to the sea, we decided to take only convalescents who would not be hurt by the hard, all-day wagon journey. Most of the patients had diarrhea when they came aboard and it was very striking to notice how quickly this diarrhea ceased during the voyage home without the use of any medicines. On reaching Boston there were only three or four, out of the eighty odd who had diarrhea when we left Porto Rico, in whom the loose discharges continued.

Very truly yours, Richard C. Cabot, M.D.

METEOROLOGICAL RECORD

For the week ending October 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...25	30.12	50	54	45	93	97	90	N.	S.E.	8	4	R.	O.	.02
M..26	29.85	63	73	53	88	75	82	S.W.	S.	10	4	O.	O.	
T...27	29.78	58	65	52	69	57	63	N.W.	N.W.	22	5	C.	C.	.33
W..28	30.04	62	74	50	59	56	78	W.	N.W.	12	4	F.	C.	
T...29	30.16	65	75	55	58	80	69	S.	S.W.	6	12	C.	C.	
F...30	30.18	70	83	57	79	65	72	W.	S.W.	11	14	C.	C.	
S....1	30 36	66	74	59	79	84	82	W.	E.	4	8	C.	C.	
☞	30.07		71	53			77							.35

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 1, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1269	547	16.96	10.80	10.56	2.40	1.76
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	382	113	19.76	11.44	4.16	6.24	8.06
St. Louis . . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	—	—	—	—	—	—	—
Baltimore . .	506,389	203	81	24.50	6.37	12.25	3 43	7.35
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	79	32	23.94	7.56	11.34	3.78	3.78
Washington .	277,000	—	—	—	—	—	—	—
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	58	23	18.92	10.32	18.92	—	—
Nashville . .	87,754	30	9	13.33	23.33	10.00	—	3.33
Charleston . .	65,165	40	19	17.50	10.00	12.50	5.00	—
Worcester . .	105,050	26	13	19.25	—	7.70	7.70	—
Fall River . .	95,919	38	23	21.04	7.89	13.15	7.89	—
Cambridge . .	89,724	33	18	24.24	9.09	21.21	—	—
Lowell . . .	88,641	29	13	20.70	6.90	13.80	—	6.90
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	27	18	3.70	7.40	—	3.70	—
Somerville . .	61,101	—	—	—	—	—	—	—
Lawrence . .	57,263	25	14	16.00	12.00	4.00	—	8.00
Springfield . .	56,501	18	16	22.22	16.66	11.11	5.55	—
Holyoke . . .	43,424	15	9	52.22	13.33	20.00	13.33	—
Brockton . .	37,278	10	3	40.00	20.00	20.00	—	—
Salem	36,883	10	3	—	10.00	—	—	—
Malden . . .	34,613	8	4	37.00	—	25.00	—	—
Chelsea . . .	33,468	10	—	—	30.00	—	—	—
Haverhill . .	32,022	7	3	14.28	42.84	—	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	13	—	15 38	7.69	15.38	—	—
Fitchburg . .	29,438	5	3	60.00	—	20.00	20.00	—
Taunton . . .	28,167	5	1	—	20.00	—	—	—
Everett . . .	25,338	4	1	20.00	—	—	—	20.00
Quincy . . .	23,549	5	2	60.00	—	60.00	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	6	1	—	33.33	—	—	—
North Adams .	20,971	3	3	—	—	—	—	—
Chicopee . .	17,842	10	3	—	10.00	—	—	—
Medford . . .	16,511	4	0	—	25.00	—	—	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	14,032	—	—	—	—	—	—	—

Deaths reported 2,385: under five years of age 969; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 443, consumption 251, acute lung diseases 187, diarrheal diseases 236, diphtheria and croup 80, typhoid fever 77, whooping-cough 24, cerebro-spinal meningitis 14, scarlet fever 6, measles 4, erysipelas 2.

From whooping-cough New York 13, Pittsburg 4, Philadelphia 3, Providence 2, Malden and Haverhill 1 each. From cerebro-spinal meningitis New York 7, Holyoke 3, Providence 2, Baltimore and Worcester 1 each. From scarlet fever New York 4, Philadelphia, Baltimore, Cambridge and Lawrence 1 each. From measles New York 4. From erysipelas Philadelphia and Baltimore 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending September 24th, the death-rate was 23.6. Deaths reported 5,072; acute diseases of the respiratory organs (London) 157, diarrhea 1,238, whooping-cough 65, diphtheria 51, fever 45, scarlet fever 28, measles 27.

The death-rates ranged from 15.9 in Portsmouth to 38.7 in Gateshead; Birmingham 22.6, Bolton 29.4, Cardiff 21.1, Hull 31.5, Leeds 20.4, Liverpool 29.0, London 21.6, Manchester 32.4, Newcastle-on-Tyne 28.5, Nottingham 23.8, Salford 35.8, Sheffield 26.0, Sunderland 37.0.

SOCIETY NOTICES.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, October 19, 1898, at 8 o'clock.

At 8 o'clock: Dr. Whitney will review the work of the Section during the past two years.

At 8.15: Drs. Henry Jackson, J. J. Minot, H. F. Vickery and H. F. Hewes will speak of their experience at the various hospitals in the "Diagnosis and Treatment of the Diseases Prevalent in the Army."

Dr. R. C. Cabot and W. H. Prescott will speak of the "Conditions at Porto Rico and Montauk."

At 9 o'clock: Election of a chairman for the ensuing two years. E. W. Taylor, M.D., *Secretary*.

The Tri-State Medical Society. — The tenth annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Birmingham, Tuesday, Wednesday and Thursday, October 25, 26 and 27, 1898. The prospects are for a large and successful meeting.

Western Surgical and Gynecological Association. — The eighth annual meeting of this Association will be held at Omaha, December 28 and 29, 1898.

Geo. H. Simmons, *Secretary*, Lincoln, Neb.
D. S. Fairchild, *President*, Clinton, Ia.

THE NEW YORK STATE MEDICAL ASSOCIATION.

Reduction of Fare. Dinner Tickets.

A reduction of fare and one-third, on the certificate plan, has been secured for those attending the meeting of the New York State Medical Association, New York City, October 18-20, 1898.

Subscribers, invited guests and delegates from other State societies will secure their tickets for the Association Dinner by calling at the registration office.

RECENT DEATHS.

Charles Leonard Fox, M.D., M.M.S.S., died in Lowell, October 5, 1898, aged twenty-eight years.

Charles Moses Holmes, M.D., M.M.S.S., died in Northampton, October 7, 1898, aged thirty-nine years.

Charles Pomeroy Worcester, M.D., M.M.S.S., died in Newtonville, October 9, 1898, aged thirty-seven years.

John B. Curtis, M.D., of Somerville, whose death was noted last week, was born in East Cambridge thirty-one years ago; was educated in its public schools, graduating from the high in 1883. He graduated from the Harvard Medical School in 1891. He immediately took up active practice in Somerville. He was a member of the Massachusetts Medical Society and secretary of the Somerville Medical Society, and was also on the staff of the Somerville Hospital.

Claudius Henry Mastin, M.D., LL.D., a distinguished surgeon, died in Mobile, Ala., on October 3d, at the age of seventy-two years. He was born at Huntsville, Ala., on June 4, 1826. and was graduated from the Medical Department of the University of Pennsylvania in 1849. After graduation he spent five years in study in Paris, London and Edinburgh and began the practice of his profession in Mobile in 1854. During the Civil War he served in the Confederate Army as medical director and later as corps surgeon under General Polk in the Army of the Tennessee and elsewhere. After the war he resumed his practice in Mobile. In 1875 the honorary degree of LL.D. was conferred upon him by the University of Pennsylvania. Dr. Mastin early entered the field of surgery, and his skill as an operator was great, but he was in addition to this an able diagnostician and therapeutist. He was one of the original members of the American Surgical Association, of the American Genito-Urinary Association and of the Southern Surgical and Gynecological Association, and was active in the organization of the first Congress of American Physicians and Surgeons assembled in Washington in 1887. He was a member of the central council of the University of Pennsylvania as well as one of its examining board and a frequent contributor to medical literature.

Original Articles.

A SUCCESSFUL GASTRECTOMY FOR CANCER OF THE STOMACH.

BY MAURICE HOWE RICHARDSON, M.D., BOSTON,
Visiting Surgeon to the Massachusetts General Hospital; Assistant Professor of Clinical Surgery, Harvard University.

The following case seems of interest in connection with the subject of gastric surgery. With the cases of Schlatter and Brigham, it shows that nutrition can be carried on without a stomach. It helps to prove, moreover, that no case of gastric cancer is too extensive for successful removal so long as the tumor is limited to the stomach itself.

It is doubtless true that cancer in the stomach, like cancer elsewhere, varies in malignancy, and that some of the operations that are apparently unfavorable are followed by a longer immunity than others that seem encouraging. In cancer of the uterus, for instance, I recall two cases in which the operation seemed hopeless, and was in fact so pronounced by others; yet in both a vaginal hysterectomy has given perfect general and local health, now lasting three years. The fact is that cancer itself is little understood, — the possibilities of cure even less. The last thing to be done is to leave the patient to certain death, and that should be done only when the disease is so situated that some of it must be left. In the surgery of cancer of the stomach — and for that matter in the surgery of cancer of all organs — no attempt should be made at permanent cure unless the tumor can be removed by a margin of sound tissue. In securing a suitably broad margin the dissection may and should invade any structures not essential to life. If practically the whole stomach can be successfully removed in those cases in which the tumor invades the greater part of it, what may we not expect after extensive dissections of recent and limited disease?

Schlatter's successful extirpation of the stomach excited an interest justly extraordinary. Brigham's brilliant case — the second successful one — was less remarkable only in that it was not the first. But for the success which attended these two operations, I should never have undertaken in the following case so formidable a procedure as gastrectomy. In reporting this case I would therefore make full acknowledgment of my indebtedness to Schlatter and to Brigham. Not that a total extirpation of the stomach is so very much more difficult than a partial excision, — I had frequently demonstrated upon the cadaver the feasibility of an esophago-duodenostomy. It was our ignorance as to the immediate and the remote effects of a complete removal of the stomach, rather than the anatomical and surgical difficulties that made the operation formidable. To have faced successfully this uncertainty, to have solved the question of possible health after gastrectomy, is an achievement by Schlatter which cannot be shared by any one else.

It is important that every operation by which the whole stomach or the greater part of it is removed should be carefully recorded, in order that the dangers, the fatalities, and especially the ultimate results, good or bad, may be known.

Gastrectomy, like pylorectomy, enterectomy, and other operations of the first magnitude, should not be lightly undertaken by any one, — it should not be undertaken at all by the inexperienced.

The indications for gastrectomy are limited. Only those cases are suitable in which the disease can be removed by a broad margin. Such a limitation makes the cases in which gastrectomy can be performed extremely rare; for few gastric carcinomata so extensive as to require total extirpation are unattended by hopeless local infiltrations, or liver or other remote metastases. In fact, as I have remarked elsewhere (*Boston Medical and Surgical Journal*, August 4, 1898), when a tumor is perceptible in suspected gastric cancer, the case is usually hopeless. The indications for gastrectomy are, in a word, an extensive malignant tumor limited to the stomach in a patient of suitable general strength; the contra-indications, a local infiltration, a remote metastasis, or a patient of unsuitable general condition. Uncertainty still exists as to the ultimate results, — an uncertainty which may yet limit still more narrowly the already narrow confines of operative indications. How long will the intestine carry on its vicarious functions of stomach digestion? Will the patient continue to improve, or shall we look forward to a progressive marasmus?

Mrs. ——, age fifty-three, a patient of Dr. W. P. Defriez, of Brookline, consulted me on May 20, 1898. She had always been well till the present trouble, except that ten years ago she was ordered West for lung trouble, from which she made a perfect recovery. During the past year she has been losing appetite and strength, and has been troubled much by indigestion. There has been neither pain nor vomiting; the only thing that she noticed was weakness and discomfort.

She has had six children. She passed the menopause about a year ago. Her former weight was 163; her present weight is 128. The only thing that she noticed was that her "food did not digest. It seemed a sort of knotting up of the bowels." She has had to be very careful about her diet. She could eat steak, mutton, asparagus, cracked wheat, etc. She would take very little food of any kind, her appetite not being good. The bowels have been irregular for the last year. She has sometimes gone five or six days without a movement. Dr. Defriez discovered a tumor in the abdomen just above the umbilicus, in the middle of April, 1898.

The father is living at eighty-three. The mother died at sixty-three. One sister died of consumption; one sister is living and well; two brothers are living and well; one brother died of brain trouble; one brother went West for his lungs.

On questioning, I found that there had been no vomiting of blood; in fact, there had been no vomiting of any kind. There had been no blood in the stools. Continued loss of weight and strength, with indigestion and discomfort, were the chief symptoms.

The general appearance was good: there was no cachexia. In the abdomen about the region of the umbilicus, a smooth, somewhat flattened, hard, tympanitic tumor could be felt, about which, and apparently through which, there was much gurgling. The tumor was about the size of the fist, movable to a certain extent in all directions, but restricted by deep attachments. The outer border of the tumor was irregular and nodulated. The mass suggested an enlarged right kidney, but it could not be depressed into the right renal region. The possibility of a gall-bladder tumor was considered, but from the history and the situation of the tumor was rejected. Cancer of the stomach was thought possible, but improbable. The diagnosis of malignant tumor of the transverse colon seemed most likely to be correct, because of the situation, mobility, resonance of the mass, and especially because of the gurgling and squeaking of gas through it — symptoms which I had come to regard as indicative of malignant stricture of the intestine. The diagnosis was that of malignant tumor of the transverse colon or of the omentum, encroaching upon the calibre of the intestine. Though the prognosis seemed grave, an exploration was advised.

The patient was sent to the Eliot Hospital, 38 Commonwealth Avenue, where the operation was performed on May 31, 1898. There were present at the operation the attending physician, Dr. Defriez, and Drs. Brewster and Jones and Miss Durling, who assisted. The ether was given by Miss West. Several nurses of the hospital were present.

Under ether a hard, movable tumor could be felt at and above the umbilicus. Though deeply attached, it could be moved about in the pyloric region. It was perfectly evident that this tumor was connected with the stomach. A median incision showed the mass to be, in fact, a tumor of the stomach involving the greater part of its walls, — practically the whole organ except a small portion next the esophagus. The liver was normal. No nodules outside the stomach were found, even after prolonged and careful examination. There was no ascites. The mobility of the tumor was such that it could be drawn far out of the wound; its duodenal and its esophageal attachments could be clearly seen and examined. Between the esophagus and the tumor there was a circular margin of healthy stomach about one inch wide. Towards the duodenum the disease had extended as far as the pylorus. The stomach, as a whole, was contracted to half its usual size. By traction on the tumor outwards and to the left, the unaffected extremities of it could be brought near enough together to warrant the belief that they could be successfully sutured after the removal of the intervening stomach. This belief was only partially justified by the event, for it was with some difficulty that the cut ends were brought into apposition, and then only after freeing the duodenum. I should have given up further procedure in this case but for the brilliant success of Schlatter and Brigham, for it was clear that to do any good the entire stomach must be sacrificed. Moreover, if a gastrectomy was ever justifiable it was in this case, for the disease was limited to the stomach, the duodenum could be brought to the esophagus, and the patient was in excellent condition. I believed that cancer should be removed, even by the most formidable and dangerous procedure, provided that it could be removed by a sufficiently broad margin.

Extirpation of the tumor was immediately begun. The first step was separation of the omentum and exposure of the posterior gastric wall. The omentum was tied with silk in one-inch sections. About five inches of the transverse mesocolon were unintentionally included in the sections. This gap was later closed by suturing the V-shaped edges together. I was a little anxious about the vitality of the segment supplied by the ligated mesocolon, but it kept a good color throughout the operation, and the success of the operation was not jeoparded. The suturing along the greater curvature was continued until healthy tissue was reached, — an inch or more beyond the upper limits of the disease. As fast as the ligatures were tied the stomach attachments were cut. Abundant masses of gauze were then placed above, below, and behind the pylorus, duodenum, and main body of the stomach. The escape of gastric contents was prevented by tying the pylorus with a narrow piece of gauze. The duodenum was divided transversely by means of scissors. The slight escape of gastric and duodenal contents at the plane of excision was caught in the gauze, which was then removed and replaced by fresh. The bleeding points of the cut surface were caught with hemostatics. The attachments of the lesser curvature were next transfixed, tied in small sections, and divided. At this stage the stomach was free everywhere except at the cardia. It could be drawn downward and outward until the esophageal attachment was plainly visible. It was surprising to see how easily, by traction of the freed stomach, the upper extremity could be examined and manipulated. The stomach was removed by an incision at the cardia, well above the upper limits of the disease. A bell-shaped upper opening was left, somewhat too large to fit the opening in the duodenum. This bell-shaped opening was therefore lessened by a few interrupted silk sutures. Approximation of duodenum to esophagus proved much more difficult than was anticipated, because the duodenum was held back by its blood-vessels and other attachments. Traction on the duodenum developed tense retro-duodenal bands, which evidently were preventing the desired elongation. By tying and cutting these restraining attachments, an inch or more was gained, — enough to permit approximation without dangerous tension. The joint was made by interrupted Lembert sutures of silk. Enough gauze was placed about the line of suture to provide against the escape of gastric contents. The loss of blood was inconsiderable, the shock slight, the time of operation one hour.

AFTER-TREATMENT — (BY DR. G. W. W. BREWSTER).

The operation was attended by little if any shock. On being put to bed the patient was given a hypodermic injection of one-thirtieth of a grain of strychnia, one-eighth of morphia, and one one-hundredth of atropia, and an enema of a pint of salt solution with two ounces of brandy and three ounces of coffee. Two hours later, with the pulse at 68, she was given another enema of a pint of salt solution and an ounce of brandy. In the evening, five hours after the operation she was well out of ether, the pulse was 64; she was somewhat restless. There was no vomiting, but considerable belching of gas from the mouth, preceded by a good deal of pain in the epigastrium. At five o'clock she was given another eighth of morphia. At that time the pulse was 72; the temperature 97.8°. During the night nutritive enemata were given every four hours — four ounces of peptonized milk, the white of an egg, half an ounce of brandy, and five drops of laudanum. During the night she was fairly comfortable; there was slight restlessness. She passed voluntarily eight ounces of urine during the evening. Gas was belched at times during the night, and caused the same distress as in the afternoon. The dressing was stained with serum, and had to be reinforced. Morphia was given, one-eighth grain, subcutaneously, at 3 A. M. She had slept in all during the night from three to four hours, in short naps.

June 1st. Pulse 86; temperature 100.6°. She was thirsty this morning and was given a pint of salt solution by rectum. The nutritive enemata were continued during the day. As she complained of the taste of the brandy in her mouth after enemata, the amount was reduced to two drachms. During the day she slept in short naps, in all about two hours during the morning. The pain in the epigastrium continued in paroxysms which were relieved after the belching of gas. In the afternoon the pulse was 94; temperature 100.3°. Her greatest discomfort was from thirst and dryness of the mouth which were relieved by constant moistening. During the evening an enema was given of saturated solution of salts, two ounces, and glycerine, one ounce. This was followed by the passage of a large amount of gas, with great relief. During the night one-eighth grain of morphia was given subcutaneously, the nutritive enemata being continued every four hours. She was very thirsty all night, and had the same dryness of the mouth. This was somewhat helped by the constant moistening of the lips and mouth. She slept about five hours in short naps during the night. The amount of urine passed in twenty-four hours was thirty-two ounces.

June 2d. Pulse 88; temperature 100.2°. This morning the patient coughed up a good deal of thick, brown mucus, which relieved her very much. There is a constant desire to cough, but the cough is simply a dry hack. This morning she was given two teaspoonfuls of cold water to swallow, which was repeated again in an hour. The nutritive enemata were continued to-day. She was slightly nauseated during the morning. In the evening, pulse 84; temperature 101.8°. The patient is still troubled with gas, although she passed large amounts by rectum. Quite restless and thirsty during the night, but slept in short naps from four to five hours. The amount of urine, thirty ounces in the last twenty-four hours.

June 3d. Pulse 72; temperature 100.4°. To-day she is beginning to take cold water by mouth again, — one teaspoonful every hour. The nutritive enemata are still continued. Evening, pulse 70; temperature 101.4°. During the day has slept in short naps and been fairly comfortable. In the evening the dressing was changed. The gauze was fairly saturated with serous oozing. The packing was not disturbed. It was apparently perfectly sweet. This evening we began to give her by mouth teaspoonfuls of milk and lime-water every hour. The nutritive enemata cannot be given so often now, as they are not well retained. During the night she thought that the milk and lime-water caused some distress. There was no nausea. The gas has passed freely from the rectum during the night, and most of the nutritive enemata have not been retained. During the night she had by mouth an ounce and a half of milk and lime-water; cold water, two ounces. She slept in short naps from five to six hours. On the whole, she had a rather good night. Twenty-five ounces of urine in the last twenty-four hours.

June 4th. Pulse 60; temperature 99.2°. With the cleansing enema this morning there was a small amount of fecal matter. To-day she is taking milk, with equal parts of lime-water, one-half an ounce every hour. The nutritive enemata have been entirely omitted, owing to the irritability of the rectum. The dressing was done this morning; the outside gauze changed. It was thoroughly saturated with a serous ooze, and had a peculiar yeast-like odor. During the day she took six ounces of milk and lime-water and five ounces of cold water; no stimulants at all. In the evening the pulse was 66; temperature 100.8°. Milk and lime-water were now given, an ounce at a time every hour. There was one movement containing some solid feces. The dressing was changed again during the night. She was very restless during the night and complained of pain in the wound. Slept in short naps, of fifteen minutes, about five hours. Twenty-four ounces of urine in the last twenty-four hours. The dressing has a peculiar yeasty odor.

June 5th. Pulse 60; temperature 99°. She had a good movement of the bowels this morning, formed, but of a light gray color. The packing of the wound started out a little to-day. It is getting rather foul. The outer dressing is changed twice daily. She is given now the milk and lime-water once every hour, and on the half-hour an ounce of water. The evening temperature 101.2°; pulse 70. The hacking cough troubles her a good deal, and at times she brings up a little mucus. During the day she took twelve ounces of milk and lime-water. During the night she took eight ounces of milk and lime-water, making twenty ounces of milk and lime-water during the twenty-four hours. Twenty ounces of urine in the last twenty-four hours. She had a better night than usual; was less restless, requiring no opiate.

June 6th. Pulse 64; temperature 98.8°. The bowels moved this morning — still of a light brown color. To-day the white of an egg is added to the milk and lime-water, but the amount is not increased above an ounce. During the morning she was given one soft-boiled egg, parts of which appeared in a movement of the bowels an hour and a half later. The white of an egg was given each time with the milk and lime-water; no more boiled eggs were tried. During the day she had twelve ounces of milk and lime-water and the whites of three eggs. Afternoon pulse 72; temperature 100.6°. The irritation of the throat seemed to cause a good deal of distress, and a half-grain of codeia was given during the evening. She slept from five to six hours during the night, in short naps. The nourishment during the night was twelve ounces of milk and lime-water with the white of one egg. The nourishment for the past twenty-four hours has been twenty ounces of milk and lime-water, the whites of four eggs, and one soft-boiled egg.

June 7th. Pulse 76; temperature 98.4°. This morning she was given liquid nourishment to the amount of two ounces, — beef-juice alternated with milk and lime-water, with the white of egg. The dressing was done this morning, and the gauze packing entirely removed. It was thoroughly saturated with a yellow-colored fluid, of an offensive yeasty odor. On removing the gauze packing there was a large opening left down to the region of the suture. This was washed out with boiled water and lightly repacked with strands of gauze. The nourishment during the day has been four ounces of beef-juice, four ounces of milk and lime-water, with the white of one egg, four ounces of gruel. Pulse at 5 P. M. 104; temperature 101.8°. The cough still bothers her, but is somewhat relieved by codeia, one-half grain. She had a fair night — slept about six hours. The twenty-four-hour amount of nourishment was as follows: gruel thirteen ounces (plain oatmeal gruel), milk and lime-water thirteen ounces, white of three eggs, beef-juice four and a half ounces.

June 8th. Pulse 78; temperature 99°. The dressing is now done twice a day, and the sinus irrigated with boiled water and repacked with gauze each time. There is still a large amount of discharge which has the characteristic yeasty odor. During this day there seemed to be a little constipation, and the patient was given half a grain of calomel and later a sedlitz powder. She had a good night. The amount of nourishment during the twenty-four hours was: beef-juice seven ounces and a half, gruel twenty ounces, beefsteak to chew, white of egg, milk and lime-water seven ounces.

June 9th. The nourishment is now given in two-ounce amounts. There seems to be a tendency toward diarrhea, the patient having had several loose movements during the day. The afternoon temperature was 99°; pulse 88. Nourishment now given four ounces at a time every two hours. Twenty-four hours' amount of nourishment: gruel twelve ounces, milk and lime-water twenty-eight ounces, whites of four eggs, beef-juice seven ounces.

June 10th. Pulse 88; temperature 99.8°. Two soft-boiled eggs were given during the morning, and apparently were digested. The patient now has a fairly comfortable time, though she is rather restless at night and complains still of the cough. The amount of urine in twenty-four hours to-day is thirty-six ounces. Amount of nourishment: four ounces of beef-juice, two soft-boiled eggs, the whites of four eggs, sixteen ounces of gruel and sixteen ounces of milk and lime-water. She apparently is gaining a little strength each day. The dressing contains less discharge, and the wound is beginning to granulate.

June 11th. It has been impossible to persuade the patient to take any form of stimulant; in fact, she has improved so steadily that it has not seemed necessary. To-day she was given some claret and water; but would take it only once. Liquid Dover's powder was given during the night to see if it would benefit the cough, and she had a better night than usual. The amount of nourishment for this twenty-four hours was twenty ounces of gruel, twelve ounces of milk and lime-water, whites of four eggs, two soft-boiled eggs. The bowels moved twice during the twenty-four hours.

From this time until the 18th of June there was nothing especial in the history of the case. She took practically the same amount of liquid nourishment and gained a little strength each day. Nothing unusual occurred. The discharge became daily less offensive and the patient grew stronger.

On June 13th with her liquid nourishment, she tried a small piece of bread and butter, which apparently was not digested and caused some diarrhea. She can now take with comfort four ounces of liquid nourishment every two hours, and apparently it causes no distress and is properly absorbed.

On June 18th the pulse rose to 106; the temperature to 102.5° in the morning. She was much weaker on this day and apparently something was going wrong. The temperature on the previous day had been practically normal in the morning, but 102° in the evening, and this morning it was still up. The amount and character of the discharge from the sinus did not account for her temperature, — there was still a peculiar yeasty smell, but no evidence of suppuration. There was a troublesome diarrhea. The food was peptonized to-day without apparent effect. In the evening the temperature fell, but still she seemed restless and as if something was going wrong. During these twenty-four hours she took three soft-boiled eggs, the whites of three eggs, twenty ounces of peptonized milk and seven ounces of beef-juice. Owing to her poor condition, we thought that some of her trouble might be due to malnutrition from not properly digesting her food. Dr. Pfaff was called to see her in consultation. He thought that the rise of temperature and her poor condition were owing partly to digestive disturbance, possibly from too much feeding by mouth, and also to absorption from the wound.

June 19th. The pulse was 110 and the temperature 102.2° in the morning. The digestive tract was entirely put at rest during this day by giving no food by mouth. Enemata were given three times during the day and the sinus washed out with peroxide of hydrogen and very dilute solution of corrosive sublimate. Several sloughy stitches and pieces of necrosed tissue were fished from the depths of the wound by means of a crochet needle. In the evening the pulse was 102, and the temperature 101.4°. To-night the face has begun to swell, and the patient has evidently an alveolar abscess, which may possibly account for some of her disturbance.

June 20th. Pulse 106; temperature 102°. The face is swollen and there is a great deal of pain. The abscess was opened and considerable pus removed. In other respects the patient is in good condition.

June 21st. To-day champagne, half an ounce at a time, is added to the liquid nourishment, and is much appreciated by the patient. Codeia, one-third of a grain three times a day, seems to control the troublesome cough. She is taking nourishment well and seems to be gaining. The temperature is gradually coming down. There is more pus from the sinus, and silk sutures have been discharged at various times.

June 24th. This morning, temperature 100°; pulse 106. The evening temperature was 99.5°. This is the first day for almost a week that it has approached normal. The rise of temperature seems to be explained by suppuration at the bottom of the sinus, with absorption of putrefactive products, for the ligatures and pieces of tissue which come out from the sinus at times have been very offensive. The sinus is now discharging less and the patient has assumed a better aspect. The champagne which she has had for the last three or four days seems to have materially assisted her. The amount of nourishment in twenty-four hours has been beef-juice six ounces, chicken broth eight ounces, milk and lime-water sixteen ounces, and the whites of eggs eight ounces.

June 26th. Small amounts of bismuth given three times a day have helped restrain frequent movements of the bowels. To-day the temperature and pulse are practically normal. The patient has sat up out of bed for half an hour. Some nights it is necessary to give a small dose of codeia for restlessness. The amount of nourishment to-day has been six ounces of chicken broth, sixteen ounces of milk and lime-water, three ounces of beef-juice, twelve ounces of chicken broth, whites of ten eggs, roast beef and ice cream. The beef was chewed and only the juice swallowed.

June 27th. The patient has sat up again out of bed to-day and has gained remarkably in strength. The nourishment for this twenty-four hours has been as follows: beef-juice six ounces, chicken broth twelve ounces, barley broth six ounces, milk and lime-water eight ounces, whites of ten eggs, some white meat of chicken and boiled rice.

From this time until July 5th there was nothing of special interest in the history. She has made a steady improvement. The nourishment has been practically the same. There is distress if more than four or five ounces are given at a time, and a solid food, like bread, apparently does not agree with her yet.

On July 5th the patient went home, driving five miles in an open carriage without fatigue. Since arriving at home she has been out of doors all day long, and has improved in general condition. At present she is enjoying life, her food satisfies her hunger, is digested perfectly well, the bowels move normally, and she is free from the distress that she used to have after taking food.

On August 24th the patient was examined by Dr. Richardson. The wound was entirely healed. Her general appearance was good. There was no evidence of recurrence. She looked much improved, and reported herself as feeling very well. There had been a "drawing sensation" in the epigastrium as if something was on the stretch. This feeling had caused a slight stooping, which was, however, rapidly disappearing.

In connection with this and similar cases of malignant disease the question of surgical interference may well receive a few words of discussion. The patient left to palliative treatment, though he avoids the dangers and sufferings of a surgical operation, has before him:

(1) The suffering incident to the disease. (This may vary between discomfort and unendurable pain.)

(2) A hopelessness and mental depression to which death is in many instances preferable.

(3) Certain death.

If subjected to a radical operation the patient has before him:

(1) The dangers and sufferings of a surgical operation. (But, though the danger is great, the suffering may be no greater — it may even be less — than the suffering incident to the disease.)

(2) Hope and elevation of spirits instead of mental depression and despair.

(3) A fair chance of a recovery that may be permanent, though recurrence may be the rule.

A careful consideration of this question in favorable cases leads to but one conclusion, namely, that the greatest good will follow reasonable surgical interference. The chief arguments against radical measures seem to be in the necessarily great dangers of the operation, and the uselessness of deliberately incurring them. Certainly no method of treatment is justifiable which is useless. But the operation in suitable cases is by no means useless, as shown (1) by the lessening of suffering and the prolongation of life, — facts observed by physician and friends, and (2) by the satisfaction expressed by the patient himself. The arguments for and against operation in cancer of the breast apply to operation upon cancer of the stomach or of the intestines. It is certainly not justifiable in cases of breast cancer to deny the patient the twenty-five or more chances in a hundred which the modern operation surely gives. Is it justifiable to deny the patient with cancer of the stomach a chance for recovery, — small though it may be? It seems to me that but one answer is reasonable, namely, that with the facts before the patient, and with his consent, the most radical surgical measures are demanded if upon exploration the disease is so localized in the stomach that it can be removed by a broad margin.

The argument in favor of surgical interference that without operation the patient must die — an argument responsible for much unnecessary and unjustifiable surgery — should carry no weight unless the disease is clearly within the margins of a possible dissection. Operations undertaken in malignant cases anatomically inoperable bring upon surgery nothing but discredit. Operations, no matter how severe and dangerous, undertaken with a distinct possibility of benefit or of complete cure, cannot but elevate the art of surgery, even if they are but rarely successful. Not to give the willing patient a chance of recovery in cancer of the stomach, of the intestine, of the rectum, of any operable region, is to give up the fight without a blow.

Dr. Whitney's report is as follows:

The stomach is contracted, measuring 16 by 20 cm., and is very much hypertrophied, especially in the region of the pylorus. This increase in thickness is general, and diminishes gradually to the cardiac end. The inner surface is reddened and irregularly elevated, but without any distinct tumor. The mucosa is not movable, and to the eye the thickening appears chiefly in the submucous layer, which is dense and fibrous.

The microscopic examination made from different places along the line (greater curvature) in which it had been opened shows the fibrous submucous tissue increased in density, with large numbers of lymphoid and plasma cells scattered through it. This can be followed between the bands of the muscular fibres, which seem also to be hypertrophied.

The mucous membrane is in places of normal thickness and in others diminished. In one section in a small area the glands are atypical, solid, and appear to be extending into the submucosa. Close to this is a lymphatic, which is filled with relatively large round cells, suggesting a new growth.

As far as this examination goes, the diagnosis would be cancer with a diffuse submucous hypertrophy, — a condition which is commonly recognized as scirrhous cancer of the stomach.

Note. — October 16, 1898: examination by Dr. Brewster. About two weeks after the last examination the sinus re-opened and discharged a bile-colored fluid. About two weeks ago the sinus closed again. During this time several sutures came away with some pus. The sinus has now been healed for two weeks and the patient has begun to regain the strength that she lost some four weeks ago. The most troublesome symptom is distress after eating. At times she finds it hard to swallow food. Her diet consists of broth, eggs, milk, bread and butter, black bean soup, small pieces of meat, string beans and shelled beans. She has five meals a day. She has gained a great deal in strength, and though she has not gained in weight, she looks well. The bowels move without laxatives and the movements are formed.

THE RESTORATION OF A LOWER EYELID BY A NEW METHOD.

BY GEORGE H. MONKS, M.D., BOSTON.

I recently had a case at the Boston City Hospital where as a result of operation for malignant disease it was necessary to supply a new lower eyelid. I employed a method quite new, so far as I know, in many of its details, although the main principle upon which it rests was originally suggested to me by an article by Dr. Theodore Dunham, of New York, recommending the use of flaps from the scalp for covering certain facial defects.[1] Dunham had a patient with a large defect in the side of the nose and cheek, which defect he covered with a long flap taken from the scalp. He took care that the flap should include the anterior branch of the temporal artery and the veins with it. Some days later when the flap had firmly united to the edges of the defect he dissected out the vessels in the pedicle and buried them beneath the underlying skin of the cheek, after which he returned the skin and other tissues of the pedicle back to the place they came from in the forehead. The flap itself continued to be nourished by the vessels of the pedicle buried beneath the skin of the cheek. This ingenious operation, suggested and first employed by Dunham, is of course only applicable to persons who are bald over that part of the scalp where the artery runs.

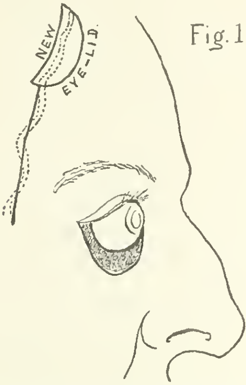

Fig. 1.

The patient to whom I referred at the beginning of this article was sent to me by Dr. E. E. Jack. The man had an epithelioma on both lower eyelids. He was especially desirous that the one on the right side be entirely removed, as it was the larger of the two, and was growing quite rapidly.

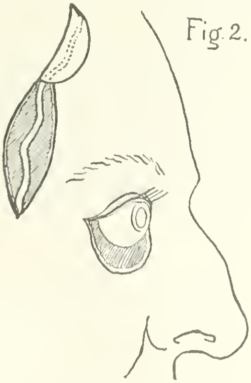

Fig. 2.

When it came to the operation I found that the disease had extended backwards well into the soft tissues below the eyeball, and I therefore found it necessary to remove not only the entire lower eyelid but also a good deal of the tissue in the immediate vicinity, leaving a large defect under the eyeball. I had determined beforehand, as the man was bald, to make a new lower eyelid out of a small bit of the scalp, and to utilize the anterior branch of the temporal artery to nourish it, as Dunham had suggested, but in a somewhat different way.

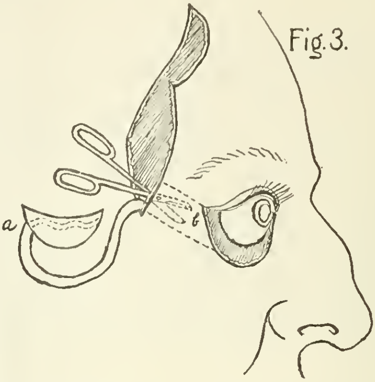

Fig. 3.

Having ascertained by pulsation the exact course of the artery in its whole extent, I then marked out with the knife near the end of the artery a crescentic piece like a lower eyelid, but a little larger. I further marked out — also with the knife — a straight line indicating the general course of the artery from the temple to the new eyelid (see Fig. 1).

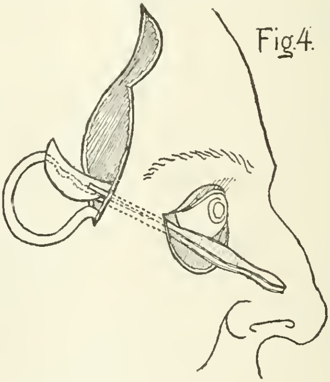

Fig. 4.

The subcutaneous tissues containing the artery, veins, etc., were now dissected out up to the new eyelid (see Fig. 2), so that they were completely freed from the underlying tissues. The eyelid comprising the entire thickness of the scalp was then cut out, great care being used lest the vessels of the pedicle be injured at a point where they joined the eyelid. I now had hanging from the region of the temple a long pedicle of subcutaneous tissue containing the artery, and attached to the end of it a crescentic bit of tissue of the full thickness of the scalp and covered with skin (see Fig. 3, *a*). All through the long pedicle and in the new eyelid at the end of it the beating of the artery could be distinctly felt.

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[1] See Annals of Surgery, 1892.

From a point of the temple, near the proximal end of the pedicle, I now tunnelled under the skin with the scissors until I reached the defect under the eyeball, left by the removal of the lower lid. This subcutaneous tunnel is shown in Fig. 3 (*b*). The new eyelid was then drawn by forceps through the tunnel (see Fig. 4), brought into the gap beneath the eyeball, and stitched in position (see Fig. 5.)

The new eyelid was now in proper position and covered the defect entirely. I had little fear that it would slough, for, even when it was in place, the strong pulsation across it from end to end was sufficiently reassuring. The wound in the scalp was sewed up, with the exception of a small area at the upper end of it, which was left to granulate.

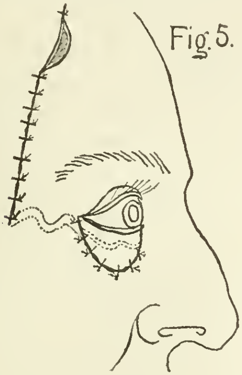
Fig. 5.

The eyelid did not slough, but healed kindly in its new bed. Subsequent contraction caused some bulging of the flap and also a slight displacement outwards, the latter being due to extreme contraction of the pedicle; but as a whole I think the operation was successful, for the flap completely and permanently filled up the gap, while the scarring of the face was insignificant. I do not know whether there has been any recurrence of the epithelioma, for the man left the hospital about six weeks after the operation, and I have not seen him since.

The Chicago Society of Internal Medicine. — At the regular meeting of the Chicago Society of Internal Medicine in conjunction with the Chicago Medical Society, Wednesday evening, October 19, 1898, the following subjects were discussed: Dr. Adolph Gehrmann, "The Results of Widal's Test in the Diagnosis of Typhoid Fever from Dried Blood Specimens"; Dr. J. M. G. Carter (Thesis) "The Treatment of Typhoid Fever, Based upon a Study of Seventy Cases."

Clinical Department.

MASSACHUSETTS GENERAL HOSPITAL. CLINICAL MEETING OF THE MEDICAL BOARD.

Regular Meeting, Friday, February 11, 1898, Dr. C. B. Porter in the chair.

Dr. James C. White gave the following cases:

ALEPPO BOIL.

This little boy is an Armenian. He is the only child who escaped with his mother out of a town where a massacre took place. He has come into the out-patient department on account of an acute inflammatory process of the scalp; but he presents also upon his face appearances which are of great interest, inasmuch as they are the permanent remnants, the cicatrix, of an affection very common in Armenia, as it is in other parts of the central and southern parts of Asia and along the Mediterranean coast, namely, aleppo boil, Delhi boil, Biskra, or furunculus orientalis, as it is variously called. As you know, there are now a good many Armenians here, and we have already seen quite a number of instances of this affection in this stage. It is an infectious disease, occurring at all ages, especially in children, and affecting chiefly the parts exposed — hands and face — in the form first of a single small papule, becoming slowly pustular, and then denuded of its cover and forming a crust; the crust remaining adherent a long time, whilst beneath it a destructive process goes on, and the lesion spreads laterally, until, by the growth of a single one or the confluence of many in the same area, it affects large portions of the skin, sometimes forming a cicatrix more than an inch in diameter. It is inoculable and often affects several members of the same family, but the infective element has not yet been positively determined. Several cocci have been discovered in it, but the cultures of them are not inoculable, as the materials which are found in the discharge from the sore are.

This condition is especially interesting because the scars, which last through life, are very deep and large and disfiguring in character, and are very likely to be interpreted as the results of a syphilitic process. It will be well to remember, therefore, that we are getting here a considerable number of these scars on different parts of the body in representatives of this nation. This patient shows very well indeed the character of the lesion, but it is not so deep as several we have seen are.

HYDROA ESTIVALE OR VACCINIFORME.

I show you also two extraordinary examples of a rare affection. These children were brought to me a year ago. As you will observe, their faces and extremities are thickly occupied by more or less circular cicatrices varying in diameter from an eighth of an inch to an inch. You will notice also some of the primary forms of lesions which always terminate in these scars, namely, large vesicles and bullæ.

The disease began in the girl, now ten years old, according to the mother, at the age of eight months, in the month of December, with crops of water-blisters upon the face, lower legs and lower arms mostly, which succeeded each other continuously until the following April, when they entirely ceased to appear. This occurrence has been repeated yearly since then, the eruption beginning in November and disappearing in April. Her general health has remained good throughout. Please notice the deeply pitted condition of the ears and the central face, and the confluent and larger scars upon the extremities.

The other patient, the brother, is two and a half years old. The affection manifested itself first in him, the mother states, after an attack of chicken-pox in the month of April following his birth, in the form of pimples and water-blisters, becoming running sores and scales, upon the buttocks, lower legs and feet, lower arms and hands, face and ears. In December there was a period of quiescence, and since then there have been repeated terms of activity in the disease of great intensity. At present you will see very few fresh lesions, but will observe the scars upon the face like those from small-pox, the notched condition of the ears and alæ of the nose, and the larger deforming cicatrices upon the extremities.

In connection with these cases it is of interest to note that another brother had, when six months old, an eruption upon the face, arms and legs, described by the mother as similar to these, but he died three months later of pneumonia. There are five other living children in the family, all in good health.

The early forms of lesions in these exceptional cases resemble those of erythema multiforme, and dermatitis multiformis or herpetiformis (Duhring), but considering the whole course of the process, especially the marked scarring, they must be classed as exaggerated instances of hydroa vacciniforme, or estivale. Ordinarily this disease affects boys rather than girls, and is active only in summer, but the deviation in our cases from these general rules are not without precedent. McCall Anderson has recently reported the presence of a modified hematoporphyrin in the urine of two adult brothers affected by the disease. Professor Wood has kindly made an analysis of the urine of this boy, but found none of that substance present.

Dr. Richard C. Cabot reported a marked increase of eosinophiles in the blood, 8.2 per cent.

Dr. C. B. Porter reported the following cases:

ECTOPIC GESTATION. — TWINS. — OPERATION.

Case I. I will show first to-night a specimen from a case of ectopic gestation sent to me by Dr. Moulton, of Lawrence. The history, briefly, is as follows:

Married eighteen years. Within three years of marriage had two children. Since that time thirteen years sterile. Regular till three months ago, which was her last menstruation. Since then up to one month ago there has been a slight bloody discharge, some mornings nausea, has passed some clots, had pain most severe low down in the back. Two weeks ago took to her bed on account of pain and weakness.

Bimanual examination showed uterus slightly to the right; the left cul-de-sac filled by a mass the size of a small mandarin orange behind the left broad ligament. Outline smooth. No fluctuation. Depth of uterus two and three-fourths inches. Diagnosis of probable extra-uterine pregnancy.

Operation. — The peritoneal cavity was opened through the rectus muscle. The tumor was the enlarged fimbriated extremity of the Fallopian tube. This was removed without rupture, a ligature having been placed on distal side of ovary. No bleeding and the abdominal wound was closed with four lines of suture. The recovery was without incident. The tumor was hardened by Dr. Whitney and on section, had an embryo in each half. Specimen shown.

INTESTINAL RESECTION FOR CURE OF FECAL FISTULA FOLLOWING OPERATION FOR APPENDICITIS.

Case II. Operation. Patient, female, age twenty-six; had been sick three weeks, when she was operated upon by Dr. J. W. Elliott, who found the abscess wall friable and intestine ruptured. Cavity was cleansed and drained. Wound partly closed at each end.

Patient did well, but a large fecal fistula remained with a gap in the abdominal wall three inches long and one and a half wide. Four months afterward the wound was at a stand-still and I operated as follows:

The wound was surrounded by an incision one-half inch from the border through the skin; this dissected up until the edges could be stitched together to prevent any escape of feces. Then the peritoneal cavity was opened above the wound towards the umbilicus. With a finger in the cavity guiding the operator, the cicatrix containing the fistula was dissected out, downwards towards the pubes. Here it was found adherent to the bladder and uterus. With a sound in the bladder as guide, this was freed and then the uterus, the parietal wound being five inches long. This allowed the ball of intestines to be brought out of the wound, the peritoneal cavity was walled off with gauze, the stitches which temporarily closed the fistula were removed and the intestines freed from each other, when it was found that two inches of the ileum must be resected. This was done and the gut united by end-to-end suture. The mesentery was tied off with animal tendon. Around each end of the intestine was placed a running suture of fine catgut through all the coats. Then a continuous stitch of fine catgut united the ends and this was reinforced by Czerny-Lembert stitches of fine silk. The field of operation was cleansed and the loop dropped into the peritoneal cavity, the omentum brought down over the intestines and the parietal wound closed with silver wire. There was some pain, nausea and vomiting on the following day, but otherwise the convalescence was uneventful and the union perfect.

THREE CASES OF FRACTURE OF UPPER END OF HUMERUS WITH DISLOCATION OF HEAD.

Case III. I will show as rapidly as possible three cases. This patient came for the relief of pain which was produced by the pressure of the head of the bone upon the brachial plexus. A vertical incision was made over the bicipital groove. The bone was brought into place with a powerful tenaculum, but was followed by a most profuse hemorrhage. It was a gush which was really alarming and the whole wounded surface was stuffed with sponges. At the time, of course, all the gauze was blood-stained, and after waiting some time with the pressure applied, the sponges were taken out, and as I supposed, all. It was found a considerable time afterward in investigating the wound as to why it did not heal, that a piece of gauze was left in the wound. That was removed and the silver wire which wired the fragments together and then it healed to only a very small fistula from which there was scarcely any discharge. Still there was this annoying delay and a week ago Saturday I operated, went down to the parts and took out the head of the bone which was soft and mushy and undoubtedly would be of no service, and that I hope will end the trouble. [Since time of report, wound has filled up rapidly and it is now practically healed. No pain and good motion.]

Case IV. Seven weeks before this patient came she fell and met with the same accident, a fracture of the upper end of the humerus with a dislocation inwards. She came for relief from pain. She had not been able to sleep from the constant pressure of the head of the bone. I decided to remove the head of the bone. After the operation the relief was so great that she slept for nearly twenty-four hours. She has made a very fine recovery. She was operated on October 8th, and since that time she has been gradually getting back the power in her arm. For some reason, most probably pressure of the head of the bone upon the vessels, she had considerable edema, but that is disappearing under massage.

Case V. Eight weeks before this man came to the hospital he was on a vessel loaded with granite and in very rough weather, and was finally obliged to take to the boat as his vessel was sinking, but as he was getting into the boat, he was struck by a swinging derrick and knocked into the sea. One of his comrades did get into the boat, and finally, as he was going down the second time, his comrade grabbed him and rescued him from drowning. He came with fracture of the upper end of the humerus, the head dislocated inwards.

Incision from acromion downward three and a half inches; union with articular surface facing downward and outward; upper fragment removed. In lifting it from its bed and taking it out, the tendon of the long head of the biceps was divided. That was afterwards sutured, the wound closed with provisional sutures and drain. These were tied on the fifth day. He made a most excellent recovery. He left the hospital the first day of January, twelve days after operation. Five weeks after operation he could flex forearm to nearly normal amount.

AMPUTATION OF WHOLE UPPER EXTREMITY INCLUDING SCAPULA.

Case VI. This man nineteen years ago noticed a small growth on the base of the thumb. This gradually increased and was curetted from time to time. It finally involved the whole hand. The forearm was amputated at middle the 14th of October. It was a case of malignant disease, probably in the beginning senile keratosis, and the disease returned subsequently in the scar itself, above the elbow, invading the glands of the axilla and there seemed to be nothing to do but an amputation of the whole upper extremity, that is, the arm and the scapula.

Operation. I first removed the middle of the clavicle, exposing the subclavian vessels; the artery and vein were each ligatured twice and divided between. The incision which exposed the subclavian was then carried outward over a portion of the deltoid and downward to the anterior border of axilla, the skin flap dissected inwards exposing the pectorals which were both removed. Then from the same points above an incision was made outward, backward and downward to the posterior border of axilla and then forward to meet the anterior one. The skin was reflected toward the mid-line and the trapezius was then divided, the subclavian, omo-hyoid and brachial plexus, the omohyoid, levator anguli scapulæ and the two rhomboids. The extremity was then attached only by the serratus magnus and latissimus dorsi which were divided with one stroke of the knife. There was little blood lost. The whole field of operation was then cleaned of pieces of muscle, glands, etc., and the brachial plexus divided higher up to avoid implication in the cicatrix. Wound closed by anchor sutures of silkworm gut and continuous fine catgut.

On the Saturday following he was shown in the amphitheatre with the wound all healed, and now it is not two weeks till to-morrow since the operation was done, and he is, as you see, in pretty good condition.

ACUTE PANCREATITIS.

Dr. J. W. Elliot: This man is supposed to have had an attack of acute pancreatitis and he is here for further observation. Four weeks before he came he had an attack of pain in his stomach region with a rise of temperature and vomiting. He came with a temperature of 103° F., with a prominence just below the stomach or just behind the stomach and to the right. This was considered to be either an acutely inflamed gall-bladder or an acute pancreatitis. The diagnosis was made on the presence of the tumor and the acute symptoms; it seemed as if the abscess must be in the lesser omental cavity. I made an incision rather to the right of the median line in order to cover the chances of gall-bladder. I passed the gall-bladder and found a cake of adherent mesentery, intestines and stomach and having walled off with gauze I pushed my finger into the lesser omental cavity and there came out in quantity a pus with greasy, fatty fluid. That was drained in the ordinary way. He now has a fistula which discharges straw-colored fluid. Dr. Pfaff has examined it and does not feel certain that it is pancreatic, but most of the gentlemen who have seen the case think it is pancreatitis as the fistula goes into the lesser omental cavity and the fluid could scarcely come from any other organ. He has come for observation to have his feces and urine examined. One of the interesting things about it is that before this attack he felt acute and shooting pains along the border of the left ribs. He mapped out practically the whole line of the pancreas in showing where these pains were.

It is obscure and interesting. I shall report the case more fully when it is all settled and we know more about it.

It will be the second recorded case of pancreatitis recovering after drainage of the abscess.

AMBULATORY TYPHOID AND LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

Dr. Fitz: Two cases of *typhoid fever* in my wards have presented features of unusual interest to which I will call attention. The first patient entered on the surgical side to be operated upon for piles. Dr. Beach found the temperature elevated, and therefore thought it desirable to postpone the operation until the temperature should become normal. Soon after this occurred the temperature rose again, and it was thought that there might be some complication requiring medical consultation. At the time I saw him the temperature chart showed so typical a curve that it seemed likely that typhoid fever was present. The Widal reaction proved positive and he was transferred to the medical side. As is to be seen, the range of temperature is that of a typical relapse of typhoid fever and the patient is now in a condition of perfectly normal defervescence. The interesting point is that he was out and about, an ambulatory case of typhoid, for three weeks before he came to the hospital, which he entered to be operated on for piles. Previous to his entrance and during his early stay in the hospital he was given house diet, despite which his case remained so mild that he presented no symptoms of any particular inconvenience.

The second case is one of *typhoid perforation* of the *intestine.* The patient came into the hospital after having been sick a few days, and during the first fortnight of his stay, although seriously ill, showed no indication of any particular complication. Then, as is to be seen from the chart, the temperature suddenly fell four or five degrees, the respirations and pulse increased in frequency, but even then there was very little discomfort.

In the right half of the abdomen, however, below the navel, there was a certain amount of tenderness which persisted and spread a little on the following day. It was evident that a peritonitis was beginning and, considering the nature of the disease and that the peritonitis was spreading in the right lower quadrant of the abdomen, it seemed probable that there was either a perforation of the intestine existing or threatening or that a necrotic mesenteric gland was the source of the peritonitis. In 1891 I considered the subject of perforation of the intestine in typhoid fever in a paper read before the Association of Physicians. I was able to collect at that time but ten cases in which early laparotomy had been performed for the relief of this complication at the height of the disease. In only one of these was a successful result obtained, and the account of this case was so incomplete that it was of but little value as a precedent. The opinion was then expressed that perforation into the free abdominal cavity in typhoid fever resulting in a diffuse peritonitis was not likely to be successfully treated by immediate laparotomy. The patient's condition was usually such at the time of perforation in the third or fourth week of the fever that it was doubtful if the patient could recover from the operation and that laparotomy for such a complication was likely to prove successful only under the most favorable circumstances. Since that time a number of operations have been done, but the majority of those which have proved successful have not fulfilled the conditions as stated. The cases have been those of perforation resulting in circumscribed peritonitis, or of perforation during relapse when the opportunity had taken place for the patient to have rallied considerably, and in one instance an operation was done when the patient was up and about. Dr. Watson, for example, operated on a patient at the City Hospital in the seventh week from the onset of the fever, when he had rallied from the immediate effects of the disease and the peritonitis was sharply limited. In the above-mentioned communication I collected 29 cases of peritonitis in typhoid fever irrespective of its immediate method of origin; three recovered after operation, 17 ended in resolution and nine in the spontaneous evacuation of pus. In 1896 Dr. Armstrong, of England, made a collection of 23 cases of laparotomy for perforation with four recoveries. Dr. Finney in 1897 tabulated 52 cases with 17 recoveries, but in neither of these series of cases does that sort of criticism appear which will aid the judgment in determining whether in a particular case an immediate operation gives more chances for the recovery of the patient than its avoidance. In the case now called to your attention the conditions were unusually favorable. The man, although quite sick from the typhoid, was not prostrated by the peritonitis, the pulse remained good after the first fall of temperature, respirations came to the normal and he was taking his nourishment well. There was so little constitutional disturbance that the day after the fall of temperature there was nothing to indicate there had been any particular disturbance. At the same time, realizing that a peritonitis had occurred, and that it was probably from perforation, I asked Dr. Beach to see the case with me and we both agreed that an immediate laparotomy was desirable. Dr. Beach operated and he will speak of the results of his treatment. Transferred to the surgical service.

OPERATION BY DR. BEACH.

December 9th. An incision of eight inches was made in the median line, permitting the escape of gas and thin fecal fluid from the peritoneal cavity. The same fluid was found in both glands and in the pelvis. There were numerous flakes of fibrin, some so loosely attached to the intestine as to be easily removed. The presenting coil of small intestine was first carefully inspected for perforations and the examination continued along the intestine until within a short distance of the cecum, where an ulcer was found with liquid feces pouring from it. It was closed by fine silk Lembert stitches at right angles to the axis of the gut to avoid any narrowing of its lumen. The abdominal cavity was washed out with hot boiled water, and tightly closed with silkworm-gut sutures. About a pint of normal salt solution was left in the cavity; foot of bed raised and one-twentieth grain strychnia; whiskey thirty minims and tincture digitalis twenty minims subcutaneously; time of operation thirty minutes; no vomiting after ether. The temperature, which on the morning before operation had been 103°, fell to 99° that night. It rose to 101.3° on the following morning and by that night reached 104°. It averaged 102°, after the operation reaching 105° once. Pulse variation was from 100 to 115 at 7 P. M. On the night of operation four grains of calomel; small quantities of milk and lime-water at short intervals afterwards. Half an ounce of whiskey every six hours.

December 10th. Liquid diet; stimulant continued; foot of bed lowered; no distention; patient comfortable.

December 11th. Suds and glycerine enema with fair result; three ounces of blood; stop everything for six hours. Later another movement with same amount of blood; another movement later without blood.

December 12th. Liquids eleven ounces; movement of bowels without blood.

December 13th. Two bloody movements, three ounces.

December 14th. One bloody movement, one ounce of decomposed blood.

December 15th. Dressing done, contamination with hands (?); has stitch abscesses; rather more stupid; small amount of blood at 5 P. M.; no feeding during the night.

December 16th. Brighter and better; wound dressed; stitch abscesses cleaned; taking nourishment well; no blood in stools.

December 17th. Night nurse reports that whenever he drank anything he put his hands on each side of the abdomen and complained of a pain extending from side to side. Reported later for sweating, bad pulse, pallor and drawn features. Under ether, Dr. Beach removed all sutures and cleaned the superficial part of the wound by repeated washing with peroxide of hydrogen. Then opening the deeper part of the wound exposed the peritoneal cavity and from it removed about a pint of dark-colored fecal fluid which had in part poured out of a large ulceration found at the head of the cecum. The new perforation was sutured with a continuous Lembert stitch. The softened and inflamed condition of the gut added much to the difficulty of operating. The site of the former suture was found in good condition. The peritoneal cavity was flushed with hot water and the wound closed with a gauze drain leading to the point of suture. Foot of the bed was elevated and stimulation with nitro-glycerine, strychnia and digitalis employed. He continued to fail and died in the latter part of the afternoon. The post-mortem showed many ulcerations in the lower three feet of the ileum and the ascending colon. A large necrotic area in the cecum and foul peritoneal fluid.

(To be continued.)

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

MILIARY TUBERCULOSIS OF THE SKIN AND THE CONTIGUOUS MUCOUS MEMBRANE.

Kaposi,[1] who has not yet given his adherence to the universally accepted view that lupus vulgaris is a form of cutaneous tuberculosis, has always based his objection partly upon the fact that there is a morbid process of the skin that corresponds absolutely with miliary tuberculosis of the internal organs, and in its clinical characteristics is totally different from similar processes, especially lupus vulgaris and scrofuloderma. Cornil and Ranvier seem to have been the first to mention this form of tuberculosis upon the skin, although its existence upon the mucous membranes had been recognized previously. Chiari was the first to give a careful histological description of the form, from five cases that he had observed post-mortem. Jarisch was the first to describe it clinically. Kaposi thinks that many of the cases reported do not properly belong under this heading. Twenty-two cases of this miliary tuberculosis of the skin have been observed at the Vienna clinic since 1879. Of these 22 cases 18 were in men and only four in women, while the age varied from twenty-eight to sixty years. The beginning of the affection dated back only a few weeks or months in at least a third of the cases, in the others at the most three or four years, so that the development was on the whole pretty rapid. More than one-half of the cases terminated fatally in the hospital, and showed at the autopsy tuberculosis of the internal organs. In eight cases the affection was limited to the skin, in eight cases it was equally distributed upon skin and mucous membrane, and in six cases it was chiefly upon the mucous membrane with implication of the skin of the contiguous parts. The favorite seats of the lesions upon the skin were the lips and nostrils, upon the mucous membranes the cheeks, palate and gums.

Clinically the characteristic features are most marked in the ulcers. The ulcer is a shallow loss of substance with small serrated edges, as if "gnawed-out," pale red border and floor, very superficially infiltrated, covered with a viscid secretion, and exceedingly painful. Very often small raised nodules, similar to a comedo or milium, are seen at the edge of the ulcer, which break down and increase the size of the lesion, giving it its serrated edge. These represent true miliary tubercles, but are often not seen at certain stages, especially when they appear singly and break down rapidly. In many of the cases tubercle bacilli were found in the secretion, in the tissue curetted, in preparations of the excised edges, or in the tissue of the excised nodules. In other cases they could not be found, and this was undoubtedly when the miliary nodules were quickly eliminated from the inflamed tissue adjoining. In some instances the tubercle bacilli were only seen at times, but the characteristic appearance of the ulcers that has been described was considered sufficient for the diagnosis. The ulcer is to be differentiated from an epithelioma by the absence of the hard, glistening epitheliomatous nodules of the edge, and by the absence of the hard base; from lupus by the absence of the vivid red, easily bleeding floor, by its painfulness, "gnawed-out" edges, and by the absence of lupus scars, lupus nodules, etc.

The prognosis of this form, considered locally, is not so unfavorable as one might think. Kaposi believes it is not so unfavorable as lupus vulgaris. It sometimes disappears spontaneously, leaving a scar. Therapeutically, the ulcers may be healed by means of cauterization, excision and other procedures adapted to the individual case.

The tuberculous ulcers of the mucous membranes have been recognized much longer than the miliary form upon the skin. They occur upon the mucous membrane of the lips, cheeks, tongue, hard and soft palate, nose, and more rarely on that of the vulva, vagina, urethra and bladder. The affection very often spreads progressively from the mucous membrane to the adjacent skin. Occasionally one sees disseminated follicular lesions on the tongue, cheek and gums in the form of small red nodules, with later a pustule at the tip. These are very painful and are often scattered about at some distance from a miliary ulcer. Provided the internal tuberculosis is not too far advanced the prognosis of this form upon the mucous membranes is not very unfavorable. The writer's conclusions (which accord with, but do not on the whole add much to, our present knowledge of this form) are as follows:

(1) Miliary tuberculosis of the skin, or true cutaneous tuberculosis, is a form well characterized clinically, and is to be separated from lupus and all other forms of the so-called tuberculous affections of the skin.

(2) It is more common than has hitherto been assumed.

(3) It is almost universally found in individuals who are suffering from tuberculosis of other parts, mostly of the respiratory organs; but not solely, as has been maintained, in the last months of life, nor with miliary tuberculosis of internal organs.

(4) The cutaneous tuberculosis is very often accompanied by the same affection of the contiguous mucous membrane, but it often also exists alone.

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[1] Archiv. f. Derm. u. Syph., 1898.

(5) The affection of neither skin nor mucous membrane is to be regarded as absolutely hopeless from a prognostic point of view, as it sometimes heals spontaneously and is sometimes cured by appropriate topical treatment.

The writer adds a complete and valuable record of the 22 cases that have been observed in the hospital at Vienna. [It will be conceded by all that this miliary tuberculosis of the skin is to be regarded as a well-defined clinical and histological type. Its recognition, however, does not in the smallest degree prejudice the generally accepted view that lupus vulgaris and certain other forms of cutaneous lesions are also caused by the same pathological agent. — Rep.]

TREATMENT OF THE PRURIGINOUS DERMATOSES WITH GELATINE PREPARATIONS.[2]

Pick conceived the idea of incorporating chrysarobin and pyrogallic acid in gelatine in the treatment of psoriasis. The advantages of this method were its easy application after warming, its distribution in thin layers, and the formation of an even, firmly adherent covering when cool, which was not removed by rubbing, and which did not soil the linen and clothing. It could also be removed easily by a warm bath. In this way the advantages of an ointment and of an alcohol-ether varnish were combined. Later Pick improved the gelatine dressing by the addition of a small amount of glycerine which added to its suppleness. Thibierge has used the gelatine preparations extensively in the treatment of rebellious pruriginous affections.

Jacquet has shown that in individuals who suffer from prurigo, urticaria, or the vasomotor disturbances that accompany pruritus, protection from contact with the air by means of a dressing of absorbent cotton alleviates the itching to a marked degree, and causes the disappearance of the accompanying lesions of the skin. Analogous to this is the fact brought out by experiments on animals that the lesions and changes in the skin and mucous membranes that follow the cutting of nerves can be avoided if the territory deprived of its nerve force is protected from outer influences and injury. Hence it is argued that in the case of many of the dermatoses that are accompanied by pruritus, the pruritus plays the chief rôle. In prurigo Hebra, and in its atypical forms, the scratching is an important element. A complete covering which protects the epidermis, hinders the scratching, and thus removes one element of the affection, and it also protects against contact with the air.

The formula that Thibierge has found the most valuable is the following:

Gelatine	150	grammes.
Grénétine	100	"
Gomme arabique	50	"
Glycerine Eau bouillée } aā	300	" "
Oxyde de zinc	100	"
Phenosalyl	2	"

Against the complicated nature of this formula Thibierge urges that whenever he has departed from it the gelatine has lost in greater or less degree some of its important properties. The covering which this preparation of gelatine makes will remain adherent for eight or ten days in the hottest period of the year. The preparation is liquified by immersion in hot water, and is applied with a broad brush. It is best to give beforehand a warm bath with soap, so as to remove every trace of fat. Several layers of this gelatine are to be applied to the part affected with pruritus. Before the layer is thoroughly dry it is to be dabbed with a large wad of absorbent cotton. This facilitates the even drying of the gelatine, which is completed in from ten to fifteen minutes. When dry there is no unpleasant feeling of contraction, which the most of the varnishes and collodium produce. When only small areas are to be covered, it is often much simpler to spread the gelatine on muslin, forming thus a sort of plaster. This may be softened by dipping it into warm water.

The gelatine covering is allowed to remain for several days. When it has become chipped and broken, it is better to employ an entirely new dressing than to try to repair the old. The best means of removing the gelatine covering is a hot bath, or washing with hot water when only a small portion of the body is being treated. The feeling of refrigeration after the application of the gelatine is a constant phenomenon, and more marked the larger the surface treated. No evil effects upon the health were observed, even when the skin of the whole body was covered by the gelatine. Nevertheless, Thibierge believes that the whole surface should not be covered in the case of cachectic individuals whose secretion of urine is impaired, nor in the case of small children.

In all papular and lichenoid affections, and where there is a diffuse infiltration of the skin, the appearance of the skin is found to be greatly improved when the gelatine covering is removed. In any affection in which exudation occurs however, the eruption is made much worse. The best results are obtained in the prurigo of Hebra. The intensity of the pruritus in the majority of cases, the frequent disturbance of sleep, and the relative inefficacy of most other internal and external treatments make the quick lessening of the pruritus under the gelatine applications especially remarkable. It naturally does not effect a permanent cure, and must be looked upon as a palliative measure to be resorted to whenever there is a new outbreak. In pruritus dependent upon renal and hepatic disease, as well as in senile pruritus, good results are obtained with the gelatine. In chronic urticaria no benefit was derived from it. Thibierge concludes that gelatine preparations are of great value in the treatment of numerous pruriginous dermatoses, and represent a real advance over most of the methods previously in use.

TREATMENT OF SCLERODERMA BY ELECTROLYSIS.

Brocq[3] first attempted to treat isolated plaques and bands of scleroderma by this method in 1887. In the case of a man of fifty who had a band of scleroderma over the loins and lower abdomen, a great improvement was produced up to the time the patient was lost to view. In this case, the patient was treated at the same time with counter-irriation over the spinal column, mercurial plasters over the lesions, and iodide of potash internally, so that it was possible that the improvement was due quite as much to one or all of these agencies as to the electrolysis. He was induced, however, to try this method in other cases, and comes to the conclusion that the electrolytic current produces a real curative action on scleroderma in plaques and bands. It almost always happened that the progress of the affection was checked after two or three sittings. The first few applications seem to have a marked effect, which is not so apparent later on, so that the plaques disappear very slowly, sometimes in a progressive way, sometimes with longer or shorter intervals of arrest. It is difficult to say whether it is best to continue the sittings of electrolysis regularly, or to confine them to the periods when improvement has ceased. It is probable that mercurial plasters used in the intervals between the sittings hasten the resolution of the plaques. In eight cases out of nine Brocq succeeded in modifying or completely removing the affection. It was shown that in some cases the curative action of the electrolysis continued for several weeks after the last operation. It was also found that the electrolysis never produced a caustic or destructive action. Its effect is not produced at the point of contact, as parts of the lesion that the needle has not touched are seen to disappear, and in the case of subjects who have multiple plaques, lesions that have not been directly acted upon by the current are influenced favorably. On the contrary, when one has destroyed the tissue too much at each puncture, there are no better results as regards the disappearance of the lesion, and cicatrices are left. The single needle is much preferred to a combination of needles, as it can be so much better controlled. The manner of operating is very similar to that employed in the destruction of hair. The needle is attached to the negative pole, while the positive is held in the patient's hand. The intensity of the current is determined both by the subject and the degree of infiltration of the tissues. In children one-half to two milliampères are sufficient; with courageous people five to ten milliampères may often be reached. When the tissues are very hard and infiltrated, the current must be passed a much longer time, in order to obtain a good effect. The needle should be withdrawn when a dark circle about the point of contact shows the tissue has begun to be decomposed. It is important here, as well as in the destruction of hair, not to make two insertions of the needle near together. If the plaques of scleroderma are very thick, the needle should be introduced perpendicularly to the surface of the integument, while in cases where there is little infiltration it is better to introduce it obliquely. The séance is repeated when the small lesions produced by the electric needle seem to be healed. Usually the operation is repeated on the same place, about once a week. If properly performed no accident can happen. Serious destruction and scars can only be produced by too strong currents. Hemorrhage never occurs.

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[2] Thibierge: Archiv. f. Derm. u. Syph., 1898.

[3] Annales de Derm. et de Syph., February, 1898.

(*To be continued.*)

AMERICAN NEUROLOGICAL ASSOCIATION.

(Continued from No. 15, p. 374.)

Twenty-fourth Annual Meeting held at the New York Academy of Medicine, May 26, 27 and 28, 1898.

CONGENITAL FACIAL DIPLEGIA.

Dr. H. M. Thomas, of Baltimore, reported the histories of two brothers, twenty-one and nineteen, who showed this remarkable defect. The family history was unimportant except that the mother's aunt had given birth to a deformed child and that the mother herself had had a baby with a deformed foot. The birth of the elder boy was difficult, but no instruments were used. That of the second boy was normal in every respect. In each case it was noted shortly after birth that the baby was unable to close his eyes and that the lower lip drooped. Except for the facial deformity, the children developed normally. There was nearly complete bilateral facial paralysis, the patients being only able to retract and depress the corners of the mouth. Combined with this there was partial deafness in both ears, and the lobes of the ears were misformed. Movements of the eyeballs were perfectly normal and there was no other abnormality discovered. Dr. Thomas brought these cases into relation with the cases of congenital facial paralysis combined with defect in the movement of the eye-muscles, and with a few cases of uncomplicated unilateral congenital facial paralysis, and less directly with congenital muscle defects in other parts of the body.

In regard to the pathological basis of the condition, nothing definite could be said, as there were no unequivocal autopsies. He believed that it was most satisfactory to assume a mal-development or a non-development of the nuclei from which these nerves arise.

Dr. Spiller referred to the relationship between the condition described by Dr. Thomas and progressive muscular dystrophy of the Landouzy-Dejerine type. In the latter affection the orbicularis palpebrarum and the muscles about the mouth are the ones usually involved, and it may exist for years without atrophy of any other muscles.

Dr. Sachs considered the muscular element was very much more at fault than the nuclear. These cases were not necessarily neural in origin, while some of them may be; others will show that the muscular or osseous systems are alone involved.

Dr. Thomas said that the question of the probable relationship between this condition and progressive muscular atrophy was not new. He regarded the symptoms in his case as congenital and expressed the opinion that it would be unusual to see a case of muscular dystrophy of the facial type which dated from birth and persisted until the twentieth year without affecting any other nerves.

Dr. Frank R. Fry, of St. Louis, read the notes of the following case:

MULTIPLE SYPHILITIC NEURITIS.

A man, thirty-two years of age, contracted syphilis in the fall of 1896. A year later he had a sudden right hemiplegia, the face escaping. The paralysis was slight, the patient walking with a hemiplegic gait and retaining considerable use of the hand. The knee-jerk and the wrist-jerk on the paretic side were exaggerated. Three weeks later a paraplegia developed which became complete and was followed by marked weakness of the hands, with hyperesthesia and paresthesia in all the extremities. The knee-jerks were lost, and later there was reaction of degeneration of the muscles of the legs. After eight weeks, improvement began and has been continuous. He has since been able to resume his business. The diagnosis was based on the characteristic sensory symptoms, reaction of degeneration, absent knee-jerks; the extensive distribution and peripheral character of the paralysis, and the manner in which the paralysis and sensory symptoms cleared up leaving no evidence of focal lesion of the central nervous system. It was assumed that the neuritis was due to syphilis because no other cause seemed apparent.

Dr. C. L. Dana, of New York, said that his experience with multiple neuritis and with syphilitic affections of the nervous system led him to regard it almost as a pathological law that we never have multiple neuritis from syphilis. In order to prove such a case, every other possible cause of the neuritis must be excluded.

Dr. Sachs thought that Dr. Dana had stated the other side of the case too strongly. He was of the opinion that the evidence of a multiple neuritis or peripheral neuritis of syphilitic origin had been fairly well established.

Dr. M. A. Starr, of New York, agreed with Dr. Dana and said that although he had been on the watch for a case of multiple neuritis of syphilitic origin during the past ten years, he had never seen one which he was willing to pronounce as distinctly syphilitic.

Dr. J. J. Putnam, of Boston, and Dr. Leonard Weber, of New York, held the same opinion as expressed by Drs. Dana and Starr.

HERPES ZOSTER.

Dr. Leonard Weber, of New York, read a paper upon this subject. He said that the underlying cause may be situated either in the nerve-centre, the ganglion, or the periphery; the latter more frequently than is generally supposed. The disease with its attendant and subsequent neuralgia is the more severe the older the patient. The remedy he had found more potent than any other in the cure of herpes neuralgia is the sulphate of quinine in doses of ten to fifteen grains three times a day, to be continued for a week and longer if necessary. He has also found iodide of potash useful, particularly where there is arterio-sclerosis. He also insisted upon strict cleanliness in dressing the herpetic eruption.

Dr. J. J. Putnam was inclined to believe that the lesion in these cases was far back — although perhaps not so far back as the ganglion.

Dr. Spiller said that these cases certainly seem to be connected with disease of the nerves, especially of the sensory branches. He did not know of any case where the motor fibres alone were involved.

Dr. W. M. Leszynsky said that in recent years he had come to regard herpes zoster as one of the symptoms of a peripheral neuritis. For the purpose of relieving the acute pain, especially in the intercostal variety, he had found the use of the Paquelin cautery remarkably efficacious.

Dr. Sinkler agreed with Dr. Weber's view of the location of the disease.

Dr. C. L. Dana believed that in most cases the trouble was in the nerve, probably in the sensory branch and deeply seated.

PURULENT INTERNAL PACHYMENINGITIS COMPLICATING MIDDLE-EAR DISEASE.

This was the report of a case by Dr. William M. Leszynsky, of New York.

The patient was a man twenty-three years of age who had been affected for many years with chronic suppurative otitis of both ears. He complained of pain in the right ear and tenderness over the mastoid region. There were also rigors, high temperature and sweating, indicating a probable infective sinus thrombosis. The mastoid and sinus were explored with negative result. The same symptoms continued unabated, and subsequently he developed increasing hebetude, double optic neuritis, motor aphasia, right facial paralysis and right hemiplegia. There was no disturbance of sensibility. The patient never complained of headache nor were there any other symptoms indicating an acute involvement of the *left* ear. The left temporo-sphenoidal lobe was thoroughly explored for an abscess formation, but none was found. Death occurred twenty-four hours later. The autopsy revealed purulent internal pachymeningitis limited to the dura over the *left* Rolandic region, and softening of the central convolutions on the same side. On the *left* side the tympanum was entirely destroyed by caries, and the sinuses completely disorganized, while on the right side the sinuses were normal. Dr. Leszynsky dwelt at length on the difficulties that so often arise in making a correct localization in cases such as that reported.

Dr. E. B. Angell, of Rochester, had had under his care a patient whose general symptoms were those of pyemic infection.

Dr. G. L. Walton, of Boston, said that Macewen had shown that temporo-sphenoidal abscess, extending inward, affected first the leg, then the arm and finally the face, extension upward following the inverse order. In the case under discussion the arm received the brunt of the injury which made the diagnosis more difficult.

SEROUS (ALCOHOLIC) MENINGITIS SIMULATING BRAIN TUMOR.

This was the report of a case by Dr. Theodore Diller, of Pittsburg.

The patient had been getting progressively worse for six months, presenting during this time severe headache; frequent vomiting attacks; failing vision due to optic neuritis; weak, ataxic gait; loss of knee-jerks; tenderness in the legs and burning in the feet; and finally, general convulsions followed by marked mental changes.

It seemed quite plain that the man was suffering from multiple neuritis due to alcoholism. The ataxic gait, weakness, wasting, and tenderness of legs and burning of feet with diminished knee-jerks were explained by this diagnosis. There remained, however, the headache, vomiting, optic neuritis, convulsions and mental symptoms to be accounted for. These seemed to indicate the presence of a brain tumor, although the fact was recognized that the mental symptoms were very much like those seen in alcoholic multiple neuritis.

The autopsy failed to reveal a brain tumor, but disclosed great dilatation of the pial vessels with a large amount of clear, colorless fluid beneath the pia. There was intense congestion of the pia in several spots. But little more than the usual amount of fluid was found in the ventricles.

Dr. W. L. Worcester, of Danvers, was in doubt whether the post-mortem findings accounted for all the symptoms.

Dr. Dercum said it was a well-known fact that serous meningitis was very apt to be mistaken for brain tumor.

SECOND DAY. — FRIDAY.

MYOTONIA.

This was the title of a paper read by Dr. George W. Jacoby, of New York.

He considered Thomsen's disease (myotonia congenita) a clinical type to which nothing can possibly be added; the term should, however, be limited to the actually congenital cases of myotonia and should exclude all others. For the latter, some other designation must be sought. Better to class all cases under the generic term myotonia and then to subdivide into myotonia congenita, myotonia acquisita, myotonia transitoria. Cases which present only spasm upon voluntary movement, but no myotonic disorder or reaction, should be classed as intention spasm. He related the histories of three cases, two of which had previously been presented to the New York Neurological Society. These cases illustrated the various types of myotonia. From one case in which the disease was acquired at the age of eighteen after an attack of typhoid fever, pieces of muscle were excised and subjected to microscopical examination. Transverse and longitudinal sections gave the microscopical picture of the changes hitherto considered pathognomonic of Thomsen's disease.

Jacoby concludes that the proof of the myopathic nature of this affection derived from examination of excised pieces of muscle is insufficient, and that the changes thus found are due to the abnormal contractility of the muscles in this disease and merely corroborate the clinical fact of this hypercontractility. Whether the hypercontractility is due to a disorder of the muscular or central nervous systems can therefore not yet be stated. The fact that one of the cases here reported occurred after an attack of typhoid fever leads Jacoby to inquire whether such an accidental cause in the form of any acute infection may not frequently be the actual productive agency of the disease, such infection acting upon nerve-cells which are inherently weak.

DR. G. M. HAMMOND, of New York, presented these children, all members of the same family as cases illustrating a myotonic disorder.

DR. THEODORE DILLER, of Pittsburg, said he had examined the first patient referred to by Dr. Jacoby, and there was, in addition to the other symptoms, a distinct spasm of the extrinsic ocular muscles and of the orbicularis palpebrarum.

DR. W. G. SPILLER had seen two cases in which an intention spasm was present.

DR. JACOBY concluded that under the classification of myotonia, only such cases should be included which present certain definite symptoms. In addition to the intention spasm there should be an absence of anything pointing to gross disease in the central nervous system.

AMAUROTIC IDIOCY.

DR. FREDERICK PETERSON, of New York, presented the report of a case with autopsy. The patient was a little over seven months old at the time of death, and was one of three amaurotic idiots in a family of five children. The child presented the usual symptoms of the disease, and died of broncho-pneumonia following measles. There were never any symptoms of organic brain lesion. At autopsy the brain was found to show grossly the usual features of defective development. The pathological changes in the case were limited to the nerve-cells of the cortex and medulla, which were found markedly deficient in number and in development in the occipital region about the calcarine fissures in the temporo-sphenoidal lobes, in the frontal lobes, in the motor areas, in the corpora quadrigemina and geniculate bodies, and in the third and fourth cranial nerve nuclei. The alterations of the chromatic substance of the cells must be referred largely to the general condition of the patient before death and not to the disease under discussion. The lesions in the chromatic substance in the atrophic cells could not be accurately determined. No definite changes in fibres or tracts were discovered.

THE PATHOLOGICAL ANATOMY OF AMAUROTIC FAMILY IDIOCY.

DR. WILLIAM HIRSCH, of New York, read a paper with this title, and reported the case of a child ten months old who had died after being under observation one year. The autopsy was made four hours after death. The microscopic examination revealed very marked changes in all the nerve-cells of the entire central nervous system. Serial sections had been made through the spinal cord, the medulla oblongata, corpora quadrigemina, optic thalmus, caudate nucleus, cerebellum, and through the entire cortex of the brain and not a single normal cell was found. All the nerve-cells were enormously enlarged, the cell-body was swollen, and sometimes three times its normal size. The Nissl granules were dissolved into a pulverized mass. The nucleus with its nucleolus was displaced to the periphery of the body. The processes were very few in number and often broken off. There was degeneration of the pyramidal tracts in the spinal cord and medulla oblongata and atrophy of the optic nerves. The neuroglia and the blood-vessels were perfectly normal throughout the entire nervous system. The clinical evidence as well as the anatomical findings prove that the assumption that the disease consists of an arrest of development is erroneous, but that we have to deal with an acquired disease. The typical change in the nerve-cells and the fact that all the nerve-cells and nothing but the nerve-cells of the entire nervous system are affected, makes it very probable that we have to deal with a toxic condition, with a direct action of some poison on the nerve-cells.

DR. WARD A. HOLDEN, of New York, then made a report on pathological findings in Dr. Hirsch's case.

The changes in the eyes are confined to the ganglion cells of the retina. In sections of a Muller's fluid eye the ganglion cells are enlarged and globular but have central nuclei; stained with Weigert's hematoxylin or with hematein they appear filled with black metaplasm granules. In sections of a formal eye cut in paraffin and stained by Nissl's method the ganglion cells appear to consist only of the cell reticulum (Nissl granules being absent) and a darkly stained granular nucleus. These staining reactions are identical with those given by the cortical cells of two brains of amaurotic idiocy, one hardened in Muller's fluid, one in formol, with which the eye preparations were compared.

In the normal eye the ganglion-cell layer about the fovea is but three to four cells deep, and farther away it thins down rapidly. The gray patch seen about the fovea in this disease is one and one-half to two disc-diameters in width, and fades out gradually at its periphery into the normal red of the fundus. It occupies that portion of the retina in which the ganglion-cell layer is four or more cells deep, the swollen ganglion cells rendering the retina opaque and obscuring the red color of the choroid except in the fovea where ganglion cells are wanting.

There is no actual edema as has been supposed, and the other layers of the retina are normal. In the optic nerve there is a breaking down of the myelin in many fibres of each bundle and an increase in neuroglia tissue — a secondary degeneration of the neuraxons of the affected ganglion cells of the retina and of the basal ganglia.

Dr. B. Sachs said he was firmly convinced that amaurotic family idiocy was a morbid entity which he hoped would be placed upon a firmer basis by the extensive pathological studies made by Dr. Hirsch, Holden and others.

Dr. Carl Koller, of New York, said he had seen five cases of this affection. In his opinion the characteristic ophthalmoscopic changes in the macula *are not congenital*, and are not found up to between the fifth and seventh months. In two of Kingdon's cases that were examined in the first month they were missing, and in two of his own cases examined in the first two months of life they were also absent. One of the latter is the identical case just reported by Dr. Peterson. Dr. Koller had examined the child five times between the eighth and sixteenth weeks of its life, the ophthalmoscopic result being negative, although other unmistakable signs made sure of its being a case belonging to this class. In the other case, the characteristic changes developed later. The atrophy of the optic nerve makes its appearance a considerable time after the changes in the macula and develops gradually. The behavior of the children with regard to their vision is not normal at a time when no ophthalmoscopic changes are visible, so that the conclusion is permissible that vision is impaired by cerebral degeneration.

Dr. Mills said that these cases, along with some of the forms of diplegia and of muscular atrophy, belong to a great embryonal class. The potentiality of development in these cases is limited, and it may be weeks or months or years before the symptoms make their appearance.

Dr. Dercum had one family under his observation, where, out of four children, three suffered from spasmodic diplegia and idiocy.

THE FORMATION AND EXCRETION OF THE METAPLASM GRANULES OF THE NEURON.

Dr. Ira Van Gieson, of New York, made some remarks on this subject, illustrated by drawings on the blackboard and numerous microscopic specimens. He first described the constituents of the ganglion cells, referring to the sap, by which the food coming to the nerve-cell is elaborated, and the reticulum, which transmits the impulses and also subserves the phenomena of retraction and extension of the neuron. When the food-supply of the ganglion cell is diminished — as it is in alcoholism, in over-fatigue, etc. — we get an indication of it in an excretion of particles which escape from the cell, pass out of the lymph-space and cluster about the blood-vessels. These metaplastic elements are the results of over-fatigue — of a diminished food-supply to the nerve-cells. These nerve changes were not altogether of toxic orgin. We must take into consideration the quantitative and qualitative food-supply of the cells. In amaurotic family idiocy, there was an indication of a diminished food-supply of the cells.

(*To be continued.*)

Recent Literature.

A Clinical Manual of Skin Diseases, with Special Reference to Diagnosis and Treatment, for the Use of Students and General Practitioners. By W. A. Hardaway, M.D. Second edition, revised and enlarged, with forty-two engravings and two plates. Philadelphia and New York: Lea Brothers & Co. 1898.

The second edition of this excellent manual has appeared, much enlarged and thoroughly revised. The arrangement of the book has been changed and an orderly system of classification, based somewhat upon that of Hebra, has been substituted for the alphabetical one. It is a matter for congratulation that the unscientific appendix of formulæ that mars so many text-books has been omitted in this edition. Too much praise cannot be given to the author for the great care that has been taken in the revision of this book, which must have demanded a far greater amount of time than is usually devoted to such work. The work is thoroughly up to date and complete, and the paragraphs on affections that have only recently attracted attention are models of judicious *résumé*. The treatment is decisive and condensed, and will prove of much value for reference. Altogether we consider the book the best manual of its size in the English language and can recommend it heartily to the student and general practitioner.

Atlas of Syphilis and the Venereal Diseases, including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. Franz Mracek, of Vienna, authorized translation from the German, edited by L. Bolton Bangs, M.D. With seventy-one colored plates. Philadelphia: W. B. Saunders. 1898.

The design of this book is to reach a wider circle of readers than those who buy the dermatological atlases hitherto published. For that reason the author has omitted all forms of disease of rare occurrence, and has pictured only the common types that are daily seen. The book has certainly accomplished its object, as the seventy-one colored plates are very good representations of the more common forms of syphilis and venereal affections, and would seem to us much more suited to the general practitioner's needs than the large and expensive atlases. It has been published by Saunders as one of his medical hand-atlases, which are authorized translations of the Lehmann Medicinische Handatlanten, and is of convenient size and shape. Many of the illustrations are really excellent and we can heartily recommend the work. The last part of the book is taken up with a short and practical treatise on the subject matter of the illustrations.

The Diseases of the Stomach. By William W. Van Valzah, A.M., M.D., Professor of General Medicine and Diseases of the Digestive System in the New York Polyclinic Medical School and Hospital, and J. Douglas Nisbet, A.B., M.D., Adjunct Professor of General Medicine and Diseases of the Digestive System in the New York Polyclinic and Hospital. Philadelphia: W. B. Saunders, 925 Walnut St. 1898.

The great merit of this book lies in its thoroughly practical character. The treatment of the various subjects is concise and definite to an extent which is rare in the existing text-books upon this branch of medicine. Throughout the work the subjects included are considered emphatically from a point of view of their usefulness and their use in diagnosis and treatment. And in thus confining itself to the statement of that knowledge the bearing of which upon practical work can be indicated, the work gains in usefulness for the general practitioner over many of the more extended works upon the subject.

The classification of the diseases of the stomach adopted by the authors seems to us as on the whole an advance over those of the older books. The plan which is followed of classifying each dynamic affection in accordance with the secretory or sensory or motor condition which is its most fundamental symptom is, we think, the correct one, although there is perhaps a tendency at the present time towards too minute subdivision. But in so far as these affections are amenable to separate treatments in accordance with the character of their fundamental symptom, so far is the classification as separate affections justifiable.

In discarding the plan of grouping most or all of the affections of the stomach not associated with anatomical changes in the general class of neuroses, the authors have certainly made an advance. Whether the initial lesion of these affections lies in the nervous system or not, they possess most of them certain definite physical or chemical symptoms or conditions, and can be investigated along these lines with much benefit to the matter of their diagnosis and treatment. The classifying of these disorders as neuroses, as is the custom in most text-books, has had the effect much too often of relegating them to a class beyond the field of investigation.

The chapters upon the methods of examination and diagnosis of the diseased conditions of the stomach are good. The section which deals with the significance of the results of chemical investigation of the gastric functions is very explicit and thorough. There is perhaps an excessive tendency to dogmatize upon the importance of certain results as pathognomonic. in the treatment of this branch of the subject. In the attempt to supply an acknowledged deficiency in the work of chemical analysis of the gastric contents, namely, a simple method of determining the presence of combined hydrochloric acid in cases where no free HCl exists, the authors have cited two methods which are distinctly unreliable (see page 105). Neither test if positive shows the presence of combined HCl, but simply the presence of combined acid.

The statements upon the motion of the stomach are not in accordance with the latest accepted results upon this subject. In view of the importance of this subject this omission is a serious weakness in the book.

The text upon the special diseases is in each case explicit. The subject is handled in a thoroughly practical manner. The suggestions in regard to diagnosis and treatment commend themselves to the critical reader.

A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By Richard C. Cabot, M.D. With colored plates and engravings. Third Revised Edition. New York: William Wood & Co. 1898.

All that was said in praise of this admirable work in a previous review [1] can only be repeated and emphasized in considering this new edition. Numerous changes have been made in the text, all of them, we think, for the better and much new material has been added. Many minor changes have been made in the methods of blood examination, most of which simplify the process. The author now advises hardening the blood by heating to 140°-150° C. and then slowly cooling, instead of at 110°-115° as before. The formula given for the preparation of the Ehrlich tricolor mixture is also different. Descriptions and directions as to the use of Oliver's tintometer and hemoglobinometer have been added as well as a description of Müller's "blood dust."

Under the morphology of the blood, the descriptions of the small and large mononuclear cells have been considerably modified and much improved. The idea that the various varieties of leucocytes pass into each other has been discarded and the terms "young and old forms" dropped. This change is decidedly for the better and more in accordance with our present knowledge or lack of knowledge.

In the chapters on the pathology of the blood the author draws attention to the oval shape of the corpuscles in severe anemias and speaks of the qualitative changes in the individual cells in leucocytosis.

The chapters on the primary anemias contain considerable new material and have been decidedly improved. The division of leukemia into myelocythemia and lymphemia is founded on a rational basis and is a great advance over the old classification. We hope to see it adopted clinically. Considerable new matter regarding lymphemia has also been introduced.

About 1,700 new blood examinations, mostly of the white corpuscles, have been added. Of special interest, in the light of the recent epidemic, are those in cerebro-spinal meningitis. Bremer's and Williamson's tests for diabetic blood and the iodine reaction during acute suppurative processes are described. A comprehensive article on the clump reaction and the serodiagnosis of typhoid closes the book. The author considers the limits of error of the serum test for typhoid very small if the proper conditions are fulfilled, that is, actively motile, virulent organisms, one-tenth dilution, and one-half hour time limit.

No one who wishes to study the blood or to know what has been learned by the study of the blood can afford to be without this book. It is indispensable both to the student and to the practitioner.

A Compend of Diseases of the Skin. By Jay F. Schamberg, M.D. Philadelphia: P. Blakiston's Son & Co. 1898.

This is one of Blakiston's series of Quiz Compends designed "for the use of practitioners and students, as a rapid reference work and key to the study of dermatology." It is very similar to the many other short abstracts of dermatology that have been published lately, and the work seems to have been carefully done.

Professor Foster Honored. — Prof. Michael Foster has been chosen president for next year of the British Association for the Advancement of Science. Professor Foster has been for seventeen years secretary of the Royal Society, and for about the same space of time Professor of Physiology at Cambridge University.

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[1] Boston Medical and Surgical Journal, 1897, cxxxvi, 577.

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ON HEAD INJURIES AND THEIR TREATMENT.

The vicissitudes of the trephine constitute one of the most interesting chapters in surgical history. From the days of Bérenger de Carpi and his contemporary, Ambroise Paré, down to our own — a period of over three centuries — the cranium and its contents have offered a most attractive field to the surgeon. The secret of this attractiveness lies in the startling eccentricity of course pursued by pathological processes within the cranium, especially of those of traumatic origin. Even the earliest observers of experience were cognizant of the tendency in cases of the latter sort, of least apparent moment, to terminate fatally, while the most severe often recovered spontaneously under unfavorable circumstances. The discovery of this treachery on the part of diseased nervous tissue has been an incessant source of irritation to the surgeon, keeping him constantly on the *qui vive* in the effort to outwit nature by strategic operations. How one-sided the struggle has thus far been is painfully obvious to one who has the opportunity for examination of its *unpublished* records.

It is interesting, in the light of present pathological knowledge, to look back upon the fierce contentions which went on among the surgeons as to the danger of converting (by operation) a simple into a compound fracture, when we consider that the cranial opening stands in about the same relation to the real problem as does the skin incision in an abdominal operation. It is curious to note, moreover, that there are still surgeons who have not grasped the distinction between depression and compression, and hence have not eradicated from their minds the false idea that the immediate elevation of a depressed fragment of bone is a matter of absolutely vital importance.

Although we cannot but admire the improvement which has taken place in the technique of cranial surgery, yet we cannot help feeling that the very facility of the operation of trephination often leads the surgeon into ill-considered action, and betrays the consulting neurologist into counselling operative interference from which his calmer judgment would dissuade. The difficulty of exact diagnosis, even with our present knowledge, is still great, and the neurologist must often admit in the presence of a given case of craniocerebral traumatism that he is confronted by a combination of circumstances so unique that he occupies very much the same position as does the weather prognosticator in the times when "all signs fail." There is no case like a head case to dispel fondly cherished delusions as to the significance of symptoms; no case like a head case to engender regrets. There is no opportunity to study leisurely the steady invasion of a pathological process, such as a cerebral neoplasm; there is need, and urgent need, for the keenest diagnostic skill, for the most comprehensive judgment, and often for self-restraint. Historical data are most commonly totally insufficient and untrustworthy, and the neurologist is immediately plunged *in medias res.* Under the stress of circumstances, it is easy for the cerebral aspects of the case to dominate the clinical picture and for a fractured liver, spleen or kidney to fall short of consciousness. On the strength of a dilated pupil, a mono or hemiplegia, the skull is opened and the lesion sought, and if not found at the site of operation, the latter is enlarged, or a counter-opening made on the opposite side of the head — in an unfortunate majority of cases all to no purpose.

The present occasion seems a fitting one to raise the question as to the propriety of such a course of action. We should ask ourselves exactly what we expect to accomplish in a field of operation as limited, and under physical conditions as difficult as these presented in trauma to the soft and yielding cerebral substance. If it were always a question of the relief of compression from uncomplicated extra-dural hemorrhage, the propriety of such operation would be unquestioned, but unfortunately the facts of statistical evidence are overwhelmingly conclusive as to the very regrettable rarity of such a desirable condition of affairs. Autopsy after autopsy continues to reveal the undeniable truth that the great majority of traumatic head cases present multiple lesions, a most natural revelation in view of the necessarily diffuse transmission of a traumatizing force. In this connection we need but refer to the frequent association of small hemorrhages in or about the motor areas with abundant hemorrhage, and areas of laceration or contusion in the so-called silent regions of the brain. How easy it is for the former to evoke the predominant clinical phenomena in a given case needs only to be mentioned to be appreciated. Moreover, if the latter had no significance, the problem would be reduced to its lowest terms, but, alas, physiological experiment has demonstrated only too conclusively how little hemorrhage is necessary in the cerebellar chamber, (for instance) to produce a quickly fatal result, owing to the pressure discontinuity between this and the other chambers of the brain.

In the face of all this it seems to us that the limitations of the utility of trephination in cranio-cerebral traumatisms are clearly defined. First of all, experience teaches that the fundamental rule governing such cases is not to operate at all until some reaction from the shock of the trauma has taken place. The second rule should be to operate only upon depressed fractures and upon cases which present a reasonable probability of middle meningeal or intra-cranial hemorrhage, so situated that by the evacuation of the clot dangerous pressure can be removed from the brain. It is in these cases that cerebral surgery furnishes brilliant and life-saving results.

The removal of shattered fragments in compound fractures, and the free drainage of lacerated areas, and the cleansing and drainage of septic conditions of traumatic origin, also afford very evident indications for opening the cranium.

Although to the enthusiastic advocate of trephining the above limitations may seem too narrow, he may be legitimately asked to report any cases which he can safely say were saved by his operation where the conditions were other than those enumerated.

We have already referred to the danger of laying too much stress upon a mono or hemiplegia in head cases as localizing guides, and we would here urge that too much significance should not be attached to the condition of the pupils, for their variability under identical circumstances is extreme.

The "interval of consciousness" and, where present, the slow pulse of cerebral pressure afford the best signs for our guidance in deciding upon an operation after cerebral traumatism.

In doubtful cases suggesting hemorrhage, where owing to alcoholism or the immediate onset of the bleeding, the immediate unconsciousness following the traumatism passes over into the deeper coma, with slow pulse and paralysis from cerebral pressure, and the symptoms grow progressively worse, trephining is again urgently indicated.

Viewing the whole subject broadly, we should conclude, in the light of statistical evidence, that the results thus far obtained from trephination, even with the most improved technique, are, except in cases which embody the conditions set forth in our limitations, distinctly discouraging; and we venture to predict that if the surgeon would only more fully acquaint himself with the exact nature of the pathology of cerebral traumatisms and with the laws of brain physiology, the indications afforded by a dilated pupil or a hemiplegia would not seem so urgent, and the facility of trephination would not so often lead to its abuse.

MEDICAL NOTES.

Yellow Fever in the South. — During the past week yellow fever has continued to spread throughout Louisiana and Mississippi, the unreasoning panic which has taken possession of the officials from the governor down in the latter State, and led them, as well as everybody else, to seek safety in flight, having resulted in state of affairs which has prevented any co operation of the State authorities with the Marine-Hospital Service in intelligent efforts to control the outbreak. The negroes in the stricken towns are herded together in quarantine, without sufficient food, and suffer from starvation as well as fever. The mild character of the epidemic is shown by the great disproportion between the number of cases and deaths reported. In Franklin, La., for instance, up to October 6th, there had been 375 cases and 7 deaths; and in New Orleans, to October 8th, 62 cases and no deaths; in Wilson, La., up to October 8th, there had been 247 cases and 4 deaths. The highest mortality has been at Oxford, Miss., where, up to October 8th, there had been 470 cases and 34 deaths; and Taylor, where, to October 6th, there had been 100 cases and 11 deaths. Frosts were reported in Louisiana and Mississippi October 17th.

The Patenting of Antitoxin. — In a recent number of the *Deutsche Medicinische Wochenschrift*, Professor Behring has replied to those who criticise his action in patenting diphtheria antitoxin in the United States, first, that he is no longer a practitioner of medicine; second, that he had to adopt business methods in order to secure money with which to continue his investigations; and third, that his manufacturers will supply antitoxin in America at the same prices at which the American firms have supplied it hitherto. The question as to whether physicians should patent their discoveries having been emphatically decided in the negative, Professor Behring defends himself on the ground that he is no longer a physician, but a scientific investigator. Whether scientific investigators should patent discoveries which are of great value to mankind in the saving of life is a question of great difficulty, and one as yet unsettled. At all events, it is evident that other investigators have made such important contributions to the discovery of the antitoxin treatment of diphtheria and the method of producing antitoxin, that Behring should claim neither the sole credit nor the whole profit therefor. From any point of view his defence is a lame one.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 19, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 33, scarlet fever 20, measles 13, typhoid fever 27.

Death of Dr. George Danforth Colony. — George Danforth Colony, M.D., of Fitchburg, Mass., died in that city on October 2d, aged seventy-seven years. He was born in Keene, N. H., was graduated from Dartmouth College in 1843, and took his medical degree at the University of Pennsylvania in 1846. He began practice in Athol, Mass., where he remained until 1861, when he removed to Fitchburg, where he attained a leading position among the practitioners of that city and the surrounding district. He was a man of large experience and a thorough student of medical literature, and his advice as a consultant was often sought by his fellow practitioners. He was active in municipal affairs and had served on the school committee and as a member of the Common Council of Fitchburg. He was for many years a trustee of the public library and was consulting physician and trustee of the Burbank Hospital.

Death at the Age of One Hundred and One. — James Goldsbury, aged one hundred and one years, seven months and eight days, died at his home in Warwick, Mass., recently. He was said to be the oldest man in Franklin County.

Bequests to Hospitals. — By the will of Caroline Tucker Downs, late of Canton, recently presented for probate in Norfolk County, $20,000 each were bequeathed to the New England Hospital for Women and Children and to the Children's Hospital of Boston. Numerous other bequests were made to public institutions, and a *pro rata* division of the remainder of the estate, after paying these bequests among the various beneficiaries, was provided for.

The Vermont State Medical Society. — The Vermont State Medical Society held its eighty-fifth annual meeting in Brattleboro, on October 13th and 14th. A large number of papers of more than ordinary interest and scientific value were read during the session, which was one of the most successful in the history of the Society. Dr. Lyman Rogers, of Bennington, was President of the Society, and Dr. D. C. Hawley, of Burlington, Secretary.

The Tetanus Antitoxin Furnished by the Massachusetts State Board of Health. — We are informed by Dr. Theobald Smith that, estimated, the strength of the last lot of antitoxic serum prepared by the State Board of Health is about one Behring unit per cubic centimetre, granting that the use of guinea-pigs does not essentially modify the "white mouse standard." It will, therefore, be necessary, in order to administer the dose advised by Behring (500 units), to give 500 cubic centimetres of the serum.

The Massachusetts Board of Registration in Pharmacy. — The Massachusetts Board of Registration in Pharmacy has issued its thirtieth annual report, which shows that 39 examinations have been given during the year. Upon the enforcement of the pharmacy law 24 hearings have been held; upon the granting of liquor licenses there have been 117 hearings. The board has taken care to avoid injustice to any applicant for registration in pharmacy or for a liquor certificate. The welfare of the public has been studied in the refusal to grant such certificates whenever, in the judgment of the board, the public good would thereby be promoted. Only 94 of the 518 applicants examined were registered. Only two violations of the poison law have been found during the year.

NEW YORK.

The Mortality during September. — During the five weeks ending October 1st the mortality reported in the city represented an annual death-rate of 22.35. Owing to the extreme and very fatal heat of the latter part of August and first part of September, the death-rate in September was but little lower than in August, the rate for the five weeks ending August 27th being 22.46. During the five weeks ending October 1st there were 369 deaths from sunstroke, against 65 deaths in the preceding five weeks. In the single week ending September 10th there were no less than 323 deaths from sunstroke, by far the largest mortality from this cause during the year. While the heat in September was so fatal to adults (most of these deaths being among persons of this class), it was much less disastrous in its effect upon young children than the hot weather earlier in the season, as is shown by the following figures reported by the registrar of records of vital statistics. In the five weeks ending October 1st the total number of deaths from this class of disease was 1,076, an average of 215.2 per week, while the number of deaths in children under two years of age was 963, an average of 192.6 per week. In the five weeks ending August 27th the total deaths from diarrheal diseases were 1,628, a weekly average of 325.6, and the deaths among children under two years of age, 1,481, a weekly average of 296.2.

The Returning Soldiers and the Typhoid Mortality. — During the five weeks ending October 1st the deaths from typhoid fever averaged 35.2 per week, against 19 per week in the five weeks ending August 27th, and 7.6 in the five weeks ending June 25th. This increase, as has been previously pointed out, is almost entirely due to the prevalence of typhoid among returning soldiers. Of late, however, there has been a considerable decrease in the deaths from this cause. In the weeks ending September 10th and 17th there were 49 and 44 deaths from typhoid, respectively, while in the weeks ending September 24th and October 1st there were 29 and 30 deaths, respectively. With the advent of autumnal weather we find some increase in the mortality from thoracic diseases. In the five weeks ending October 1st there was a weekly average of 147.6 deaths from pulmonary tuberculosis, against 142 deaths per week in the preceding five weeks. From pneumonia the weekly average of deaths was 95.2, against 80.2 in the preceding five weeks, and from bronchitis, 25.8, against 14.4 in the preceding five weeks.

Mortality of the Different Boroughs. — In comparing the mortality of the different boroughs of the city, leaving out of account the Borough of the Bronx, in which the many large institutions raise the death-rate, we still find the lowest percentage of deaths in the Boroughs of Manhattan and Brooklyn, and the highest in Queens, on Long Island, and Richmond, on Staten Island. During the five weeks ending October 1st the mortality represented an annual death-rate of

21.94 in Manhattan, 21.56 in Brooklyn, 25.18 in Queens, and 26.04 in Richmond. The difference is not so marked, however, as in the preceding five weeks, when the figures were as follows: Manhattan, 21.10; Brooklyn, 21.90; Queens, 29.59; Richmond, 31.85. In the Borough of Richmond we notice the most remarkable variations in the mortality. Thus, in the hot week ending September 10th, notwithstanding its extensive area of salt-water exposure, the death-rate rose to 40.99, which is by far the highest in any of the five boroughs since the beginning of the year; while in the next week but one after that (ending September 24th), the death-rate was only 15.27, the lowest met with in any of the boroughs since before the warm weather set in.

Deaths of Two Centenarians. — Mrs. Phœbe Crilley died in New York on October 3d, at the age of one hundred and two years. She was born in New Jersey and her whole life was passed in New Jersey and New York. She kept house for her son until past ninety-six, when she met with an accident. William Carroll died in Brooklyn on October 5th, at the age of one hundred and three years. He was born in Kings County, Ireland, in 1795, and did not come to America until eighteen years ago. Until shortly before his death he had never known a day's illness and he worked in a rosin factory up to ten months ago, when his family insisted on his giving up work.

An Unknown Giantess. — Bridget McDonald, a giantess unknown to fame until after her death, was found dead in her basement room in West 26th Street on October 9th. She was nearly seven feet in height, and probably the tallest woman in New York. She was seventy years old, and for the last ten years had lived alone in one room.

Death of a Veterinary Surgeon from an Unusual Cause. — Dr. William Machan, a well-known veterinary surgeon of New York, died on October 10th from the effects of a singular accident, met with a few days before. While he was in the act of administering a hypodermic injection of chloride of barium to a large draught-horse the animal suddenly dropped dead, his body crushing the veterinary against the stone wall of the stable.

Miscellany.

THE OPENING OF THE MEDICAL SCHOOLS.

The opening of the Medical Schools in October suggests to the editor of the *Practitioner* the following pertinent reflections. As they present a view of the situation which is too frequently neglected, in spite of its evident truth, we find them well worth quoting:

> When at the opening of the winter session in a thriving school one sees the benches crowded with high-spirited boys with the world before them, one feels tempted to say with Abernethy, "God help you, gentlemen: what is to become of you all?" In the introductory addresses the young conscripts of medicine are told that they have only to do their duty with their might, and all will be well with them; at worst they can always earn a living wage; and then there is the chance of a marshal's bâton being in the knapsack! It would be more honest, as assuredly it would be kinder to the lads, to tell them exactly what they have to expect. For even moderate success in medicine there is needed a combination of qualities which are not very often found united in one individual. A man must know not merely the science, but the art of medicine; he must be as expert in the diagnosis of the character as in that of disease, and he must be as observant of moods, influences and surroundings as he is of symptoms and indications; he must be able to adjust his behavior as accurately as his remedies; in a word, he must know how to deal not only with the "case" but with the patient. These things are not to be learnt from books or from lectures; like reading and writing, according to Dogberry, they "come by nature," but they do not by any means come to all.
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> The following words which I quote from a book published in 1845 by Lucas-Championnière (the father of the eminent Paris surgeon, M. Just Lucas-Championnière) expresses the truth of the matter in regard to the prospects offered to ingenuous youth by the medical profession:
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> "The young men who are about to impose upon themselves [and the writer might have added, on their parents] enormous sacrifices in order to devote themselves to that arduous profession ought to know that only some of them will find, in a fortunate competence, the just reward of a laborious life; the others will be condemned, during their hard existence, to a condition not far removed from sordid poverty; and some will fall, sooner or later, into the direst distress."
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> It is not a cheerful picture but it is a true one; and it is made the sadder by the fact that it is not only the idle or the vicious who "go under." Many men, not wanting in ability or in character, fail in medicine through want of means to make a good start, through some defect in temper or manner, through lack of some indefinable personal quality, or through sheer ill-luck. And yet men crowd into the profession more and more every year, and hungry generations tread down the weak, and the struggle for life grows ever fiercer for the strong. I think the best text for an introductory address would be "Few are Chosen," and the orator should strive to impress upon the many who think themselves called that they would be wise to turn their hands to some work less likely to lead to disappointment while their minds are plastic and their hearts unbroken by failure.

PHYSICAL DEGENERATION IN INDIA.

In a recent number of the *Indian Lancet*, Dr. Dhingoa, after a careful analysis of the conditions now prevailing in India concludes that there is a distinct physical degeneration going on among the inhabitants.

The causes he considers to be, in general, as follows: first, those which have always been recognized as deleterious: climate, disregard of hygienic methods of living, early marriages, and the secluded, shut-up life of the women. These elements have, however, been active for many years, yet the degeneration has been of a much more recent date; hence Dr. Dhingoa believes that the essence of the matter lies in the changed life of modern times, which entails an excess of mental application and a disregard for physical exercise. This, and the introduction of alcohol, he thinks are potent factors in the present situation. The system of education is bad, inasmuch as its net result is a cramping both of mind and body. "There is hardly any energy left, when a young man enters into his worldly career. With a disorganized mind he taxes his feeble energy to the utmost, till, at last, he breaks down in one way or another." But perhaps more important than anything else is the social condition of women, the whole tendency of which is demoralizing, not only to the women themselves, but also to their children. "The cause of the physical degeneration is a want of harmony between the individual and his environment. For while the new order of things — the existing struggle for existence — demands from him more and more mental labor, and for the matter of that physical work also — the environment of climate, of home and of family, remains unchanged; and thus the individual is not prepared to face the new order of things safely."

Methods of ameliorating the present state of things, the writer summarizes as follows:

(1) Children should not be sent to school under seven years of age. This is really good for them in the long run; partly because there would be a better preparation for a healthy physique, which is of so great a service in the after-life, and partly because the mental evolution will proceed in a healthy and more satisfactory manner.

(2) In childhood and youth, the mental work should not be much, and great attention should be paid to food and physical exercise in the open air.

(3) Some educational reforms should be introduced, with the object of reducing the cramming system to a minimum, and encouraging the organization of knowledge and the love for study.

(4) Early and improvident marriages should be prevented. And, need I say anything in favor of female education? Its necessity is known to everybody.

(5) And, lastly, smoking and drinking — which are decidedly injurious to the growing children — should be prevented, so far as it lies in the power of teachers and fathers.

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THE REPORT OF THE SURGEON-GENERAL OF THE NAVY.

The Report of Surgeon-General Van Reypen, which has recently appeared, begins with a tribute to his predecessor, Surgeon-General Tryon, whose work in organizing and equipping naval hospitals enabled the naval medical service to care efficiently for the sick or wounded during the war.

When the *Maine* was blown up, immediate preparations were made for active service, the equipment of the hospitals was made complete in every respect, and a large amount of medical and surgical supplies provided for. As soon as war became inevitable, all the vessels in active service were provided with a full outfit of medical supplies, and in anticipation of the expected increase in the navy, outfits for the new ships were prepared and boxed, ready for use.

No vessel during the war had to wait for her medical stores.

In anticipation of the necessity for increasing the medical force, medical examining boards were sent out to the principal cities to examine applicants for appointment, with the result that at the outbreak of the war the medical department had a long list of well-qualified men from which to make selections of volunteer surgeons. Thirty-seven out of two thousand applicants were chosen. Of the work of these men the surgeon-general says:

"They have rendered efficient service, and have been a credit to the navy. Some have had unusual and trying experiences, but they have accommodated themselves to their environments, and have justified their appointment.

"Only one medical officer was killed during the war, Assistant-Surgeon John Blair Gibbs, who fell at Guantanamo, serving with the marine battalion.

"The medical department has long had under consideration the fitting out of a hospital ship, and the present war has demonstrated the usefulness of such a vessel. The steamer *Creole* was purchased, and was converted into an ambulance ship within sixteen days, fitted with every necessary surgical appliance, disinfecting apparatus, cold storage, laundry and elevator. She was the first completely equipped hospital ship ever fitted out, and performed invaluable service in the care of the sick and wounded, and the transportation of medical supplies."

The surgeon-general expresses the thanks of the department to the patriotic individuals and societies who have furnished medical supplies and comforts in addition to those furnished by the government, and particularly mentions the work done, in their report, by patriotic women. In conclusion, he says:

"I cannot close this portion of the bureau's report without bearing testimony to the efficiency, skill and devotion to duty of the personnel of the medical department. Not a word but of praise has the bureau heard of any of them — regulars or volunteers. When war was imminent, they vied with one another in their efforts to get on fighting ships. Some had greater opportunities than others, but all have done well the work assigned to them. Surgeon Edgar saw his Assistant-Surgeon, Gibbs, shot at his side in the Spanish attack, and he continued his work alone, doing it thoroughly and well, as it was known he would.

"The medical officers of the vessels in the fight at Manila and in the battle of the 3d of July shared the dangers of their comrades, and should participate in the praise accorded them.

"The medical officers of the *Solace* have the honor of inaugurating the first complete system of antiseptic surgery at sea. They have adapted means to ends, have improvised apparatus, have been fertile in expedients, and have the satisfaction of having demonstrated that, with skill and intelligence, the percentage of mortality among the patients on a well-equipped ambulance ship will be no greater than in the hospitals on shore.

"Medical-Inspector Persons found himself suddenly confronted with 226 Spanish sick or wounded prisoners in a hastily established hospital. He was equal to the emergency, and his assistants were complimented by Admiral Cervera when he visited the camp.

"The medical officers of the other hospitals have had suddenly large accessions of patients. They were always ready, and always cared for them well."

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BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1898, are as follows:

The number of new patients treated at the Central Office is 26,291, classified as follows:

Medical Department. — Men, 3,221; women, 4,612; children, 3,835; total, 11,678.

Surgical Department. — Men, 554; women, 539; children, 539; total, 1,632.

Department for Diseases of the Nervous System. — Men, 528; women, 907; children, 130; total, 1,565.

Department for Diseases of the Throat and Nose. — Men, 763; women, 758; children, 588; total, 2,109.

Department for Diseases of Women. — Total, women, 1,118.

Department for Diseases of the Eye. — Men, 369; women, 579; children, 312; total, 1,260.

Department for Diseases of the Ear. — Men, 222; women, 250; children, 288; total, 700.

Department for Diseases of the Genito-Urinary System. — Men, 2,237; women, 24; children, 4; total, 2,265.

Department for Diseases of the Rectum and Anus. — Men, 124; women, 53; children, 3; total, 180.

Orthopedic Department. — Men, 92; women, 135; children, 74; total, 301.

Department of Mental Diseases. — Men, 35; women, 39; children, 21; total, 95.

Dental Department. — Men, 157; women, 151; children, 257; total, 565.

The number of visits made by patients, old and new, at the Central Office is 66,923, classified as follows:

Medical, 28,714; surgical, 38,209; total, 66,923.

The number of patients treated in the Districts is 13,726, including 269 cases of midwifery, classified as follows:

Men, 2,583; women, 5,173; children, 5,970; total, 13,726.

The results of treatment in the Districts are as follows:

Discharged, cured or relieved	13,308
Removed to hospitals	1,158
Died	236
Remaining under treatment	114
	13,816
Under treatment at last annual report	90
	13,726
The number of visits made by the District physicians	20,123
The number of patients treated at the Central Office and in the Districts	40,017
The number of cases of midwifery attended during the year	269
The number of cases of midwifery attended since July, 1856	9,766
Whole number of patients since October, 1796	1,418,862
Whole number of patients since July, 1856	1,299,699
Average daily attendance at the Central Office	220
Largest number present any one day, September 10th	399
Smallest number present any one day, February 1st	44
Number of recipes put up at the Central Office during the year	73,809
Number of house recipes	63,309
Number of District recipes	10,500
Largest number of recipes put up in one day, March 14th	430
Smallest number of recipes put up in one day, February 1st	44

The list of medical officers for the ensuing year is as follows:

Surgeons. — Drs. E. O. Otis, F. M. Briggs, E. A. Pease, W. F. Gay.

Assistant-Surgeons. — Drs. A. A. Wheeler, J. S. Stone, W. P. Coues, G. A. Harlow.

Physicians. — Drs. R. Disbrow, T. M. Rotch, H. Williams, E. M. Buckingham, W. F. Temple, H. Jackson, R. W. Greenleaf, S. Breck, G. A. Sargent, E. L. Twombly, W. E. Fay, W. H. Prescott, A. S. Knight, F. R. Tower, J. W. Bartol, E. C. Stowell, J. N. Coolidge, F. A. Higgins.

Department for Diseases of the Skin. — Drs. A. Post, J. S. Howe.

Department for Diseases of the Nervous System. — Drs. F. Coggeshall, W. R. Woodbury. Assistant, Dr. C. A. Ewald.

Department for Diseases of the Throat and Nose. — Drs. J. W. Farlow, F. C. Cobb, W. S. Boardman, W. E. Chenery. Assistant, Dr. B. Tenney.

Department for Diseases of Women. — Drs. J. B. Swift, G. Haven, M. Storer, C. H. Hare.

Department for Diseases of the Eye. — Drs. F. E. Draper, W. E. Baxter.

Department for Diseases of the Ear. — Drs. W. Preble, E. M. Holmes. Assistant, Dr. C. S. Wright.

Department for Diseases of the Genito-Urinary System. — Drs. G. W. Allen, C. M. Whitney, H. A. Lothrop, C. M. Smith. Assistant, Dr. W. Cogswell.

Department for Diseases of the Rectum and Anus. — Dr. W. J. Otis. Assistants, Drs. J. C. Stedman, J. S. Phelps.

Obstetric Department. — Dr. C. M. Green. Assistants, Drs. E. Reynolds, C. W. Townsend.

Orthopedic Department. — Drs. C. G. Page, C. F. Painter.

Department of Mental Diseases. — Dr. W. Channing. Assistant, Dr. A. C. Jelly.

Pathologist. — Dr. E. M. Greene.

Dentist. — A. H. Fisher, D.M.D.

District Physicians. — Drs. W. H. Grant, F. Drew, F. W. White, A. L. Chute, C. N. Barney, F. J. Cotton, E. P. Joslin, F. W. Pearl, F. S. Newell, D. F. Jones, R. F. Chase, R. E. Edes.

Physician to the Central Office, Roxbury. — Dr. H. F. Hewes.

Apothecary. — G. Lachambre. Assistant, E. C. Dodge.

Dr. W. H. H. Hastings, *Superintendent.*

Correspondence.

UNRELIABLE INFORMATION.

The Colonial, Mount Clemens, Mich.
October 3, 1898.

Mr. Editor: — There has been a question coming up from time to time, as to the reliability of the information published by R. L. Polk & Co., in their Medical and Surgical Register of the United States. This question has been discussed *pro* and *con*, some claiming that it was reliable and others that it was not. It has come to the notice of physicians generally, that the names of men were inserted as practising physicians, whose evidences of having graduated were rather shady; but not until the present year have I known of any instance where they have sought to compel physicians to buy their publication, by giving them a bad standing before the public if they did not. That seems to have been done in my case in the present edition, without any other motive, so far as I am aware, than that as Treasurer of the Mount Clemens Sanitarium Co., they solicited an advertisement for two publications which they are getting out (namely, the Medical and Surgical Record and the State Gazetteer which I did not think, from a business standpoint, would be a paying investment). In the two former editions, 1893 and 1896, the name and standing of the college at which I graduated were correctly given; but, in the present edition, the statement concerning me is as follows: "Alfred N. Shotwell, R." followed by a mark which indicates "Claims to have graduated, but the records do not show that a diploma was ever granted to any one bearing that name." The fact of my graduation has never been questioned before, and I refer you, as to the untruth of their statement, to any member of the faculty of the Detroit College of Medicine, where I graduated February 29, 1884, or to any member of the following societies: The Michigan Medical, The Northwestern, The American Medical and The Pan-American. It would seem that it is about time for physicians to take a stand in this matter, as farther down in the registration of this town (if you will follow it), appear the names of two masseurs, among the names of physicians. I know nothing whatever about the standing of these men, and it is foreign to the question, further than that they do not claim to be graduates of medicine, nor do they practise medicine in any way, shape or form. Is this a register and directory of physicians or is it a directory published simply for what the proprietors can make out of it?

I will be glad to take this up with you, and furnish you any other data that I can, and will furnish certificates from the officers and faculty of the college at which I graduated, which will substantiate the statement that this publication is unworthy of the confidence of the medical profession.

If you will give this matter publicity through the Journal in any way that you think proper I shall be very glad to have you do so.

Very truly yours,
A. N. Shotwell, M.D.

METEOROLOGICAL RECORD

For the week ending October 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S....2	30.41	61	64	58	92	92	94	N.	E.	10	2	F.	O.	
M...3	30.26	70	83	58	84	83	84	S.W.	S.W.	12	15	C.	C.	
T....4	30.12	76	85	68	82	83	82	S.W.	S.W.	12	8	C.	O.	
W...5	29.96	65	74	56	94	94	94	S.E.	N.W.	7	8	R.	R.	1.31
T....6	30.26	56	62	51	56	49	52	N.W.	N.	12	6	C.	C.	
F....7	30.41	56	66	45	79	68	74	N.W.	S.	5	10	C.	O.	
S....8	30.09	58	64	53	92	89	90	S.E.	W.	9	8	R.	C.	.22
☞														1.53

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 8, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1232	438	10.88	11.76	7.20	2.88	1.76
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	227	94	13.20	7.92	6.16	4.40	.44
Baltimore . .	506,389	170	62	18.29	7.67	5.31	5.31	7.67
Cincinnati . .	405,000	99	—	12.12	7.07	11.11	—	1.01
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	285,000	87	33	23.00	10.35	9.20	8.05	12.65
Washington .	277,000	111	40	23.40	11.70	4.50	5.40	9.90
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	60	25	31.54	20.00	20.00	—	3.32
Nashville . .	87,754	37	11	8.10	16.20	2.70	2.70	2.70
Charleston . .	65,165	45	21	22.22	6.66	13.33	8.88	—
Worcester . .	108,250	27	13	37.00	11.10	22.22	—	3.70
Fall River . .	95,919	32	14	21.91	9.39	18.78	3.13	—
Cambridge . .	89,724	35	18	28.50	2.85	19.95	—	5.70
Lowell . . .	88,641	26	12	15.40	3.85	11.55	3.85	—
Lynn	66,703	12	4	—	8.33	—	—	—
New Bedford .	66,340	25	11	4.00	16.00	—	4.00	—
Somerville . .	61,101	11	2	27.27	9.09	9.09	9.09	—
Lawrence . .	57,263	21	7	9.52	4.76	9.52	—	—
Springfield . .	56,501	15	5	33.33	11.11	—	—	11.11
Holyoke . . .	43,424	18	9	27.27	16.66	22.22	—	—
Brockton . .	37,278	14	4	—	7.14	—	—	—
Salem	36,883	7	1	14.28	—	14.28	—	—
Malden . . .	34,613	8	4	50.00	12.50	12.50	12.50	12.50
Chelsea . . .	33,468	10	9	—	—	—	—	—
Haverhill . .	32,022	15	5	33.33	13.33	13.33	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	7	4	—	—	—	—	—
Fitchburg . .	29,438	5	0	—	60.00	—	—	—
Taunton . . .	28,167	12	3	—	8.33	—	—	—
Everett . . .	25,338	12	6	—	—	—	—	—
Quincy . . .	23,549	5	4	20.00	—	20.00	—	—
Pittsfield . .	22,613	—	—	—	—	—	—	—
Waltham . .	21,812	8	3	—	—	—	—	—
North Adams .	20,971	8	1	12.50	12.50	—	12.50	—
Chicopee . .	17,842	—	—	—	—	—	—	—
Medford . . .	16,511	5	3	60.00	—	40.00	20.00	—
Newburyport .	14,915	—	—	—	—	—	—	—
Melrose . . .	11,032	—	—	—	—	—	—	—

Deaths reported 2,422: under five years of age 916; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 382, consumption 252, acute lung diseases 208, diarrheal diseases 191, typhoid fever 83, diphtheria and croup 57, whooping-cough 26, scarlet fever 11, cerebro-spinal meningitis 8, measles 3, erysipelas 2.

From whooping-cough New York 10, Pittsburg 4, Boston, Providence and Haverhill 2 each, Worcester, Cambridge, Holyoke, Malden and Newburyport 1 each. From scarlet fever New York 8, Boston, Pittsburg and Washington 1 each. From cerebro-spinal meningitis Washington and Worcester 2 each, New York, Boston, Somerville and Haverhill 1 each. From measles New York 3. From erysipelas New York and Boston 1 each.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, October 24th, at 8 o'clock.

Dr. Thomas Dwight, by invitation, will speak on: "Contortionists and Anomalies of the Spine." His remarks will be illustrated by lantern slides.

Dr. Malcolm Storer: "Retro-displacements of the Pregnant Uterus."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, October 26, 1898, at 8 P. M.

Papers: Dr. R. A. Kingman: "Report of a Second Case of Double Ovariotomy during Pregnancy; Hydatiform Mole."

Dr. Wm. M. Conant: "Extrauterine Pregnancy, with Report of Cases."

F. W. Johnson, M.D., *Chairman.*
C. H. Hare, M.D., *Secretary.*

Sixth International Otological Congress.— The International Otological Congress will take place in London under the Presidency of Dr. Urban Pritchard, Professor of Otology at Kings' College, London, on August 8, 9, 10, 11, 12, 1899, the Treasurer being Mr. A. E. Cumberbatch.

The British Organization have decided that in addition to papers on any subject relating to oto'ogy, the following shall form a subject for general discussion, namely, "Indications for Opening the Mastoid in Otitis Media Suppurative Chronica."

E. Cresswell Baber, *Hon. Sec. to the Committee*,
46 Brunswick Square, Brighton.

The Southern Surgical and Gynecological Association.— The eleventh annual meeting of the Association which was announced to be held in Memphis, Tenn., Tuesday, Wednesday and Thursday, November 8th, 9th and 10th, has been postponed till Tuesday, Wednesday and Thursday, December 6, 7 and 8, 1898, on account of the quarantine regulations in some parts of the South. The Gayoso House has been selected as headquarters for the Association.

Members of the medical profession are cordially invited to attend. Dr. R. B. Maury, of Memphis, is chairman of the committee of arrangements.

Richard Douglas, M.D., *President.*
W. E. B. Davis, M.D., *Secretary.*

RECENT DEATH.

Nathan Smith Lincoln, M.D., of Washington, D. C., whose death was reported last week, was a prominent and successful practitioner of that city. He was named after Nathan Smith, the distinguished surgeon of Hanover, N. H., and was graduated from Dartmouth College. He received his medical degree from the University of Maryland. He was a member of the American Medical Association, one of the vice-presidents of the Ninth International Congress, which met in Philadelphia in 1887, and president of the alumni of the University of Maryland. In 1866 he was elected one of the surgeons to the Providence Hospital, which place he resigned in 1875.

BOOKS AND PAMPHLETS RECEIVED.

A Country Doctor. By Thomas Hall Shastid. Battle Creek, Mich.: Published by the Author. 1898.

The Aseptic Animal Suture: Its Place in Surgery. By Henry O. Marcy, A.M., M.D., LL.D., Boston. Reprint. 1898.

The Pennsylvania Society for the Prevention of Tuberculosis, Organized April 10, 1892, Incorporated 1895. Report for the Year ending April 13, 1898.

Transactions of the Association of American Physicians, Thirteenth Session, held at Washington, D. C., May 3, 4 and 5, 1898. Volume XIII. Philadelphia: Printed for the Association. 1898.

Handatlas der Anatomie des Menschen. Mit Unterstützung von Wilhelm His, Professor der Anatomie an der Universität Leipzig. Bearbeitet von Werner Spalteholz, ao. Professor an der Universität Leipzig, etc. Zweiter Band, 2 Abtheilung. Leipzig. 1898.

Atlas of Syphilis and the Venereal Diseases including a Brief Treatise on the Pathology and Treatment. By Prof. Dr. Franz Mracek of Vienna. Authorized translation from the German. Edited by L. Bolton Bangs, M.D., Consulting Surgeon to St. Luke's Hospital and the City Hospital, New York; late Professor of Genito-Urinary Surgery and Venereal Diseases, New York Post-Graduate Medical School and Hospital. With 71 colored plates. Philadelphia: W. B. Saunders. 1898.

Original Articles.

TUMORS OF THE FRONTAL LOBES;[1] WITH SPECIAL REFERENCE TO A CASE WITH PREDOMINANT SYMPTOMS OF A NEURASTHENIC TYPE.[2]

BY EDWARD WYLLYS TAYLOR, M.D.,
Instructor in Neuropathology, Harvard University.
(*From the Sears Pathological Laboratory, Harvard Medical School.*)

There is, at the present time, a certain unanimity of opinion regarding the functions of the frontal lobes. Since the researches of Goltz, Hitzig, Ferrier and others, and the more recent somewhat speculative investigations of Flechsig, the feeling has constantly grown that we may confidently look for a so-called centre of the higher psychical functions in this portion of the brain. While accepting the general proposition it is perhaps as well to maintain a certain scepticism regarding the actions of dogs and monkeys deprived of their frontal lobes, particularly when such actions are made to serve as analogies for man. This is a warning which applies to much physiological experimentation, but certainly with particular force when an attempted comparison is made between the brute and the human mental faculties. Ferrier,[8] for example, on the basis of much careful vivisection, says: "We have therefore many grounds for believing that the frontal lobes, the cortical centres for the head and ocular movements, with their associated sensory centres, form the substrata of those psychical processes which lie at the foundation of the higher intellectual operations." The following sentences read: "It would, however, be absurd to speak of a special seat of intelligence or intellect in the brain. Intelligence and will have no local habitation distinct from the sensory and motor substrata of the cortex generally." Apart from the implied contradiction in the sentences just quoted, we think Ferrier and his colleagues of the experimental school go too far in their generalization as to the function of the frontal region. It is evident that the problem is an exceedingly subtle one and that, however valuable as corroborative evidence the actions of mutilated animals may be, still in last resort we must appeal to man alone in the determination of defects of those functions which man alone possesses. Fortunately there already exists a large number of observations which bear directly upon the general question and it is to these that we wish for a moment to direct your attention. From time to time cases have been collated and reported which tend in general to show that the frontal lobes of man have a somewhat definite relation to his higher psychical attributes, to which we may apply the general term of character, using that word in its broadest sense. Thus, Starr,[4] writing in 1884, found that in patients with disease of the frontal lobes one-half suffered a distinct mental disturbance. His own words are, "This (the mental disturbance) did not conform to any one type of insanity; it is rather to be described as a loss of self-control and change of character."[5] Further on he says: "Memory does not appear to be affected in disease of the frontal lobes."[6] Judgment and reason, on the other hand, he found particularly involved.

In 1888 Leonore Welt[7] described in much detail a large number of cases, some personal and others occuring in the literature up to that time, and arrived at more or less contradictory conclusions, although finding definite changes of character in a certain proportion of cases. Bernhardt[8] writing much earlier was unable to attribute any peculiar psychical function to the frontal lobes. Knapp (The Pathology, Diagnosis and Treatment of Intracranial Growths, 1891), on the other hand, is strongly inclined to the opinion that in this region of the brain is located higher psychic function. He is not dogmatic, and would by no means exclude other areas from a share in this attribute, a position which he holds in common with many others.

Frequent individual cases have been reported which have tended to substantiate the general theory of the psychic function of this portion of the brain. Moeli[9] describes an interesting case in which for four years there had been so marked a mental disturbance that confinement in an asylum was necessary. Autopsy showed a tumor in the second right frontal convolution.

Hebold[10] relates a case of sarcoma of the frontal lobes characterized by a very early mental change. Clouston[11] has reported a similar case and very many others are to be found scattered throughout the literature.

Starr[12] perhaps has been most energetic in urging the higher psychic function of the frontal lobes, and of the value of this fact in diagnosis. Worthy of renewed mention in this connection is the now classical "Crowbar Case" reported in the *Boston Medical and Surgical Journal* of December 14, 1848, and later published by Dr. John M. Harlow in 1869 under the title, "Recovery from the Passage of an Iron Bar through the Head." It will be remembered that the patient's recovery from the accident was complete excepting for his impaired mental state. Dr. Harlow writes (page 19): "Mentally, the recovery certainly was only partial, his intellectual faculties being decidedly impaired, but not totally lost; nothing like dementia, but they were enfeebled in their manifestations, his mental operations being perfect in kind, but not in degree, or quantity."

Monakow,[13] Bruns,[14] and notably Oppenheim[15] have recently collaborated the literature and reviewed the existing opinion on the subject without a complete unanimity of opinion. Bruns, both in his monograph and in a paper published in 1892,[16] is inclined to attach but little importance to the frontal lobes as related to higher psychic functions.

The weight of evidence, however, is certainly in favor of the generally accepted view, in spite of the fact that many individual cases, of which ours is one, would seem to controvert it.

The exact character of the mental disturbance, admitting its existence, has been the subject of much study. Apathy, mental weakness, melancholia and dementia, mania and dementia, confusion and excited states have all been described in addition to the general changes of character to which reference has already been made. In 1889 Jastrowitz[17] described a certain form of disturbance, characterized by mental weakness associated with a peculiar excitability, to which he gave the name "Moria" [Century Dictionary definition: foolishness, fatuity]. This he believes to be pathognomonic of disease of the frontal lobes. His own words are: "Eine gewisse Form indess von Geistesstörung, den Blödsinn mit eigenthümlich heiterer Aufregung, die sogenannte Moria, sah ich einzig und allein bei Tumoren in den Stirnlappen."[18] Later in the same paper, he says: "Zeigen uns z. B. Kopfschmerz, Krämpfe, Erbrechen, die Existenz einer Neubildung im Gehirn überhaupt an, so dürfen wir dieselbe in die Stirnlappen versetzen, wenn die Patient mit Moria behaftet ist."[19]

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[1] Our interest in what follows centres chiefly in the prefrontal area, namely, that portion of the brain lying anterior to the precentral sulcus; it has, however, seemed best to use the more general term, rather than insist upon a further subdivision.

[2] Read before the Boston Society for Medical Improvement, May 2, 1898.

[3] Functions of the Brain, 2d Edition, 1886, p. 467.

[4] Starr: American Journal of Medical Sciences, April, 1884, p. 366.

[5] Loc. cit., p. 379.

[6] Loc. cit., p. 380.

[7] Welt: Deutsch. Arch. f. klin. Med., 1888, xlii, p. 339.

[8] Bernhardt: Beiträge zur Symptomatologie und Diagnostik der Hirngeschwülste, Berlin, 1881; quoted by Oppenheim.

[9] Moeli: Charité Annalen, 1883, viii, p. 540.

[10] Hebold: Arch. f. Psych., xvi, p. 552.

[11] Clouston: Edinburgh Medical Journal, July, 1875, p. 11.

[12] Starr and McBurney: American Journal Medical Science, April, 1893, p. 362.

[13] Monakow: Nothnagel, spec Path. u. Therapie, 1897, ix, i, Th. p. 491.

[14] Bruns: Die Geschwülste des Nervensystems, 1897, p. 94.

[15] Oppenhem: Die Geschwülste des Gehirns, Nothnagel spec. Path. u. Therapie, 1896, ix. i Th., p. 80.

[16] Deutsch. med. Woch., 1892, No. 7, p. 138.

Following Jastrowitz, Oppenheim[20] gave the name "Witzelsucht" to a somewhat similar symptom occurring in persons suffering from frontal lobe tumors. It is to be doubted, as Oppenheim himself implies, whether this peculiarity is of sufficient constancy to be of diagnostic worth.

Evidence goes to show that an affection of both temporal lobes is more likely to be productive of mental symptoms than when but one is affected, although so extensive a lesion is by no means necessary to bring about that effect. It would appear then that mental disturbance in general, and often of a peculiar sort, "Moria" (Jastrowitz), "Witzelsucht" (Oppenheim), occurs with greater frequency and earlier in tumors of the frontal lobes than in other portions of the brain. At present nothing more definite may be said.

Of other symptoms regarded as peculiar to disease of the frontal lobes several need mention. To Bruns,[21] chiefly, we owe an insistence upon a symptom of disturbed equilibrium, closely resembling the recognized cerebellar ataxia. He finds in this ataxia, on the whole, the most characteristic symptom of frontal tumors, and attempts to substantiate his claim by a number of carefully observed clinical cases. His views, certainly in the somewhat extreme form in which he states them, have not met with general recognition, although a similar disturbance of gait had been observed and reported by various writers, and various theories offered for its explanation.

The possible relation of this symptom of disturbed equilibration to another motor defect is of interest. Through the researches of Munk, Wernicke and others it has come to be generally accepted that the cortical areas which preside over the movements of the head, neck and trunk lie in the post-frontal region, the body area being above. It has, of course, been long determined, since Broca's first investigations, that the so-called motor speech area occupies the posterior portion of the third left frontal convolution. Leaving aside for a moment the aphasic disturbances, and directing our attention to the region lying above, we find a symptom, not infrequently described, of contractures of the neck muscles, often of an extreme degree. Knecht,[22] for example, describes a case in which the convulsions were characterized by opisthotonos and a violent bending of the head forward. In the intervals, the head could be neither extended nor turned on account of muscular contracture. Autopsy showed a tumor of the first and part of the second left frontal convolutions. Hebold[23] reports a similar case in which the head was held in a fixed position, through rigidity of the neck muscles. Oppenheim[24] has observed a permanent stiffness of the neck in a case of tumor of the left frontal lobe. There can be no doubt that this is a focal symptom of importance when it occurs, but naturally it must often be absent even in extensive growths of the frontal region when they are limited in their backward growth toward the Rolandic area.

Aphasia of the motor variety must of course occur when Broca's convolution is directly involved. This needs no further discussion. It is evident that the exact determination of speech defects is often difficult, especially in patients who for any cause are mentally impaired through intracranial disease. A certain slowness of speech, bradyphasia, has been described, but in the presence of an apathetic mental condition such a disturbance should be regarded as of doubtful significance as indicative of a true aphasia. Oppenheim[26] calls attention to a peculiarity of speech often observed in patients suffering from tumor of the left frontal lobe, characterized by a certain difficulty in starting the speech apparatus. The lips are moved before any sound is uttered, then words are said with difficulty and in a whisper, until finally speech becomes possible.

Agraphia has been observed as an accompaniment of motor aphasia in frontal tumors. In the doubt which exists regarding a special so-called centre for writing at the foot of the second left frontal convolution, nothing definite is to be said of the significance of the symptoms. In the determination of the existence of this disturbance also, the mental state of the patient must be carefully considered. If the growth lies at or near the base, sight and smell may be affected. Exophthalmos has been observed, no doubt as a result of pressure. Thomas and Keen[26] for example, have described an interesting case in which a unilateral exophthalmos was one of the symptoms of a non-infiltrating growth in the left frontal lobe. If the tumor grows backward toward those regions known to preside over various muscular movements the disturbance resulting is definite and conclusive. It is not our purpose to discuss these invasion symptoms, since they are thoroughly understood, and also since they did not occur in our case about to be reported. That they are of great value in diagnosis is self-evident. The difficulties arise in their absence.

Other symptoms of focal value, which have from time to time been described, are too vague to demand our attention in the present consideration.

Monakow[27] sums up the significant diagnostic points of tumor in the frontal lobes as follows:

(1) Marked intellectual defect, such as one sees in general paralysis, provided the disease is bilateral.

(2) A change of character in the sense of a moria.

(3) Finally that form of cerebellar ataxia to which, at least, an indirect focal indication may be attributed.

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[17] Jastrowitz: Deutsch. med. Woch., 1888, xiv, p. 81.

[18] Jastrowitz: loc. cit., p. 111.

[19] Jastrowitz: loc. cit., p. 112.

[20] Oppenheim: Geschwülste des Gehirns., p. 82.

[21] Bruns: Deutsch. med. Woch., loc. cit.

[22] Knecht: Arch. f. Psych., xii, p. 487.

[23] Hebold: loc. cit., p. 552.

[24] Oppenheim: loc. cit., p. 88.

[25] Oppenheim: loc. cit., p. 86.

[26] Thomas and Keen: American Journal of Medical Sciences, November, 1896.

[27] Monakow: loc. cit., p. 496.

How relatively inconstant these symptoms may be we have already sufficiently seen.

From the general symptoms and signs of brain tumor under which we include epileptiform convulsions, tumors of the frontal region are in no way exempt. Here, as always, they occur under conditions of increased intracranial pressure. Vertigo, headache, vomiting, optic neuritis are, no doubt in general, manifested later than in cerebellar growths, but not later than in growths occurring in other parts of the cranial cavity. General symptoms, therefore, with marked and peculiar mental disturbance, must be our dependences in the diagnosis of tumor lying anterior to the precentral sulcus. The inconstancy of other symptoms renders them of value only when found.

That a definite diagnosis, even of the existence of a tumor in this region, may at times be impossible the following history will demonstrate:

Patient male, age thirty-six, well previously. Five years ago vertigo; later, irregular epileptiform convulsions, infrequent Many symptoms of neurasthenic type, characterized chiefly by morbid fears For four years no headache, vomiting or optic neuritis. Last six months increased severity of symptoms; sudden death. Autopsy: glioma of first and part of second left prefrontal convolutions.

I give the history in considerable detail, and almost in the words in which it was taken at the examinations, in order better to show the diagnostic difficulties it presented and the confusion which arose in the interpretation of the clinical picture, as it then appeared.

The patient was a man of exceptionally robust appearance, who had served in the army and had borne many hardships during that period, without in the slightest affecting his naturally excellent health. His later employment had been in the Agricultural Department of the Government; one requiring mental rather than physical endurance. He was unmarried.

Early history unimportant. Diphtheria at twelve, with no after-effects. Temporary paralysis of the soft palate. Absolutely no venereal nor alcoholic history; smoked excessively up to three years ago. No convulsions in childhood. Heredity, negative; except that one sister twenty years old has typical hysteroid attacks.

Present illness: About three years ago while at the World's Fair (1893) first noticed vertigo in walking, with mental confusion. No distinct attack nor loss of consciousness at this time. A year and a half later symptoms of a similar sort had increased in intensity. Thought he had a "bilious attack" at this time. Improved under calomel, but the sense of confusion persisted, and his unpleasant sensations became more protracted. Saw Dr. H. E. Marion of Brighton. Improved temporarily but grew worse again; excepting when quiet felt confused and especially so when in a crowd. Head felt as if "floating in the air"; legs felt weak; never actually staggered or fell. This was in the summer of 1894. In the following winter, about December 1st, grew still worse, and had the first typical attack, for which he now seeks advice.

While in his office alone, at noon, stooping, he started to walk toward another room, but suddenly lost consciousness and probably had convulsive movements (muscles felt so later). He was found under a chair uninjured. He had had no aura whatever; had eaten heartily in the morning and vomited on recovering consciousness. For two weeks he felt "used up" and stayed in his room; was unable to make mental or physical exertion and did not attempt to. At about this time he noticed a peculiar sensation, characterized by sounds, seeming to be very distant. This was and is especially annoying in a confused and noisy street; consulted an aurist, who removed cerumen.

Two weeks after the first he had a nocturnal attack, in which he bit his tongue slightly and awakened his bedfellow, probably by his convulsive movements. Felt badly the next day. No attack following this for eighteen months. During the interval had many subjective symptoms characterized chiefly by a feeling of apprehensiveness. He was unable to walk in a crowded street or go into a large building, and had numerous fears, so often associated with and a symptom of neurasthenic states.

He next consulted an ophthalmologist, who cut one of the extrinsic muscles of the left eye, in the hope of relieving the epileptiform seizures which had become most annoying. The operation was without effect. He had never had headache. The next typical attack was ushered in by an indefinite aura followed by convulsive movements; unconscious for ten minutes. In April and June, 1897, he had attacks. Before the last one he had been feeling "semi-conscious" to things about him. No escape of urine in any of the attacks. He thinks they are decreasing in severity and increasing in frequency. Last attacks occurred two in one day, in August, 1897, and were described in detail by his brother (a medical student), who saw them. They were apparently typically epileptiform. Has been taking bromide for a year in moderate doses, which he thinks has materially helped him. Thinks also he has at times aborted attacks by "random talking."

Physical Examination. — Strong, and particularly muscular man, weighing about one hundred and seventy-five pounds, good color and with every outward appearance of health; no disturbance of motility anywhere. No history of injury nor slightest evidence pointing toward a focal brain lesion. Sensation unimpaired. No hemianesthesia or other discoverable stigmata of hysteria. Knee reflexes normal. Eyes: good pupillary and accommodation reflexes, no narrowing of visual field. Heart: no murmurs, but a marked irregularity. Pulse 96, fair quality but irregular. General air and manner that of a nervous hypochondriacal man. Has read and talked much concerning his own case, and has apparently attached undue weight to many somewhat insignificant symptoms. Has ideas of a neurasthenic character referable to special senses and head generally.

[In view of what follows, these general deductions made at the first examination are important. The opinion was then expressed with considerable certainty that, apart from the epileptiform attacks, there was no sufficient reason to suppose other than a so-called functional disturbance. The etiology of the convulsive seizures remained unexplained, but with a certain leaning toward hysteria.]

The patient was seen a second time August 25th, five days later. He had felt somewhat better, reassured as usual, after seeing a physician. Had had, however, a sense of fulness in the head and the usual annoying apprehensiveness; for example, he is exceedingly timid about riding a bicycle, although he has always been accustomed to all sorts of athletic exercise. He described to-day a typical nervous attack characterized by ungrounded apprehension.

About a year ago the urine was examined by a competent person and said to have been normal.

September 4, 1897. Speaks of neuralgiform, neurasthenic pains on both sides of head, extending over eyes. Has had this for six months; it is apparently not affected by use of eyes. Inconstant, irregular, sudden onset, throbbing. Patient has slight external strabismus, probably induced by muscle operation done a year ago. (See former note.)

Thinking that possibly the effort to converge caused the head pain, an ocular examination was suggested. The patient said that after the last visit he was better, mentally, than he had been for three years. Was able to visit the Public Library and walk down Boylston Street to Park Square without great discomfort. This was more than he had done for several years. Was much encouraged in this regard.

September 20, 1897. Improved. Has consulted Dr. Standish, who prescribed glasses, which have relieved the neuralgic pain to a certain degree, and probably general symptoms as well. Is still somewhat impatient in manner, a peculiarity to which no special importance was attached at this time.

LETTER FROM DR. MYLES STANDISH.

Mr. B. has some astigmatism, some hypermetropia, and also queerly acting ocular muscles. I should want to put a good deal more study into the case than I have, to be absolutely sure of my position. However, we have worked out a prism which enabled him to walk in a crowd yesterday without discomfort, and I feel that there is a good chance that ocular strain was the starting point of the nervous disturbance. I have suggested a glass, which, if that supposition is true, may give temporary relief.

In reply to a later letter, Dr. Standish reported normal eye-grounds.

September 23, 1897. A call from the patient's brother, who gave the following report: He (the patient) had been much better. Pain over eyes had been relieved by the glasses, and he felt greatly encouraged. Shortly before leaving home for Washington he had a typical but mild attack; convulsive movements without loss of consciousness; head thrown back; palpitation of heart. From the account this attack was almost certainly hysterical in character (observation made at the time). Came out of it after a few seconds, and felt well except for an extreme degree of natural discouragement. He had been able to abort the attack for some minutes until the slamming of a door seemed to precipitate it.

LETTER FROM PATIENT, MR. B., DATED OCTOBER 14, 1897. EXACTLY AS WRITTEN.

I have postponed replying to your very kind letter until a sufficient length of time should have elapsed in which to determine definitely what, if any, change had taken place in my condition. My brother informs me that he has advised you fully as to the features of the attack which I had the day I left Boston, and except to say that it was the mildest spell of the kind which I have ever had, and that I nearly succeeded in controlling it, I think it unnecessary to further allude to it. Since my return to Louisville, I feel that I have slowly but surely gained ground. I have had no return of the attacks though on two occasions I feel sure that had I yielded I should have succumbed to these spells. Protracted conversation in which I am subjected to considerable mental strain appears to be a prime factor in precipitating them, and on the two occasions referred to, I was obliged to cease talking, not daring to attempt a renewal for at least five minutes. Another feature of my case, which may or may not be of importance, is the fact that I almost invariably feel worse immediately after meals than at other times, though the symptom is not nearly so marked as before I went to Boston. The glasses have practically eliminated the headache from my case, and except after dark, when they appear to have a confusing effect, I feel that they have assisted me greatly in getting about. One singular and to me unexplainable result of wearing them is the development of a partial deafness at all times and quite a marked obstruction of the hearing after dark, especially when situated amidst a confusion of sounds. Upon the whole, I have made quite an appreciable advance, and feel greatly encouraged. I am still taking forty-five grains of bromide daily. Thanking you heartily for the interest you have manifested, and assuring you that I will be very glad to write to you fully of the development of any new symptoms I am, etc.

[From the foregoing it will appear that up to this time, namely, from the first onset of slight vertigo in 1893, or even before, to the fall of 1897 — a period of four years — no symptoms, excepting the convulsive attacks, had appeared which might not be interpreted as a temporary derangement of the nervous system, merely. This idea was strengthened by the whole attitude of the patient toward himself, by the relief suggestion had given him, and by the improvement in many of the symptoms.] The subsequent history, ending in his death, was given me by his brother.

After returning South, the patient did well for a time, as indicated by his letter just read. Then obstinate constipation came on and renewed vertigo, so that he fell several times in the street — a new experience. He also had slight convulsive movements which he knew were coming by an antecedent sense of pressure in the head and flushing of the face. The constipation increased in spite of care, and the whole condition gradually changed for the worse; he was dull, apathetic, slow of speech, and could not collect his ideas to write a letter. In conjunction with this his supposed neurasthenic fears disappeared and his minor nervous symptoms were much improved. During the early part of January he had an exceptionally stubborn attack of constipation lasting about a week. His memory at this time was deficient and for two or three days he was delirious. This attack led to the supposition on the part of his physician of a primary intestinal disturbance as the cause of his varied symptoms.

Finally his brother was sent for. The bromide which he had been taking in moderate amount was temporarily discontinued. Speech at this time was difficult and slow; a few days later morning vomiting of clear fluid; convulsive seizures with unconsciousness of from fifteen to twenty minutes occurred during the night. A few days later, while bending over, general convulsion, unconsciousness, frothing at mouth. That day a series of convulsions, with vomiting of liquid food. Bromide again begun and attacks were cut off. At the urgent advice of his physician he left for the North the next day; good journey, but depressed. Has improved since being at home. About three days before his death, constipation and a slight epileptiform attack; no known stomach disturbance. Is looking well, only occasional headaches, which are intermittent; no apparent mental disturbance; no paralysis of any sort; has complained of pain in lumbar spine, pains in back of head and neck. Has an abnormal appetite; is not particular as to what he eats; has slept well since being at home.

Now has considerable difficulty in holding urine, is obliged to go at once when he has the desire; has occasionally passed small amount unconsciously. Brother had noticed slow pulse, 50 or less, while at the South. Weight about 185 and excellent condition physically. Memory poor, occasional lapse of consciousness; asked the same question over twice, etc. Was about as well as usual Wednesday evening, February 2, 1898.

Thursday woke at 5 A. M. complaining of intense pain in the back of the head, which apparently was immediately relieved by copious vomiting. During the day had considerable pain and repeated lapses of consciousness; toward evening grew comatose, and when seen by his brother could not be aroused. Pulse very slow, under 50. Heart-sounds impure; respiration intermittent; stimulants produced only temporary relief and death resulted two hours later with a primary failure of respiration. Pulse could be felt three minutes after respiration had ceased. This final fatal attack was very similar to a less severe one shortly before, already described.

The sudden and altogether unexpected death of the patient prevented an examination on my part, as had been planned. It was, however, clearly evident from the symptoms developed during the last few months and from the outcome that he had been suffering from a cerebral tumor, whose location remained obscure.

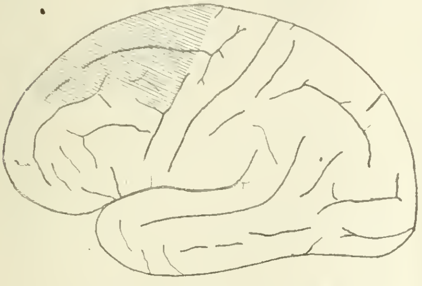

FIG. 1. Outer surface. Shaded area represents tumor.

In a later conversation with his brother it appeared that an extremely slight speech defect had existed for about three years, consisting merely in the inability to recall quickly a word. On one occasion, for example, the inability to say the word "bag" seemed about to bring on a convulsive attack. When the word was supplied the threatened motor excitement passed off at once and completely. This aphasic tendency was distinctly better during the last week of his life.

Autopsy. — It was impossible to perform an autopsy until nine days after death. The body and brain were, however, well preserved and appearances were in no way obscured. Examination of the brain alone was made. There was no deformity of the skull, nor external appearance of new growth. The dura was very tense, but beyond this presented nothing abnormal. Considerable blood in the longitudinal sinus. Dura strips easily and normal on inner surface. Convolutions much flattened and pale.

Over the left first temporal convolution blood is completely absent from veins over an area approximately two inches in transverse to two and a half inches in antero-posterior diameter. The brain at this area shows a practical obliteration of convolutional structure. On palpation there is a distinctly increased feeling of resistance over that of the corresponding area of the opposite side. The left hemisphere, looked at laterally, seems to stand at least a quarter of an inch higher than the right. The same appearance as just described is present on the mesial aspect of the left hemisphere involving the frontal convolution and extending downward to the corpus collosum (see Figs. 1 and 2).

After hardening in formalin, 10 per cent., frontal sections were made through the tumor mass. On the outer surface of the hemisphere the new growth occupied the entire first frontal convolution with the exception of a very small area at its anterior part. The growth had also begun to invade the posterior portion of the second frontal convolution. Its outlines were not sharply marked out, but it certainly did not extend beyond the precentral sulcus. The tumor is most marked in the first frontal convolution, where it evidently began.

On the mesial surface of the brain the tumor extends through the entire first frontal convolution and involves also the gyrus fornicatus in its anterior half. On cross-section of the tumor the cortex shows a distinct involvement as was also evident from the surface appearance. The outline of the cortex as distinguished from the white matter may, however, still be made out.

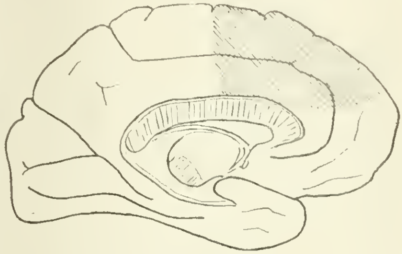

FIG. 2. Inner surface.

(To be continued.)

TRAUMATIC VENTRAL HERNIA.[1]

BY J. B. BLAKE, M.D.

THE following two cases, admitted to the First Surgical Service of the Boston City Hospital, seemed of sufficient interest to report and comment upon. Both were injuries of the abdominal parietes, following immediately upon trauma. The second case is reported by permission of Dr. H. W. Cushing.

CASE I. J. C., thirty years old, a teamster, was admitted to the City Hospital January 10, 1898. He was seen by the writer about 7.30 P. M., shortly after his admission, who found him perfectly conscious lying upon the accident table. He gave the following history: At 1 P. M. that afternoon, while unloading a team, he slipped from the wagon and struck on the end of a crowbar, which he was using. One end of the bar was on the ground, and he fell upon the blunt upper extremity. He then fell upon his back in the street. He was not stunned. The pipe which he had in his mouth did not fall, nor did it break, and the man continued smoking. He put his hand to his side, under his clothes, and not finding any blood, concluded that his abdomen was only scraped. He climbed into his team and was driven to his room on Emerald Street. Unassisted he went up three flights of stairs to his room, stripped and went to bed. He then noticed for the first time a small amount of blood on his shirt, and a wound just above his right groin, from which a yellow mass about two inches long protruded. He sent for a physician, who happened to be out; another physician came and examined him, covered the protruding mass with gauze and sent him to the hospital. His overalls, pants and drawers were torn cleanly at the level of the wound.

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[1] Read before the Boston Society for Medical Improvement, May 2, 1898.

When first seen, six and one-half hours after the accident, he was rather pale, perfectly conscious, not excited nor in pain, temperature 100°, pulse 70. He had not had vomiting, hiccough or other symptoms. Examination showed a strongly built man, whose abdomen on the right side was marked by a transverse gaping wound, one inch long, just above and a little outside the external abdominal ring. A small amount of straw-colored serum was escaping from it. The house surgeon told me that nothing protruded from the wound when he first saw it, an hour before, but that there was a soft swelling just above the wound which partially disappeared on manipulation and during the cleansing and shaving preparatory to operation. There was some question at this time whether the patient really saw anything protruding from the wound. His story after the operation was much more definite than before.

The site of the operation was again carefully cleansed with 1 to 6,000 corrosive sublimate, the nozzle being gradually introduced into the wound, which ran upwards and outwards towards the anterior superior spine. The skin was then incised and the wound was found to be three inches long and superficial to the external oblique aponeurosis. At the upper end a bit of omentum, about the size of the terminal phalanx of the thumb, was found protruding through the fleshy belly of the external oblique. It was not wounded nor strangulated, but several black hairs, apparently pubic, were found scattered over it. About three inches more of omentum were easily pulled out, bringing with it a few more hairs and a little more serum, but no blood nor turbid fluid, no sign of intestinal contents. It was washed with salt solution and replaced, and some salt solution put into the abdominal cavity. The finger introduced did not find signs of any abnormal condition. The wound seemed to be a splitting apart of the fibres of the muscles — rather than a clean cut — and resembled somewhat McBurney's incision wound for appendicitis. It was just below the level of the anterior superior spine and about one and a half inches above Poupart's ligament. It was packed lightly with iodoform gauze and the skin incision sutured; baked dressing and swathe. For two or three days there was considerable abdominal distention which was relieved by a high enema, and for a week it was impossible to move the bowels except by enema. The pulse and the expression of the face were always good. Packing removed on the third day, bringing with it a small amount of clotted blood; otherwise uneventful recovery. Discharged February 18th. He did not return to work until the end of March and then began his old occupation of teamster and has worked regularly since, without symptoms referred to the site of injury.

When last seen, about ten days ago, the operation wound was a firm line scar, which does not bulge more than the other side of the abdomen when patient coughs. He wears a padded canvas swathe. On looking him over, the results of several other accidents were discovered. On his forehead is a long scar — and the tips of the second and third left digits are missing — the result of an encounter with a hay cutter, for which he says he was treated twenty-five years ago by Dr. J. G. Blake. On the left leg is a broad purple scar, one inch long, just below and behind the head of the fibula, where he was struck, since he left the hospital in February, by a bullet accidentally fired into the street. He may be said to have suffered many things from many men, and to have recovered from them all rather better than might have been expected.

CASE II entered the hospital on December 3, 1897. He was thirty-eight years old, and gave a history which seemed entirely inconsistent with the injuries which he presented. No amount of questioning, or cross-questioning, however, could elicit from him any variation in this story, which was, that four days before entrance, while endeavoring to jump across a small brook, he slipped and struck heavily upon his right side, particularly upon the right side of his *abdomen.* The fall caused him some pain, but he walked home unassisted and went to bed. Next day he noticed a swelling of the right side of the abdomen, larger than the fist, painful and tender. He did not notice whether it increased in size upon coughing. He was sent to the hospital by a physician, and came in an electric car.

The man was above medium size, and strongly built. A systolic murmur was heard at the cardiac apex. This murmur was not transmitted to the axilla. Cardiac hypertrophy was not present. On the right side of the abdomen, just below the ribs and extending into the flank, was a swelling which obliterated the natural contour of the waist. It was not discolored, was slightly tender and slightly dull upon light percussion.

There was also an ecchymosis covering the perineum from coccyx to scrotum, and another ecchymosis over the posterior part of thigh, just above the popliteal space.

The finger-nails were short and broken, and the finger-tips hard, discolored and contused, with a certain amount of blood under the skin. He did not present symptoms referred to either the peritoneal cavity or the alimentary tract. Except that he was sore and bruised, he was comparatively comfortable. It was considered that operation might be necessary, and he was prepared for it. A moist dressing of corrosive sublimate was placed over the abdomen and a tight swathe applied; he was given a diet of meat broths.

The swelling, which seemed to be in the abdominal wall, slowly subsided; ten days after entrance it had practically disappeared, leaving a hard edge, somewhat like the crater of an absorbing hematoma. The ecchymosis on thigh and perineum cleared up, he was allowed to have his clothes, and was about to be discharged, when it was discovered that the subcutaneous crater-like edge was apparently more distinct than before, and that on coughing nearly the whole of that side of the right abdomen which is covered by the muscular belly of the external oblique bulged outward to an extraordinary degree; it was as if a considerable portion of the abdominal contents was pushed through the wall and presented immediately under the skin. The rounded edge extended from a little above the level of the umbilicus, at the outer edge of the rectus downward and outward in a curve, to be lost below the anterior superior spine of the ilium. This part of the wall was softer than the rest, and bulged a little even when the patient was breathing naturally. After careful examination the diagnosis was made of rupture of parts of one or more muscles of the abdominal wall, and a consequent traumatic ventral hernia (though it must be said, while in the minds of some of the surgeons, this diagnosis was only provisional, to the writer it seemed absolute).

Patient was again put to bed, and developed incidentally a mild tonsillitis. As the condition of the abdomen did not change and the patient was a laboring man, and this seemed to be a disabling injury, operation was advised, requested by the patient, and performed by Dr. Cushing about three weeks after the original injury.

An incision was made through skin and superficial fascia, in the direction of the fibres of the external oblique, beginning about one and one-half inches inside, and sloping above anterior superior spine, and going to edge of rectus. Fibres of the external oblique were carefully laid bare, and no laceration could be discovered, either of the muscular belly or of the aponeurosis. The external oblique was split and the internal laid bare. This was also intact. The sheath of the rectus was nicked, and the muscle found to be normal. The only positive condition suggesting the injury discovered was a certain thickening along the edge of the rectus in the aponeurosis of the external oblique, corresponding to the crater-like edge above mentioned, which the writer had taken to be the contracted edges of the ruptured muscular fibres.

The wound was closed, layer by layer, with catgut, and the skin by buried catgut suture. The result was uneventful healing by first intention, and a faint line scar. Three weeks after operation there was still bulging on moderate coughing, though less than before. About this time the patient was examined by Dr. Knapp, who found that the muscles seemed to react normally to the electric currents, but required distinctly stronger currents than upon the other side. On February 7th he was discharged to the Nervous Out-Patient Department, to which he returned several times, and during which time he improved steadily but slowly. Since the middle of February he has been lost sight of, and in spite of all efforts, no trace of him can be discovered.

According to the usual definition, a *ventral* hernia is one appearing at a part of the abdominal wall where no opening or point of diminished resistance normally exists. A *traumatic* hernia is one which results from accident or operation, regardless of situation. The post-operative herniæ which are extremely common form a distinct class by themselves, and will not be considered in this brief paper.

Given a perforating wound of the abdominal wall, and the protrusion of viscera through it, the surgeon is confronted by four principal sources of danger: (1) hemorrhage; (2) injury, often laceration, occasionally strangulation of the protruding viscera or of the abdominal contents; (3) infection of peritoneal cavity; (4) resultant weakness of abdominal parietes.

From a moderately extensive examination of the literature it would seem that cases of traumatic ventral hernia are not often considered of sufficient importance to report, and when reported are classified under a variety of headings. The number of references is comparatively small, though the condition itself is not uncommon. Probably the first case recorded is found in Roman history, and occurred during a pugilistic contest. The contestants were exchanging alternate blows. One insisted that the other should place his fist above his head and while in this defenceless position drove his hand through the opponent's abdominal muscles and tore out his entrails. The judges awarded the laurel wreath to the dying man. This episode has been immortalized by two of Canova's well-known statues.

Coming to more modern times, in 54 cases of stab wounds and penetrating wounds of the abdomen found in the recent records of the Boston City Hospital hernia was present in 12 (about 22 per cent.).

Traumatic ventral hernia may follow gunshot wounds, stab wounds or perforating wounds made by blunt instruments, or direct violence, as in the cases recorded.

Hernia following gunshot wounds is extremely rare. Otis found but two cases reported to the surgeon-general during the Civil War. Connor says this is probably less than the actual number of cases which occurred and reports one more case; and Patzki, in 1872, reported a single case (omentum presenting, not touched till eighth day, then cut off with wire ecraseur without opening abdomen. Recovery). The indications at present in this condition would be immediate laparotomy, the hernia being entirely secondary in importance to the probability of injury to the viscera.

Hernia following sword or bayonet wounds is so rare as to have almost escaped mention in war reports.

The wounds most frequently followed by hernia are knife wounds (cuts or stabs) and wounds caused by falling upon broken glass or upon sharp instruments. They vary in size from a fraction of an inch to a foot or more. Hunter reports case of a girl eight years old, who fell while carrying a whiskey bottle. The wound was only three-fourths by one-half inch, yet the entire stomach was found outside the abdominal wall. The case recovered. Caine and Cuff report cases illustrating the other extreme, in which two men slashed themselves with razors, one vertically, the other horizontally. In both cases the stomach, almost the entire small intestine, the colon, and the omentum were found outside the abdominal parietes, yet both recovered. Clark reports a five-inch knife wound, in which the entire small intestine, colon and omentum protruded, and the omentum was found covered with shavings; the man recovered and was well three years later. Frank describes a case of multiple stab wounds, which occurred in Vienna, in which omentum presented from one wound, and gut, which was wounded, from the other. Recovery. Finally, Mitra describes a very unusual case, that of a Hindu who was suffering from marked ascites, and who slipped and fell to the floor after getting out of bed. He ruptured his abdominal wall above the umbilicus, small intestine protruded; and was also ruptured completely across the circumference; it was cleaned and stitched to the abdominal wall *in situ*, forming a double artificial anus. This case died.

(1) Hemorrhage in these cases will depend on the position and size of the wound. In several reported instances the hemorrhage was extremely severe, and was from the deep epigastric, the internal mammary or the circumflex iliac. In the case referred to above, in which the abdomen was cut transversely from one anterior superior spine to the other, both deep epigastric arteries were severed, and the patient was pulseless. All four ends were tied, and a quart of hot salt solution (temperature 108°) was put into the median basilic vein, followed by a pint of coffee by rectum. This energetic treatment saved the man's life. The difficulty frequently found in these abdominal wounds is that the severed vessels contract into their sheaths; the incision should be enlarged, if necessary, and the vessel picked up and tied. Heat is of extreme value in these cases.

(2) Laceration of protruding gut should be closed by Lembert sutures. In the few cases in which this is not possible an artificial anus may be made.

Strangulation, or incarceration, is relieved by enlarging the incision.

(3) Infection may be introduced into the peritoneal cavity at the time of the accident, or afterwards. It may be due to material from outside, or to the contents of wounded viscera. It is the most serious of the dangers with which the surgeon is confronted, for it is present in greater or lesser degree in every case.

If the intestine is wounded, after the rupture is closed the peritoneal cavity should be irrigated thoroughly and drained, according to the majority of writers. But cases of recovery are reported in which the abdominal wound was sewed up tight. If the intestine is not wounded it should be most thoroughly cleansed and then returned; and the same is true of the omentum, save that in cases in which a small amount of omentum has been exposed for some hours it is probably better to tie and cut it off.

The length of time intervening between accident and operation has a most important bearing upon infection; the longer this interval, the greater the necessity of drainage. Frank, of Vienna, insists particularly upon drainage in every case where there is any injury of any viscus, and advocates cleansing the peritoneal cavity by gauze sponges entirely without irrigation. Infection is frequently absent where it might be most expected. Dr. Brough reports a case of a sailor stabbed by a case-knife in the hand of a comrade at sea. Gut and omentum protruded. The captain washed the protruding viscera in water from the cask, pushed it back and sewed up the wound with a sail-maker's needle and thread. When Dr. Brough saw the case, ten days later, the man was well and sitting up, and had not had any symptoms of infection.

(1) Resultant weakness of the abdominal walls is greatest in extensive wounds and in wounds which are drained. Its dangers are slight when compared to infection, and it should be allowed to exert only a secondary influence upon the choice of treatment of the wound.

The hernia consists most frequently of omentum; then come small intestines, large intestine and stomach in the order named, or two or more of these may appear together. The hernia may immediately follow the trauma, or a varying interval may elapse before it appears. In these delayed instances, the protrusion is usually due to vomiting, muscular exertion or both. In several instances men have run, walked or rode some distance, before realizing that they have been wounded.

The most important rule in operating is to begin at the earliest possible moment after the accident. The next most important is the thorough cleansing of all exposed viscera before operating. In the majority of cases the incision should be enlarged, usually in the direction of the original wound unless this would involve one of the larger arteries. Torn or dirty edges of the wounds should be resected. Stasis of the bowels frequently follows operation, and is probably due to a mild degree of peritonitis. It may be treated by immediate and repeated small doses of calomel (one-tenth to one-fourth grain every hour till movement, or ten doses) and high enemata. Reboul recommends ice on the abdomen as a preventive of inflammation.

The diet should be meat broths. The drainage may be removed on the third to fifth day.

The prognosis in cases in which the viscera is not wounded is good. Only one report of death has been found in cases of this variety.

The second case reported at the beginning of this paper was supposed to represent a variety of injury which seems to be very rare. Rupture of the abdominal wall, without external wound, is found usually as a result of severe violence inflicted by a blunt object, such as a wagon shaft. The writer has been able to find only very few cases which seemed to be authentic; of these, three were due to the impact of a wagon shaft, and one to a fall upon the handle of a hammer. Dr. Monks has kindly given me notes of one of these cases. A man, standing on the running-board of an open car, was struck in the abdomen by the tip of the shaft of a passing team. A tumor, the size of a fist, appeared under the skin, and surrounded with much ecchymosis and swelling. The tumor increased on coughing or muscular exertion. The skin was not broken.

Dr. Monks saw the case twice, two weeks and eight weeks after the accident, the hernia remaining unchanged, though all the ecchymosis had disappeared at one and a half years later; the man died of aneurism of the aorta. At the autopsy, Dr. Whitney found a rent in the muscular bellies of the abdominal wall, through which the intestines protruded.

Another interesting case is reported by Lotheisen. A bicycle rider ran into a wagon shaft, which struck him on the right just above the umbilicus. He had some pain, and went to bed. In a day or two he got up, but at the end of a week began vomiting, and was seen by Von Hacker, who found a tumor size of apple at point of contact. The man's general condition became rapidly worse. A diagnosis of tear of rectus with protrusion and incarceration of gut was made. Patient died during the operation and the autopsy showed a bit of transverse colon protruding and attached all around the edges of the tear. The man could have been saved by earlier operation.

The other two cases, one from the City Hospital Reports, and reported by Platt, were smaller in extent and existed for years. Hutchinson, in a paper on "Lumbar Hernia," says that five of twenty-nine cases which he reported were following trauma more or less.

closely, and were apparently through the abdominal wall rather than the triangle of Petit. If this is so, they must be considered true ventral herniæ.

Why the abdominal wall is ruptured in some cases and not in others is to be explained partly by the size and shape of the impacting body, and partly by the rigidity or flaccidity of the muscles at the time. If the impacting substance be sharp or small, the wall is likely to be perforated. If larger and blunt, the chance of injury to internal organs without laceration of muscles is increased. If the wall is tense and contracted at the time of impact, the chances of laceration are increased. If relaxed, it is carried before the impacting object.

The treatment of these cases is non-operative, except in cases of incarceration or strangulation. A well-fitting swathe appropriately padded will usually allow the patient to carry on any but very laborious work. The prognosis for life is good; for the hernia, bad. Operation, if resorted to, should be done when other methods of treatment are found to be insufficient to retain the hernia and permit the man to work. In any long-standing case the gut will probably be found closely adherent to the edges of the ring. After breaking up the adhesions the opening should be closed as in any ventral or umbilical hernia.

The case reported at the beginning of the paper was probably a contusion and hemorrhage into the muscle, with an injury to the lower intercostal nerves at point of contact. The only symptom of hernia which it did not possess was the bulging of the wall when patient was breathing naturally and not coughing. So far as the writer can discover, this case is unique.

BIBLIOGRAPHY.

Hutchinson. Lumbar Hernia. British Medical Journal, July 13, 1889.
Platt. Maryland Medical Journal, February 7, 1891.
Lotheisen. Wiener klin. Wochenschrift, January, 1897, No. 1.
Madelung. Versammlung. Gesellschaft Naturforscher und Ærtze, Frankfurt, 1896.
Frank. Wiener klin. Wochenschrift, 1897, No. 35, p. 782.
Smith. Virginia Medical Monthly, February, 1894, p. 104.
Mitra. British Medical Journal, January 21, 1893. Rupture Abdominal Wall.
Caine. British Medical Journal, 1897, ii, p. 400.
Cuff. Lancet, 1897, i, p. 1493.
Beale. Medical Press and Circular, London, 1897, n. s. lxiv. Strangulated Ventral Hernia.
Langenbuch. Annual Universal Medical Science, 1894, iii, p. 47.
Clark. Loc. cit., 1895, iii, p. 44.
Demoulin. Proc. verb. Assoc. Franc. de Chir., 1896, pp. 451-454.
Reboul. Loc cit.
Hunter. Lancet, ii, 1897, p. 539.
Ross. British Medical Journal, 1897, i, p. 1024.
Burghard. Report Kings College Hospital, 1894-95.
Boston City Hospital Surgical Records, 1880-97.

Clinical Department.

MASSACHUSETTS GENERAL HOSPITAL.

CLINICAL MEETING OF THE MEDICAL BOARD.

(Concluded from No. 16, p. 391.)

Regular Meeting, Friday, February 11, 1898, Dr. C. B. Porter in the chair.

Dr. Fitz: It seems to me the case illustrates that with favorable conditions immediate or early laparotomy is likely to prove a success and in this instance it was to be expected after a week had elapsed and the general condition was constantly improving, that recovery was to be anticipated. The occurrence of a second perforation, however, proved to be irremediable and it may be added that at the post-mortem examination some thirty or forty ulcers were found in the intestine.

I will now present for your examination a case of

ANEURISM OF THE ARCH OF THE AORTA (WITH RADIOGRAPH).

The patient, a Swede, recently entered the hospital. He worked in an iron foundry and until some six weeks ago was supposed to be in fairly good health. At that time he had attacks of dyspnea for the treatment of which he came to the hospital. There was also some disturbance of voice. He has had no pain whatsoever, but there has been slight difficulty in swallowing solid food. I have outlined on his chest the region of dulness which is connected with pulsation over the upper part of the sternum, although in the sternal notch there is no tumor to be felt. He has not only difficulty of vocalization, but also a peculiar barking, high-pitched cough. Dr. Coolidge has examined the larynx and has found paralysis of the left vocal cord. We have, therefore, dulness over the upper part of the sternum, paralysis of the left recurrent laryngeal, pulsation in the region of dulness and difficulty in swallowing and occasional attacks of dyspnea. Mr. Dodd has taken a radiograph of his chest, which shows at the upper part of the sternum a rounded, light patch corresponding to the position of the aneurism, which is evidently a dilatation of the transverse portion of the arch of the aorta. The patient has another sign to be observed in a certain number of cases of aneurism, namely, a tracheal tug.

The next case is one of

SUCCESSFUL RESECTION OF THE PYLORUS FOR CANCER,

which I will show in connection with Dr. Conant and Dr. Porter, as we all had to do with the treatment of this patient. It is now six weeks after the operation and the patient and the specimen are present. This man, forty-seven years old, entered the hospital December 7, 1897. About a year previous he had suffered from cutting epigastric pain after eating, not relieved by pressure or by vomiting and made worse by food. There was frequent vomiting at the outset and the vomitus occasionally was brown like coffee grounds and the stools also were occasionally dark. During the first three months the vomiting became less and finally ceased. The quantity of the vomitus was considerable, about two quarts, but it was not particularly offensive. Six weeks before entrance and nine months after the onset of the symptoms he noticed a lump in the epigastric region. When he entered the hospital the tumor was elongated, rounded, nodular, movable, apparently about the size of a small banana, and the dilatation of the stomach was such that when inflated it occupied the greater part of the abdomen. The general appearance was good, emaciation was not extreme, the mental condition was excellent and the suffering was chiefly from the distention of the stomach. He was informed of the probable nature of the malady, its course if let alone and the prospect of relief from an operation which was necessarily serious. After a few days of consideration he returned for operation, which, in the absence of Dr. Porter, was performed most successfully by Dr. Conant.

Dr. F. B. Harrington: The closure of the abdomen without drainage is being tried more and more. It is certainly very surprising, to one accustomed to drain septic cavities in the open abdomen, to find that some of these may be treated by complete closure of the wound without drainage. I think there is danger of carrying this plan too far. I should not feel safe, in case of escape of fecal contents into the abdominal cavity, in closing without drainage.

If we can insure safety by filling up the peritoneal cavity with salt solution what need is there of all our preliminary aseptic preparations of the skin, instruments, etc.? I do not wish to imply in the least that Dr. Beach's case of typhoid perforation died from this cause. I do not believe that the use of the "normal salt solution" contributes greatly to the safety of complete closure without drainage. We are learning something of the wonderful power of the peritoneal cavity to take care of septic material.

Some abscess cavities may be emptied by tapping and never refill, but one never knows which will refill and which will not. If there has been a soiling of portions of the general cavity by septic material then I believe that it is safer to drain these portions. If there has been only close proximity of septic material and the organs in which the septic material is found can be removed entirely, as a Fallopian tube or an unruptured appendix, then I believe that complete closure may be safe.

Dr. Fitz: A word in relation to the temperature chart of the case of typhoid perforation may be said in reply to Dr. Harrington. The elevated temperature following the operation is not to be attributed so much to the operation as to the typhoid fever. The curve is carried on as continuously and uniformly as though nothing had happened to interfere with the progress of typhoid and gives no evidence of any disturbance from leaving the wound undrained.

Dr. Beach: The abdominal wound was completely closed without drainage after the *first* operation — a gauze drain was left in after the *second* operation. Recognizing the value of drainage after operations involving the peritoneal cavity, I have been surprised by my own recent experiences and those of others in cases of complete closure of the abdominal cavity after the evacuation of septic fluids even *with streptococcus infection*, and while I am not prepared to advocate it in all cases, here seemed to be one where it was the only practicable course. If the abdominal cavity had not been made aseptic by the prolonged and careful washing with hot water any possible remnant of sepsis seemed to be provided for by the normal salt solution to dilute it and promote its elimination. The universal diffusion of the septic fluid made it impossible to judge where drainage would have any value. Owing to the excessive distention of the intestines by gas in spite of the rectal tube so much pressure would have been exerted before the drains as to have robbed them of any special value. I believe that anything short of sewing up the wound tightly would have favored the appearance of the intestines among the dressings. The second operation showed that the abdominal wound closed and completely shut off the abdominal cavity from the outer air.

There were a number of superficial stitch-abscesses that would not have prevented recovery in themselves. The second perforation and the necrotic condition of the intestines were the evident causes of death. The collapsed intestine offered no obstacle to the insertion of the drain in *this* instance, nor to its working for the benefit of the patient had he survived.

I ought to say, Mr. President, that it seemed necessary to close the abdomen if we did not want to have the larger part of the intestine forced out into the dressing, there was so much tympanites.

Dr. Maurice H. Richardson gave

TWO CASES OF CANCER OF THE BREAST ILLUSTRATING THE DANGERS OF EXPLORATORY PUNCTURE AS AN AID TO DIAGNOSIS IN DOUBTFUL BREAST TUMORS.

Within the past year my attention has been called to the grave dangers of exploratory puncture in doubtful breast tumors. By exploratory puncture is meant the removal by means of a needle or a punch of a small portion of the tumor for microscopic examination. The dangers which the following cases emphasize are two: first, that of overlooking a carcinomatous nodule really present, and secondly, that of spreading an extensive and hopeless carcinomatous infiltration. In both the following cases the disease was overlooked, and valuable time was lost; in the second, and probably in both, the malignant cells were extensively disseminated early in the disease.

Case I. Mrs. M. D., age thirty-six years. I saw this patient, a very stout woman with large breasts, with Dr. E. F. O'Shea, of East Boston, on July 26, 1895. She was seven months pregnant. In the beginning of her pregnancy she had noticed an enlargement — a caking — of the left breast. She was examined at the Out-Patient Department of the Massachusetts General Hospital, where an exploration was made with the Mixter punch. A fragment withdrawn from the breast was examined microscopically and found not to be carcinoma. The patient was reassured and sent home.

The breast continued to enlarge and to become harder and more painful. I found, on July 26th, a greatly enlarged, hardened breast, extensively infiltrated with what seemed to be malignant disease. The skin over the breast was thickened, edematous, slightly reddened and minutely puckered. The axilla was filled with resistant movable masses. On July 31st I removed the breast and overlying skin, the pectoralis major, and the contents of the axilla. The subclavian triangle was also dissected, and glands removed. The fetus died and was removed some days later. She was discharged August 23d, with a granulating surface. On December 3d there was an extensive recurrence and she died a few months later. The only disadvantage was that the exploration seemed to justify a security which the event showed to be unwarranted, a security resulting in a fatal loss of time.

Case II. Miss E. H. H., aged fifty, came to see me on January 16, 1897. On September 7th, she first noticed a bunch in the left breast. There was no pain in it, except that she has always had darting pains through that breast. She had been told that it was muscular rheumatism. Since the first appearance of the bunch there has been a sensation of stinging, and the breast has become much enlarged. Two weeks before I saw her an exploratory puncture had been made by a surgeon of great skill and experience. The portion removed was submitted to the microscope, and nothing malignant was found. In spite of this favorable opinion, however, it was proposed to make a second puncture. This the patient was unwilling to permit. On examination I found the left breast somewhat enlarged. There was considerable ecchymosis about the punctured area, which was situated at the upper and outer quadrant. This portion of the breast was thickened, hardened, and somewhat irregular. No distinctly outlined tumor could be made out. The skin over the upper and outer half of the breast was thickened, reddened, resistant and edematous — in fact it had the appearances seen in diffused mammary cancer. These physical characteristics were not incompatible, however, with those to be expected after puncture and hemorrhage. Nothing abnormal could be detected in the axilla or above the clavicle. The patient was a stout robust woman. The tumor appeared to be a rapidly-growing carcinoma of the medullary type. Immediate exploration with the knife was advised.

The tumor was dissected on Monday, February 1, 1897, and a large portion removed for microscopic examination. The section presented the usual gross appearances of mammary cancer, appearances which with the history and complications present, in my opinion, a more reliable proof of cancer than a microscopic examination alone. An immediate microscopic examination confirmed the diagnosis; whereupon the breast and overlying skin were removed, with the pectoralis muscle. The axilla was found to be filled with secondary deposits closely adherent to the axillary vessels. The pectoralis minor had in its substance a small nodule which, with that muscle, was thoroughly removed. The dissection was carried to the first rib.

The examination of the tumor and pectoralis major showed a clear space between the two; a nodule was found among the fibres of the pectoralis major corresponding in position and size to that in the pectoralis minor, and in the same general line with the two nodules just described there was a stellate malignant mass in the axillary fat not connected with the enlarged lymph nodes.

The infection of the pectoralis major, the pectoralis minor, and the axilla, in a straight line, shows, I think, a direct contamination of previously healthy parts by the exploring punch, for the nodules were of about the same size and age, and in the muscles, at least, they were the only ones found.

Infiltration of the pectoralis muscles, especially the major, is by no means infrequent; the infection is, however, multiple if remote, or extensive if direct. Here were two remote masses growing in the substance of the muscle in such a line as a needle would make, and not in the ordinary course of the lymph channels.

Though the operation was extensive, I regard the prognosis as practically hopeless.[1] Indeed, all infiltrating carcinomata of the breast are probably beyond cure.

The time has come when all suspicious breast tumors should be explored so thoroughly that inspection and touch are possible. Even then a nodule may be overlooked. Exploration with a needle or a punch not only exposes the loose spaces about the tumor to infection, but it gives, by failing to extract a specimen from the affected spot, a false and highly dangerous sense of security. The same dangers exist in needle explorations of abdominal tumors. Some forms of malignant disease will follow the track of the instrument and appear at the skin in an incredibly short space of time. I have seen, for example, the stitch-holes of a closed abdominal wound, after nephrectomy for sarcoma of the kidney, burst out with luxuriant masses of recurrent disease. Moreover, in the exploration of abdominal tumors there is the added danger of hemorrhage. I believe that the exploratory punch, admirable as it is as an invention, must be discarded for safer and more thorough methods of exploration.

Dr. Elliot: Dr. Richardson spoke very positively about the necessity of drainage in intestinal resection, saying that he does not see how any case can get well without it. My experience is quite the other way. They do beautifully without drainage. I scarcely ever drain an intestinal resection. I have repeatedly dropped the ends in the middle of the abdomen without any clew to them at all and they all do perfectly well without a stitch-leak. I think the peritonitis glues them together. It is quite another matter with the Murphy button, which crushes the tissue. I think the Murphy-button cases ought all to be drained, because that is done on another principle. I have done more than a dozen cases of resection which I have not even been anxious about and which have not been drained.

Dr. E. S. Wood: I have a very rare specimen of urine to show from a case of true albumosuria. I will take but a moment of your time simply to illustrate the necessity for always relying upon something beside the nitric-acid test for albumin before arriving at the conclusion that you have to deal with a case of severe albuminuria. Upon doing the nitric-acid test for albumin you will at once draw the inference that there is somewhere in the neighborhood of one-fourth to one-half per cent. of albumin present. I think you can all see without trouble that there is a very heavy zone of what is apparently albumin, and it has all the appearances of a zone of coagulated albumin, being distinctly defined on both the upper and lower surfaces. It is a curdy and dense zone, which corresponds to about one-half per cent. of albumin. Upon trying the heat test for albumin with acetic acid (or without it) you will notice that upon warming the fluid slightly you get a precipitate which corresponds to the result which we have just obtained with the nitric-acid test. You see now a heavy coagulum very similar to what you get with a regular albuminuria. Upon continuing the heat to separate the albumin, as you would in separating ordinary albumin, you find to your astonishment that it completely disappears with the exception of a slight turbidity, which is due to a trace of serum albumin in the urine. This shows the necessity of carrying out the heat test to the boiling point, or close to the boiling point, before deciding as to the presence of albumin. The heavy precipitate will reappear upon cooling, which is one of the peculiarities of albumose. This heat test will react with either acetic acid or a few drops of nitric acid. In order to be sure that the substance is albumose you can apply the biuret reaction, which consists in rendering the urine alkaline with sodic hydrate and adding a few drops of a very dilute solution of sulphate of copper when you get the violet color characteristic of the biuret reaction, which responds only with albumose and peptone. You see the beautiful violet color in the upper part.

I have seen only one other case beside this, one Dr. Fitz saw in consultation. There have been only eight or ten cases of true albumosuria reported in literature.

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[1] She died in February, 1898.

One writer has considered it to be due to malignant disease of some of the bones of the trunk, ribs in one instance, and some of the older cases where it has been reported were considered to be cases of osteomalacia. In the case Dr. Fitz saw he made the diagnosis of myxedema. I think one of the causes of the so-called rarity of albumosuria is that it is not detected. Indeed, I myself am almost always satisfied in obtaining a test like that with nitric acid without the heat test. This is a case where there is some obscure spinal disease. I understand there has been no definite diagnosis made. Dr. Swain informs me the most prominent symptom is paralysis of the legs, which has reached such an extent that the patient is confined to the bed. There is also enlargement of the liver and a history of probable syphilis. He has chronic nephritis with large hyaline granular and some few waxy casts. The condition of the kidneys may possibly be amyloid infiltration.

Dr. C. L. Scudder: There are two mooted points still in the treatment of fractures of the lower end of the humerus either involving the elbow-joint or outside the elbow-joint, namely, in what position shall the arm be placed during the reparative process, and how early shall passive motion be instituted after healing has taken place? Those who advocate the completely extended position do so because they believe the carrying angle is of very great importance and should be preserved. They depend upon early passive motion for the obtaining of a serviceable joint. Those who advise the position of a right angle, which is the common position hereabouts, do so because it is feared that anchylosis will result, and if it does occur this is the most serviceable position in which the arm can be held.

It occurred to Dr. H. L. Smith, at one time connected with the City Hospital, that possibly there might be some active means of bringing the fragments into coaptation by the acutely flexed position, and in order to determine that fact he made some experiments upon the cadaver by chiselling off the condyles, causing T-fractures to be formed and fractures of the condyles into the joints. He discovered that when the elbow is in the extended position the fragments are loose and crepitus is easily obtained; that when the arm is at a right angle the fragments are a little less loose than in the extended position; that when the arm is forcibly flexed the fragments are held snugly together and pushed against the diaphysis and that the immobilization of the fragments is complete. He followed that experimental work by clinical experiments and published his reports three years ago of 10 or more cases. For the past two years I have treated in the outpatient department 26 cases of fracture of the lower end of the humerus which have involved in most instances the elbow-joint in the acutely flexed position. I will show three or four cases. When the patients appeared they were etherized in all instances, that a careful examination might be made, the arm was immediately and completely flexed. The results here have been unusually good, complete extension is maintained and flexion is practically normal. These cases demonstrate the preservation of flexion. These cases have been left untouched for from five to seven weeks, and at the end of that time the adhesive plaster has been taken off. This has been renewed at times, but no attempt at passive motion made; the plaster was taken off at the end of five to seven weeks and the arm passively and actively moved very gently at first and after three or four days the arm placed in a sling and then gradually motion allowed beyond a right angle. The results clinically bear out Dr. Smith's experimental work. The fragments are put in position better, and are immobilized in the flexed position so that on the cadaver and living subject under ether the position is an actively reducing and immobilizing one, and clinically the results are certainly satisfactory. The reason for this coaptation of fragments seemed to Dr. Smith to be that the posterior ligament of the joint and the coronoid process bind the fragments together at the lower end, and that the flexed position renders tense the fascia of the upper arm and the triceps fascia and the posterior ligament. There was no disturbance of the circulation of the forearm or hand in any of these cases. One case I did not put in the completely flexed position at first, but waited till some of the swelling had gone down. In no case was I obliged to give up flexion. Dr. Smith was obliged to give up flexion in one case. All my cases but one were in young persons, that is, under fifteen or twenty years of age. The acutely flexed position is the position *par excellence* for the treatment of uncomplicated fractures of the lower end of the humerus.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Concluded from No. 16, p. 393.)

SARCOMA UPON LUPUS SCAR TISSUE.

Tauffer[4] reports the case of a man of twenty-eight, whose mother and two sisters had died of tuberculosis of the lungs, and who had been affected with an extensive lupus of the face and neck since his twelfth year. There were also patches of lupus on his extremities. About five years previously a tumor had appeared on the left cheek which had been removed, but had recurred twice. When seen he presented near the left corner of the mouth a prominent tumor of the size of a hazel nut, covered with whitish-yellow crusts and scales, pretty hard in consistency and sharply bounded. It was considered clinically to be a carcinoma. The development of the lupus was so extensive that there was no question of operating upon the whole of the disease, so intervention was confined to removing the tumor. The histological report was a beginning epithelioma, but there was no evidence of lupus tissue. This operation was most successful, but within a year recurrent nodules appeared just beyond the area of the tumor which had been covered by a plastic operation. The new growth was as hard as cartilage, sensitive to the touch and bled easily. This tumor was excised and its histological character forms the basis of the paper. There could be no doubt that the previous tumors were epithelial, and in this case the clinical diagnosis was naturally epithelioma, inasmuch as in all previous cases of malignant growth secondary to lupus this form had been found. Some authors have divided them into lupus-carcinoma and lupus-scar carcinoma, but since it has been shown by the action of tuberculin and by the histological appearances that lupus scar tissue retains its lupous character and is not like ordinary scar tissue this distinction cannot be regarded as of much importance.

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[4] Virchow's Archiv, 1898.

It was found histologically that the substance of the tumor consisted of very numerous spindle cells, very rich in protoplasm, with one or several large, ovoid, elongated nuclei. Some of the bundles of cells were made up of giant cells, fibroblasts, which here and there showed peripheral nuclei, like true tubercle giant cells. No stroma or intercellular substance could be made out, but there were greatly dilated intercellular spaces in some places. There were abundant mast cells in the tumor and in the peripheral intercellular spaces. The elastic fibres were wanting in the papillary layer, while deeper down in the corium were seen remains of the elastic fibre network in the form of large packets rolled together.

There could be no doubt that in this case there was a connective-tissue neoplasm which had absolutely no relation to the epithelium. The writer accords with the view of von Langenbeck, which was that the appearance of carcinoma on lupus territory has the same significance as the much more common appearance of carcinoma on scars which have resulted from deep seated burns of the face, and like lupus scars have become the seat of a continuous inflammatory irritation. This chronic inflammatory condition of a scar is further suggested histologically by the presence of masses of plasma cells which are developed only in subacute and chronic inflammations in the connective tissue. The case reported shows that this chronic inflammatory condition of scar tissue may play a part also in the etiology of sarcoma as well as carcinoma.

THE EXANTHEMATA OF TUBERCULOSIS.

Under this heading Boeck [5] includes those cutaneous eruptions which, although the tubercle bacillus has not been found in connection with them, are so frequently found on individuals who sooner or later are shown to be infected with tuberculosis, that we are justified, indeed forced, to regard them as connected with the tuberculosis. It is probable that we here have to do with the action of the toxins produced by the bacillus. In this class he does not include the known forms of cutaneous tuberculosis as exemplified by lupus vulgaris, tuberculosis verrucosa cutis, tuberculosis cutis miliaris and scrofuloderma.

Among the tuberculous exanthemata he includes:

(1) *Lupus erythematous disseminatus.* The first clinical description of this form was probably published by Hutchinson. In 1880 Boeck published two cases, and the microscopic examination of one of them induced him to describe them as a peculiar form of lupus erythematous disseminatus of Kaposi. A further point of resemblance in one of them was the occurrence of an erysipelas perstans, such as had been noted by Kaposi. This condition was also somewhat indicated in the other case. The primary lesion consisted of an erythematous spot or papule which frequently arose from a deeper seated nodule. The erythematous macule or papule often showed a small vesicular-like formation in the centre. At this stage the efflorescence would either undergo involution, or else a small necrotic suppurating focus would form in the centre. The result of the latter evolution was a small, sharply-defined scar. These small white scars, in some instances no larger than a pin's head, in others considerably larger, lent a characteristic appearance to the affection. In one case the scars were so deep that the edges of the ear presented a serrated, jagged appearance. The favorite seats of the eruption were the ulnar side of the forearms, and the wrists, hands and ears, although it could affect any portion of the body. The efflorescences were sometimes grouped and in this way offered a resemblance to lupus erythematosus. Both of these patients, men between twenty and thirty, had shown since childhood signs of tuberculosis in the glandular system and in the eyes. Histologically long rows of cells were found along the vessels, and especially about the hair follicles and sweat glands.

Since these cases were published Boeck has observed a great many others, and has always attached them to tuberculosis. The affection has since been described by others under the names "Folliculites disseminées à tendances cicatricielles" (Brocq), "Follichs" (Barthélemy), "Hydradenitis destruens suppurativa," etc. Boeck then reports many of his later cases, showing the association of this form with tuberculosis, and in one case with lichen scrofulosorum, and the similarity that it often has to lupus erythematosus.

(2) *Lichen scrofulosorum Hebra.* This form certainly belongs in the class of tuberculous exanthemata. In spite of the local reaction about the lichen papules that has been observed by Neisser and Jadassohn after the injection of tuberculin, and in spite of the presence of giant cells in the infiltration, this form cannot be considered a true tuberculosis of the skin. In only one case has a bacillus been found (a single one), and all experimental inoculations on animals have been negative. One case has been reported where an extensive eruption of grouped lichen papules, precisely similar to lichen scrofulosorum, appeared in a tuberculous subject after tuberculin had been injected.

(3) *Eczema scrofulosorum.* Under this heading Boeck describes a form of eczema that occurs especially in older children or in young adults, and that is allied to lichen scrofulosorum, appearing often in individuals who have at some time been affected by the latter form of eruption. It takes the form of more or less infiltrated reddish spots, that are often simply scaly, but may be oozing and covered with crusts. Circinate and gyrate figures are often formed. They are often accompanied by small papules about the hairs, that resemble the lesions of lichen scrofulosorum. The favorite seats of the eruption are the thorax, the extensor surface of the upper arms and the extensor surface of the lower extremities. The scalp is often affected also, where the appearances are those of a pityriasis capitis, or an impetiginous eczema which is readily healed. This form of eczema is usually symmetrical in its distribution, and often recurs.

(4) *Lupus erythematosus discoides.* Boeck, who sides with those who regard lupus erythematosus as dependent upon tuberculosis, has endeavored to explain its relationship by the action of the toxins of the tubercle bacillus upon certain nerve centres of the skin, especially the vasomotor-trophic centres. He produces the statistics of 36 patients affected with the discoid form of lupus erythematous, and asserts that two-thirds of these showed signs of tuberculosis. Another argument in favor of the dependence of the discoid form of lupus erythematosus upon tuberculosis is that this form may be combined and mingled clinically with the disseminated form. He considers that age and sex play a part in determining which of the different varieties of tuberculous exanthem is pro-

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[5] Archiv. f. Derm. u. Syph., 1898.

duced. Eczema scrofulosorum appears chiefly in children, and lichen scrofulosorum in children and young adults. After this comes his disseminated form of lupus erythematosus (folliclis), which appears somewhat later in life, while the discoid form is found at a still later epoch. Occasionally, and as a rarity, the latter form may appear in children. As regards sex, all forms of lupus erythematosus are much more frequent in women than in men. Lichen scrofulosorum and perhaps eczema scrofulosorum are, on the contrary, more often seen in boys and young men. If we accept the proposition that a relationship exists between tuberculosis and the eruptions that we have been considering, we need not assume that this is a direct one. It may be supposed that the tuberculosis is only a predisposing agent which prepares the soil for another infection, although this seems unnecessary in the presence of an existing tuberculosis. In conclusion Boeck mentions several other affections which may have some claim to be included among the tuberculous exanthemata: lupus pernio, erythema induratum, gangrena cachectica infantum, acne cachecticorum, etc. These exanthemata are regarded as having much importance as forerunners of a tuberculosis that will later assert itself.

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Reports of Societies.

ANNUAL MEETING AND DINNER OF THE BOSTON CITY HOSPITAL CLUB, FEBRUARY 2, 1898.

DR. GEO. W. GAY, PRESIDENT.

The President, Dr. Gay, gave the following address:

Fellow Members of the City Hospital Club and Invited Guests: — I take great pleasure in bidding you a hearty welcome to our annual festival, and only regret that a larger number of our more than two hundred members, and more than three hundred graduates, could not be with us upon this occasion, marked as these meetings always are, by good fellowship and pleasant associations. Another year with its hopes and aspirations, its disappointments and bereavements has come and gone

> "To join the days before it,
> And as for what to-morrow brings,
> The morning mists hang o'er it."

I sincerely hope that this anniversary finds every one of us wiser, better, stronger, yea, and richer, not only in this world's goods, but in everything that makes life worth having and living, than the last one did, and it is to be hoped that this growth and development may continue as long as life itself.

> "This world is to all a stiffish soil,
> And man flies back with a glad recoil
> From the debts not due till to-morrow."

It has been said that no one having a perfect memory and a sensitive conscience could exist for more than two years in this crowded, restless, wrangling age of ours. All of which leads me to call to your attention the importance of cultivating and encouraging such reunions as we are enjoying to-night. They are not only a recreation, but a positive benefit, in that they relax the tension of everyday routine, change and elevate the currents of thought, give all the finer feelings a freer play, and rejuvenate us for the work that is to come. No class of men by reason of the character of their occupation needs this relaxation more than the physician, and the more he gets the better will be his work. We require and are made better by the stimulus and encouragement that we get by coming together, shaking each others' hands, looking into each others' faces, and exchanging ideas with old friends and comrades, who have the same occupation, the same anxieties and the same objects in life as ourselves.

As the genial Autocrat has so wittily said:

> "Ye healers of men, for a moment decline
> Your feats in the rhubarb and ipecac line;
> While you shut up your turnpikes, your neighbors can go,
> The old roundabout road, to the regions below."

My plea this evening, my friends, is for a closer union between the hospital and the hospital graduates. I know that I voice the feelings of the entire staff in saying that a City Hospital graduate is always welcome to any department of the institution; that we are always glad to see him, and that he will be pretty sure to see or to hear something to his advantage during his visits; while he may occasionally meet a surgeon who has an amputation at the hip-joint upon his shoulders, or a couple of doubtful laparotomies in his breeches pockets, or a pestiferous bladder damned by a prostate in more senses than one, as our friend Dr. Watson can so well tell us in almost any language on earth, yet this man's heart is in the right place, and while he may be excused under the circumstances from exercising all the little amenities of life, yet he is nevertheless glad to see you. A man under this stress of circumstances may not be as communicative as you could wish, yet his house-officer will be, if you get on the right side of him. If you can't do that, then I am afraid you have neglected your opportunities in the past.

When the alterations and repairs now well advanced toward completion are finished, it is intended to so arrange the work upon the surgical side that there shall be public operations every Friday, and especial pains will be taken that the medical public, who may honor us with a call, shall not be disappointed. Furthermore it is intended to so regulate the surgical visits in the wards — for, gentlemen, there are occasionally cases in the wards worthy of one's attention, surgery not being entirely confined to laparotomies even in these days — to so arrange the surgical visits that at certain hours in the forenoon of every day, one may be pretty sure to find a surgeon upon his rounds, willing and glad to receive any one interested in the work.

But, gentlemen, please remember that there are other departments in the hospital than surgical that are ably officered by gentlemen who are always glad to receive visitors and friends; the medical, gynecological, contagious, as well as the various out-patient departments are all worthy of attention and study, and are open freely to City Hospital men.

I am taking up too much of your time, and will hasten to give way to abler speakers. In closing allow me to thank you for the honor of being allowed to serve as your president this year, and to hope that this club may continue to grow and to prosper in every good way for all time.

TOASTS.

The President: The relations between the Trustees and the Staff of the City Hospital have always been extremely cordial and harmonious to the very great benefit of the institution and of all concerned. As time goes on and the hospital increases in size and influence, these peculiar relations are more and more highly appreciated by the Staff, and their earnest efforts will continue to be made in the future, as in the past, to merit a continuance of that trust and confidence.

These occasions of the City Hospital Alumni would hardly be complete without the presence of one or more of the Trustees. I am happy to say that we have one of them present this evening, who has kindly promised to say a few words on the present condition of the hospital from his standpoint: Mr. L. G. Burnham.

MR. L. G. BURNHAM said in part:

The management of the City Hospital is divided into two parts, professional and business. Of the former I shall not undertake to speak to its graduates. It may interest you to hear something of the business side and what seems to be one of the important needs of the hospital at this time.

I refer to a Down-town Relief Station which should provide for the first treatment of the accident cases that occur in the vicinity of our steamship wharves and railroads. The Trustees are desirous of establishing one or more of these in various parts of the city, particularly where there are most likely to be accidents, so organized as to render prompt service.

As you are aware, there is a hospital already established in one of the locations that I have mentioned, and I do not wish to be understood as speaking of it in an offensive way, but to point out to you the advisability of having patients treated with the care and intelligence for which the Boston City Hospital is noted. It seems to me that your organization can engage in no more fitting work than to aid the Trustees by moral support and co-operation in the establishment of such stations.

There has recently been installed an electric lighting plant which is said to be one of the most complete connected with any institution in this vicinity. The steam which drives the engines and dynamos is afterwards used for heating the buildings, so that the actual cost for fuel for this purpose is reduced to a minimum. The engine-room, with its appliances, is well worth a visit from you when at the hospital.

The hospital has, for several years, owned a wharf on the Roxbury Canal which was formerly occupied by a coal dealer. There is now being constructed on it, and nearly finished, a coal pocket which will be one of the most complete of the kind in the country. By using one engineer it is arranged to hoist the coal from the vessel alongside of the wharf by means of a steam shovel, delivering it to a hopper which conveys it into a system of buckets hung by bails, much the same as water pails in line, and carried along a track. These are conveyed along to points in the coal pockets where it is desired to deposit the coal. The buckets also run through a tunnel under the piles of stored coal which feeds into them by gravity and conveys the coal to the engine-room, where each day's supply is dumped into a hopper weighing scale, much like a tunnel, in construction, which is used in filling bottles.

With the advantages of these appliances for purchasing and storing coal at wholesale rates, and the economy to be obtained by burning the pea and buckwheat sizes of anthracite in place of the furnace size as now, I am speaking well within bounds when I say, that the saving to the hospital on its present consumption will be something like five thousand to six thousand dollars per year.

Have any of you noticed the Ambulance Service recently? It has been vastly improved of late. The ambulances which were in use a few years ago weighed upwards of three-quarters of a ton, but recently the superintendent and carriage builders have succeeded in reducing this weight to a half a ton. The discipline is excellent. It is possible, and is frequently done, to harness out an ambulance and have it on the street within two minutes from the time the call is sent in. During the hours of the day when calls are expected a team is kept harnessed on the floor and can be put on the street as soon as the doors are opened.

While I cannot be one of the Alumni, I hope I may claim a feeling of comradeship with you in the noble work in which the City Hospital is engaged.

THE PRESIDENT: The Massachusetts General Hospital, venerable with age, clothed about with noble traditions, crowded with hallowed associations, a haven of help and comfort for nearly a century, the cradle of generations of students and physicians. Its history is an inspiration, and its existence a blessing to mankind. Its staff, past and present, composed of leaders in the profession, merits our respect and admiration, and is an honor to any community.

May the cordial relations at present existing between the Massachusetts General and the City Hospitals continue for all time!

The leading operating surgeon of New England, the friend and comrade of us all, needs no introduction to this club: Dr. M. H. Richardson.

DR. MAURICE H. RICHARDSON, in responding to the toast of the "Massachusetts General Hospital," said that he brought the cordial good wishes of the Staff of that hospital. The great work already accomplished in every department of the City Hospital has made it an institution in which we all take a professional as well as a civic pride, and none accord greater praise to the men who have achieved this work than those for whom he had the honor to speak.

It is desirable in a large community that institutions engaged in promoting similar objects should aid each other in every possible way. One prolific source of improvement is the stimulation to greater efforts and better work which an active and honorable rivalry brings forth. The example of the City Hospital has thus stimulated the Massachusetts General, and, no doubt, the City Hospital has felt from the Massachusetts General a similar impetus to good work. By this rivalry, which is a most friendly and generous one, not only both hospitals, but the community, have benefited.

It is to be hoped that these great hospitals will be more and more closely united in the promotion of the objects for which they were founded, and that to this end every means will be taken to strengthen the bond of intimacy and good fellowship now existing.

THE PRESIDENT: The largest city in the world is not represented here to-night, but the second largest is, in the person of an old friend of yours and mine, who lives there and is in touch with the leading men of the profession. I have invited him to tell us something about medical matters in Greater New York. I present Dr. John B. Walker.

DR. WALKER: *Mr. Toastmaster and Fellow Members of the Boston City Hospital Club.* — Rising from this table where I have been seated as your guest it is hardly possible for me to tell you the pleasure it is to be here and to meet so many of my old friends. I appreciate the honor, and thank you for the pleasure it affords me.

New Yorkers are always glad to return to Boston — the fount and source of their knowledge — to meet in their own city the wise men of the East and draw from them new ideas and inspirations. Ever since I left the old hospital I have remembered with ever-increasing pleasure my days of service there. I have been interested in watching its constant growth and development under the wise direction of our distinguished superintendent. Some men, intimate with hospital management in New York, say that Dr. Rowe, of Boston, has the broadest grasp of this subject, and that the Boston City Hospital is the best organized, disciplined and equipped hospital in the country. We have our large and independent surgical and medical wards; our contagious wards; a hospital by itself, unequalled; and no hospital has such grand special operating-rooms as ours. But pre-eminently above these spacious structures we look back with admiration and pride to the remarkable men who made all this material growth possible, to the men who infused into the institution their own life and attracted to it the interest necessary to nourish and sustain its growth; the names of Buckingham, Bowditch, Homans, Thorndike, Cheever and Gay flash before us, and we say, "It is to these men that we owe the education and inspiration that sent us forth fit to take a place in the ranks of the healers." It was Dr. Cheever who sped me on my way into the world. On leaving the hospital, I asked him where there was an opening and where he thought I ought to locate. He replied that he knew of no opening, that each man must make one for himself, and that he would succeed best if he located in that place where he desired most to live. And so after seeing much of many places I came by a process of natural selection to New York City.

When you first locate in New York there comes to you a very pleasant, agreeable man, the agent of the county medical society, and inquires carefully where you were graduated, whether you have been in practice, etc., and then suggests that it would be well for you to have your name on the medical register. You thank him for his kindness and he departs. When you apply to have your name put on the register you find that you must have a certificate from the Regents Board of Examiners of the University of the State of New York, and to obtain this you must pass an examination in the eight main subjects of medicine. There is no way to escape this ordeal, for the medical laws are rigid. At first it seems like an exclusive club, but, after you pass your examination, you decide it cannot be exclusive enough. When this law first went into effect, in 1891, a large number failed to pass the examinations and then went outside the State to practise, but gradually better-prepared men have come in and the law has proved most satisfactory.

Then comes the question: "Where in this great city shall I establish myself?" The answer depends, in a large measure, upon what line of work you are going to do. Some desire to go into general practice and seek an income at once. Such a man must locate in districts where the young married people abound, such districts as those west of Central Park above 72d Street, and east of the Park above 59th Street. Others, who wish to work up into a specialty, are willing to labor long in the outdoor departments of the hospitals, and to live on bread and butter, and keep themselves ready to go, at a moment's notice, anywhere to assist the eminent specialist in some operation. This assistant should establish himself in the central district (somewhere between 34th Street and 59th Street, between Madison Avenue and Sixth Avenue), where he can easily be reached; he should connect himself with one of the medical schools in a teaching capacity, where he may learn as he prepares to teach others. If you wish to learn about some special subject the best way is to write a paper on that subject for some society meeting. It will be criticised and your knowledge will be increased. You can do this there because of the several medical schools, the College of Physicians and Surgeons, Bellevue University, Polyclinic, Post-graduate and others.

A man can become acquainted with the older men, who have travelled along the same road years ago, by joining the Harvard Medical Society. This Society is made up of men who have been graduated from the Harvard Medical School and it numbers about fifty members, all of whom are always interested in each newcomer. He may further increase his acquaintance and influence by entering the Harvard Club, where he will surely meet friends among its thousand members. If one is obliged to support himself at once there are several ways open; he can try for a position as inspector on the Board of Health at $100 per month; he may secure a position on one of the outdoor departments which pay salaries to their staffs; there are several of these which pay fairly well. Again, one sometimes earns something by working for the medical journals, reporting meetings, etc. Others start quiz classes or assist in some of those already flourishing. It is reported that one of the brilliant surgeons makes nearly $10,000 a year from his most excellent quiz. It is one of the distinctive advantages of this great city that there are so many opportunities for the young physician to support himself.

Another great advantage is the wealth of material for study and research. A physician has a population of nearly five million to draw from; there are hospital accommodations of more than six thousand beds. Nearly every specialty may be studied in at least one special dispensary and several specialities have several clinics at their disposal; there are five for the eye and ear, four for obstetrics. four for throat and nose, three for cancer, three for orthopedics, two for contagious diseases, while general surgery and medicine have unlimited resources. It is this remarkable field for work that has in a large measure made possible the development of the men who have risen to be leaders of their profession.

I think I may say it is recognized that the most eminent in every business come to New York and it is as true in the medical profession as in all others. The opportunity of coming into contact with these leaders is of great value to the younger men; the young professional man in New York must realize that it is for the future stakes that he is working, that all true success is of slow growth and that sometimes haste in the beginning may destroy the chances of a future career. As Dr. Osler says, one must take care to thoroughly educate himself, and reputation will come of itself. These men achieved their success only by long years of diligent, laborious work; and what has been true in their cases will be true for others.

The Boston City Hospital Club has several representatives who are acquitting themselves with marked distinction and they are always ready to welcome the next acquisition to their ranks. In conclusion, I am sure I voice the sentiment of all present in heartily wishing for the continued success and prosperity of the Boston City Hospital Club.

THE PRESIDENT: "I suppose I must go and earn that d——d guinea," said John Hunter, on being summoned to wait upon Lord So-and-so, while engaged in making some interesting experiments. Too many physicians, even in these days, get so absorbed in their work that they neglect the business side of their profession to the detriment of themselves and of their families. They earn guineas enough, but they do not collect them, or they do not take care of them judiciously when they are collected.

We have with us this evening a gentleman who is a good friend to the physician, and a still better one to his patients, as is shown by the fact that he has built a fine hospital and presented it to the city in which he lives. He has solved the riddle of how to get and to take care of the guineas, and I am going to ask him to say a few words to us from the standpoint of a successful business man: Hon. William B. Rice, of Quincy.

HON. W. B. RICE: *Mr. President and Gentlemen of City Hospital Club* — If my friend, Burnham, who is engaged with you in your glorious work, felt some trepidation when rising to address you, how shall I, who have nothing but business to talk about, have courage to occupy any of your time? In the presence of men of your profession, one who has given most of his life to chasing that will-o'-the-wisp, the "damned guinea," referred to by your President in his kindly introduction, must hold only second place at best. I count it a great honor, therefore, to be invited to say a word on the business side of your profession.

Now, I am asked to tell you in ten minutes how to so manage your affairs that at the end of a long life of service, which I wish for you, you can look back and say, "On the whole, I have been a success; I have accumulated a competency; I have enjoyed the regard of my fellows; I have wronged no man." This presumes that, on the average, you are not naturally of a business turn of mind; that your instincts have prompted you to take up a work which does not attract because of financial rewards to be won, but because something tells you that here you can round out your life and reach the highest service to your fellowmen.

If there are any among you whose principal object in joining the ranks was to make money, they have probably thought out their plans carefully and do not wish any advice from me. Such will be attracted to the commercial side of the profession and will, perhaps, advertise some Life Elixir or other patent medicine or take out a patent on a method of breathing through the elbows — they will be sure to find some way of adding to their store faster and easier than to walk patiently and reverently in the path so well beaten out by those who have won honor and renown in your profession. Therefore, I do not talk to them.

I address the young man who has entered the profession because he loves it — because no other work will satisfy. He is determined to win a place among those whose object is to prevent the inception and spread of disease — to stay its advance, and stop suffering, and save human life, after it has gained a foothold. Such men are apt to be careless about business matters and unless they have been taught in their youth, either by precept or example, they suffer all through life by such carelessness.

A young doctor of this sort is pretty sure to have something to do. At school and college and in the hospital he has already made his mark by his zeal, his modesty and his devotion to his work; the older doctors recommend him to such patients as they cannot attend; not the most profitable practice, perhaps, but "all is fish that comes to the net" of the beginner, and he takes up the work with courage and fidelity.

Now is the time to establish correct business habits of a lifetime. If a patient is poor, worse off even than yourself, of course, you will govern your charge accordingly. The traditions of your profession have taught you that. But have a settlement. Let it be thoroughly understood whether or not you are to receive any pay, what it is to be and when it is to be paid. Then charge it carefully and collect it promptly.

From those who are able, of course, you are to have your pay. Don't hesitate to believe that your bill should be paid just as much as the grocer's, and that you cannot pay your grocer until you collect your own bills. Cowardice in this regard is fatal at the very start.

Many a man goes through life harassed by his finances, just because he has not courage to claim his own. To be sure, there are people who do not intend to pay their doctor's bills until there is something left over after paying for the gratification of every other want; but such would not pay any bill, if they could avoid it. Experience has taught them that doctors can be more easily imposed upon than any other class, unless it be the washerwoman. I do not think science has yet figured out which profession should take the prize in this respect.

You will, at the beginning, then, know what you are to receive, and you will make sure to collect it at the proper time. This done, with good health and good courage, you are reasonably sure of an income sufficient for your comfort.

Now you are getting on. Correct business methods are producing their inevitable result; you are getting ahead financially. What shall you do with the surplus? It is only a little, to be sure, but the principle of action that you adopt now in your investments will determine whether or not your growing savings shall prove a comfort and a blessing to yourself and family, strengthening you in your profession and in the opinion of your fellow-men and bringing peace and rest in your declining years, or whether your life is to be one long chaos of excitement and worry over the daily stock reports, or this or that speculation, weakening you in your professional work, and in the regard of your fellows and bringing unrest and disaster in your declining years.

(To be continued.)

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, May 2, 1898, DR. W. H. BAKER in the chair.

DR. J. B. BLAKE read a paper on

TRAUMATIC VENTRAL HERNIA.[1]

DR. KNAPP: One of the cases which Dr. Blake has spoken of I saw. I do not recall from my memory of the case whether when the case was first operated on there was a definite lesion of the muscles found.

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[1] See page 409 of the Journal.

DR. BLAKE: No; there was no lesion found.

DR. KNAPP: I remember that there was not. When I saw it afterward this protrusion above the scar was a very curious thing and distinctly puzzling. It seemed to me the only interpretation which I could give of it was some injury of some of the intercostal nerve fibres causing partial paresis of the muscle and a yielding of the muscle. The voluntary contractions seemed to be distinctly weaker than those of the other side, and the slight changes in the electrical reactions seemed to corroborate that belief, that there had been a traumatic neuritis affecting some of the branches only which supplied the abdominal muscle. Such a condition seemed to me at the time to be a most curious and rare thing. I can recall only one case in my experience of at all a similar character where there was a neuralgia limited to the ilio-inguinal nerve of one side following a blow upon the back. But certainly the isolated lesions of these smaller nerves in the back and abdomen are, so far as my experience goes and so far as anything I have encountered in the literature, exceedingly rare. The case impressed me as being one of unusual interest, and I am very glad Dr. Blake has put it upon record.

DR. BLAKE: I have been unable to find any case at all like the second one to which Dr. Knapp referred. The cases of rupture of the muscle without external wound are rare enough, but cases of apparent rupture due to nerve lesions, as far as I can find, have not been reported.

DR. E. W. TAYLOR read a paper on

TUMORS OF THE FRONTAL LOBES.[2]

DR. KNAPP: I think it is a little unfortunate to use the expression "tumors of the frontal lobes" in this connection, because the frontal lobe, anatomically, extends to the fissure of Rolando. The tumors which are of especial interest in this connection are the tumors of the prefrontal region, tumors which do not extend back as far as the precentral sulcus. Tumors extending as far as the ascending frontal and the ends of the third frontal convolutions immediately adjacent to the precentral sulcus naturally come under the head of tumors of the central region with definite and well-characterized focal symptoms, so that it seems to me that we should speak especially of tumors of the prefrontal region rather than of the frontal lobe, which might include anything as far back as the fissure of Rolando.

Dr. Taylor's case is instructive and interesting. I think the moral of it is that definite epileptic attacks — it seems to me the description of a part of the attacks which this patient had were epileptic rather than hysterical — in a man over thirty with no syphilitic history should awaken in our minds the suspicion of some grave cerebral disorder and should exclude uncomplicated neurasthenia. The determination of the true nature of these attacks, however, is sometimes a very difficult matter.

I recall a case which I saw a number of years ago which proved to be an infiltrating glioma in the central region in a Polish Jew. I was called to see him originally with some vague and untrustworthy history of attacks of loss of consciousness and with a complaint of very frequent attacks which he described in vague terms as affecting his right toes and right foot. He would come into my office or I would see him at his house and he would tell me he was then suffering from an attack. The most careful examination at the time would give no indication whatever of any movements of the toes, of any blunting of the sensibility, of any disturbance of consciousness, of any dilatation of the pupils, of any change in color or even scarcely any change in the pulse, nothing whatever that could be seen which could be regarded as an attack, yet the man would persistently complain of these attacks, and his complaint and that condition lasted several months. Later on he complained more frequently of the attacks, and slight twitchings of the toes could be perceived. There was finally a beginning paresis of the right foot. He dragged the foot more or less in walking, and after a period of two or three years he developed headaches and hemiplegia and at the very end of his life optic neuritis.

I think another deduction to be drawn from Dr. Taylor's case is not to depend upon one examination of the eye in cases of suspected tumor. I have followed up several cases where almost until the last week or two of life there had been no discoverable changes in the eye, but finally in the last week distinct neuritis had developed.

Within a few months Tambroni and Obici have reported a case not unlike Dr. Taylor's in one respect, in that the initial symptoms — it was a case of tumor of the frontal lobe — were almost wholly neuralgic, although that was associated with headache as well, with grave neurasthenia followed by gradually increasing physical weakness and some increased impressionability, finally more or less progressive mental failure with definite and distinctive symptoms of brain tumor.

This whole question of tumors of the prefrontal region is a most profoundly interesting one, especially since the recent speculative theories of Flechsig. Dr. Starr, I think, stands very nearly alone in claiming that the psychical disturbances are of great localizing value, and on the strength of a very happy diagnosis he has published a case which he thinks is the first one where operative interference was guided by the localizing symptom of the early mental failure. Dr. Starr's theory has interested me somewhat, because several years before Dr. Starr's paper appeared I published a case of tumor in the prefrontal region where the focal diagnosis had been definitely made, aided in part, I admit, by the presence of the psychical failure, and where the question of operative procedure had been raised. I saw the case in consultation with the late Dr. Doe, and was asked to see it with especial reference to the possibility of operating. The focal diagnosis was made and under other circumstances I should have advised operating excepting that the woman had a dilated and exceedingly weak heart, and of course any operative procedure would have been promptly fatal.

In the great majority of cases of brain tumor, however, I believe that there is some lowering of the previous mental standard of the patient, but I do not think that the prefrontal region is by any means the exclusive seat of the psychical process. I have certainly seen very marked dementia in a case of tumor of the corpus callosum. I have seen marked and progressive dementia simulating general paralysis and leading to that diagnosis in a case of tumor of the temporal lobe, but, nevertheless, in spite of the somewhat visionary basis of the hypothesis of Flechsig, I think there is possibly some reason to believe with him that the prefrontal region has an influence upon some of the ideas of personality and has something to do with the higher intellectual processes.

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[2] See page 405 of the Journal.

Dr. Taylor has spoken somewhat slightingly perhaps of the experimental research upon animals. I think the recent investigation of Bianchi upon the brains of monkeys and dogs is of a careful character and is of a certain value, when associated with the clinical observations upon men, in upholding the claim which Bianchi has brought forward, that the removal of both frontal lobes does tend to a certain disaggregation of personality, as he calls it. The theories of Munk and Luciani, that the back muscles are represented in the prefrontal regions, lack support, more especially from the fact that the representation of the trunk and dorsal muscles has been found by Horsley, Beevor and other English observers to be upon the mesial aspect of the brain. Williamson in an analysis of 50 cases of lesions of the prefrontal lobes, 46 of which were tumor, and four abscess, pointed out that a unilateral or predominantly unilateral disturbance of vision or of the optic nerve and unilateral affections of smell were of some value. I believe Dr. Taylor did not mention anything in regard to this patient's sense of smell.

Dr. Taylor: I am afraid that was not examined.

Dr. Knapp: The stiffness of the muscles of the neck of which Dr. Taylor speaks I have seen in only one case, which is now under my observation, where for a time there was a suspicion of meningitis and for two or three days a marked stiffness of the muscles of the neck. The evident proof that there was no meningitis is that the case is still alive and getting on very comfortably. The diagnosis cannot be confirmed, but in all probability it is a tubercular growth in the prefrontal region of the left side.

Another factor of very distinct importance which Dr. Taylor has not spoken of at all is the so-called invasion symptoms as the tumor increases in size and grows backwards toward the precentral sulcus, the appearance of either Jacksonian epilepsy or of paresis of the various centres invaded and in tumors of the left prefrontal the beginning of any aphasic disturbances. From these invasion symptoms we may certainly suspect a tumor in the prefrontal region before the focal symptoms appear, but the invasion symptoms seem to me to afford very distinct corroboration of our earlier suspicions.

I think, therefore, while we cannot make a diagnosis of tumors of the prefrontal lobe from the presence of intellectual disturbance, nevertheless that such tumors are very apt to be accompanied by intellectual disturbance, and it also seems to me that we should study these cases with more care, to determine just what form of intellectual disturbance may be present, to see if in any way the hypothesis of Flechsig may be borne out in regard to the intellectual centre there, whether it is more especially a disturbance of personality or whether it be intellectual disturbance of some other sort. The reported cases, many of them, are exceedingly vague upon this point.

Dr. Thomas: I am very glad Dr. Knapp spoke of the invasion symptoms in tumors. I think usually there has not been enough attention paid to them. One point in addition to that, which really belongs in the same class of symptoms, is that while the convulsions may be general, in case of tumor of the brain where they are excited by indirect pressure upon certain centres, yet the point at which the convulsion starts, and the order in which it spreads is, as a rule, unlike that in idiopathic convulsions, although this may not be so in every convulsion. If we find the successive involvement of different portions of the body in the order of the anatomical arrangement of motor areas in the brain we have an important symptom pointing to organic disease of the brain, rather than to so-called idiopathic epilepsy.

Dr. Nichols: Some years ago I had a patient whose only symptom was a persistent severe pain in the frontal region. The man was ill about two years, under my care the last two or three months, and no diagnosis was made from the fact that there was no pathognomonic sign. The character, severity and circumscribed area of the pain suggested specific pachymeningitis, although no history of specific trouble could be obtained. At the autopsy a gliomatous tumor was found about the size of a hen's egg of which there had been no previous suspicion. Its location was in the central frontal region. These cases serve to illustrate, I think, that in many lesions usually accompanied by very pronounced and distinct pathognomonic signs there may at times be no characteristic symptoms whatever. Other instances of analogous exceptions might be cited, as a case of acute peritonitis without any pain whatsoever, running a fatal course and demonstrated by an autopsy, although our ordinary conception of peritonitis is a lesion attended with the severest pain. Likewise with regard to strangulated inguinal hernia. I have attended a fatal case occurring in a very stout woman where not only no hernia could be found prior to the autopsy but no tumor of any character, nor any circumscribed focal pain. In Dr. Taylor's case he speaks of the convulsive movements as being observed with accuracy. He means, as I infer, comparative accuracy by one of the laity. I cannot help thinking, however, that if these attacks had been seen by a competent physician perhaps something more characteristic would have been elicited in respect to the convulsive movements or some of the attending symptoms, which would have pointed perhaps more definitely to the character of the lesion.

Dr. Courtney: I was fortunate enough to be present at the autopsy in this case and it seemed to me that the absence of invasion symptoms on the part of the motor apparatus was in all probability due to the direction in which this tumor had its main growth, namely, toward the mesial aspect of the brain rather than backward. It seems to me, further, that we are totally unjustified in saying that any brain tumor runs its entire course without symptoms. In the reported cases there is an obvious lack not only of historical data, but also of thorough physical exploration, including examination of the eye-grounds. As such cases come principally from the asylums and occur among persons who are the victims of some marked psychosis, I am inclined to think that physical signs which would at once attract the attention of a neurologist entirely escape the observation of the alienist. I should like to ask Dr. Knapp how often he has observed the condition of "Witzelsucht" in tumors of the prefrontal region?

Dr. Knapp replied that he did not remember ever to have observed it.

Dr. Taylor: In regard to the experimental method, I did not mean to cast any aspersions upon it. It is one of our main sources of information. In this particular regard I have no doubt Dr. Knapp and I should agree, that it may be possible to carry it too far. In general it seems to me the tendency has been to draw rather too broad conclusions from purely animal experimentation.

In regard to the invasion symptoms, of course the interesting thing about this particular tumor was that there were no invasion symptoms.

In regard to the observation of the convulsions, these convulsions were observed by a medical student, a brother of the patient, in his third year. They are marvellously well observed. He made for example the observation I have described of the character of the convulsions, and the relation of the disturbance of consciousness to the convulsive movements. It is almost word for word what Oppenheim has described as characteristic. It was purely a matter of observation on his part and not knowledge.

What I should draw chief attention to is the deceptive character of these innumerable so-called neurasthenic symptoms. The whole attitude of the man was that of a neurasthenic. I naturally did not mean to say that the epileptiform convulsions were neurasthenic. The general grouping of the symptoms in the case seemed so interesting and its final localization so important as to make the case worth reporting at considerable length.

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AMERICAN NEUROLOGICAL ASSOCIATION.

(Concluded from No. 16, p. 396.)

Twenty-fourth Annual Meeting held at the New York Academy of Medicine, May 26, 27 and 28, 1898.

LOCOMOTOR ATAXIA WITH HEPATIC CRISES.

Dr. Wm. C. Krauss, of Buffalo, reported a case of locomotor ataxia in a woman aged forty-three years, who for ten years had periodic paroxysmal attacks of jaundice with intense hepatalgia, which the writer designated "hepatic crises." The patient had the lancinating pains in her limbs, with myosis, Argyll-Robertson pupil, loss of tendon reflexes, marked ataxic gait and inco-ordination. Every four or five weeks she had attacks of deep jaundice with excruciating pain over the liver, clay-colored stools and presence of bile pigment in the urine. These attacks would last two to three days, then disappear for a month. The hepatic area was not enlarged. No gall-stones were found in the feces. No rise of temperature and the patient died in one of these attacks.

The autopsy revealed the characteristic changes of locomotor ataxia in the spinal cord and spinal ganglia. The liver weighed three and one-quarter pounds and showed no new growth of any kind. The gall-bladder was filled with bile but no gall-stones were found. The ductus choledochus and accessory ducts were unobstructed. The microscopical examination showed an early stage of chronic congestion of the liver.

Dr. Osler thought that the pain and jaundice accompanying the attacks would lead one to suspect the presence of gall-stones.

Dr. Krauss replied that the feces were examined almost every day, but no traces of gall-stones were ever found.

THE NOSOLOGY OF THE SO-CALLED FUNCTIONAL DISEASES.

This was the title of a paper by **Drs. Joseph Collins** and **Joseph Fraenkel**, of New York.

The authors endeavored to prove that the various so-called functional nervous disorders were primarily conditioned through the sympathetic system, and were the result of a trophic change.

Dr. Dercum said he did not think we had a scintilla of evidence that the sympathetic system played the extensive rôle assigned to it by the readers of the paper.

D. Ira Van Gieson considered the sympathetic as that part of the nervous system which covers the whole question of food supply. He thought that the authors had attempted to show that in certain diseases, there are changes in the higher spheres of the nervous system produced by lesions of the sympathethic, either functional or organic. which have deprived those higher centres of their food supply.

Dr. Mills thought the authors of the paper had made the mistake so often made of attributing to a certain portion of the nervous system diseases which largely manifest themselves through such portion. They had done little more than to assert that certain diseases are traceable to the sympathetic nervous system. To a certain extent, the paper was a step backward. We have quite as much evidence in favor of designating hysteria a cerebral or psychic disease as a disease of the sympathetic nervous system. He felt that the authors had failed to clear up the mystery which surrounds our knowledge of the diseases of this system of nerves.

Dr. Sachs said we are not in entire ignorance of the functions of the sympathetic nervous system. We know that certain pupillary and visceral symptoms, as well as certain vasomotor and trophic symptoms, have their origin there. He did not think the writers of the paper would be able to prove that such symptoms occurred more frequently in hysteria or neurasthenia or acromegaly than they do in diseases which we positively know are of cerebro-spinal origin.

Dr. Osler regarded the paper as a retrograde step to again bring forward this old defunct theory, still, he said, it only goes to show that we think the same thoughts that our fathers thought.

Dr. J. J. Putnam said that while he did not regard the sympathetic system as an essential factor in the causation of disease, he did regard it as a very important factor in the maintenance of certain diseased conditions.

Dr. Collins, in closing the discussion, said he did not wish to maintain that any of the diseases he had mentioned were diseases of the sympathetic system. He only maintained that they were nutritional diseases, and that the sympathetic nervous system controls nutrition from beginning to end.

FAMILY PERIODIC PARALYSIS.

This was the title of a paper by **Dr. E. W. Taylor**, of Boston.

The condition consists of periodic attacks at varying intervals of a complete flaccid paralysis of the muscles of the body and extremities. Associated with this paralysis is a temporary quantitative diminution to complete loss of electrical excitability of muscles and nerves; also a loss of the reflexes.

During such an attack consciousness and sensation are unaffected. The patient's condition between attacks is normal. The condition is clearly a family disease. The cases reported by Taylor occurred in a family in which for five generations there have been eleven cases. The two persons studied were brother and sister, both of whom suffer from attacks of the above type.

The brother, chiefly studied, presents a perfectly typical variety of the affection. Etiology is lacking excepting that the attacks come on preferably after exercise, followed by rest. Pathological anatomy is as yet vague.

Dr. Sinkler said he wished to place on record a case that came under his observation. The patient was a man with facial paralysis who gave a history of five previous attacks in the course of ten years. Each of the attacks lasted several weeks and ended in complete recovery.

Dr. Dana had seen a number of cases of periodic paralysis, none, however, of the family type. He had come to the conclusion that while some of them were cases of recurrent poliomyelitis, the majority were purely hysterical in character. The family type of this disorder was certainly rare, and perhaps a little light might be thrown upon the subject by studying allied conditions. He had seen a number of patients who had informed him that when first waking up in the morning they were unable to move for half an hour or even longer, suffering from paralysis and a certain amount of numbness. The ordinary types of morning paralysis seem to be the result of some toxic condition, associated with an asthenic condition of the nervous system.

Dr. Collins said he had observed three cases of periodic paralysis, none, however, of the family type.

THE SURGERY AND PATHOLOGY OF THE GASSERIAN GANGLION.

This was a joint contribution by **Drs. W. W. Keen** and **W. G. Spiller**, of Philadelphia.

Dr. Keen has operated on the ganglion in eleven cases. He believes that the removal of the ganglion is almost invariably attended with the relief of pain; that it is hardly practicable to attempt to preserve the motor root; that it is better to remove the whole rather than only a part of the ganglion; and that, as the removal of the ganglion is always a serious undertaking, it is best to do a peripheral operation first, unless the pain is widespread and involves all three branches of the nerve. He thinks that peripheral operations should be done when the disease has existed for three or four months, and has not been cured by drugs. The microscopical examination by Dr. Spiller of seven ganglia removed by Dr. Keen showed intense alteration of the ganglia, involving axis cylinders, myelin sheaths, blood-vessels and the connective tissue. In one case in which the entire ganglion with its motor and sensory roots was removed, these roots were found to be normal, although the second and third branches of the nerve near the ganglion were greatly degenerated. The writers believe that trifacial neuralgia is primarily due to disease of the peripheral branches of the nerve and that the ganglion is probably secondarily involved. In a case in which only the supraorbital and infraorbital nerves were removed, these nerves were found much degenerated.

Dr. Mills was inclined to the opinion that tic douloureux in the typical form in which we commonly see it was a degenerative process of the peripheral sensory neuron. He did not regard it as neuritis, in the ordinary sense of the term.

Dr. Dana agreed with Dr. Spiller as to the pathology of this condition. He believed that the specimens and investigations confirmed the views of Dr. Putnam and himself, that in most of these cases we have to deal with a degeneration of the nerve. Tic douloureux is a disease not only of the nerve but of the whole individual. In quite a number it is a self-limited disease. He was opposed, as a rule, to surgical interference.

Dr. Van Gieson had found in these cases an obliterative endarteritis of the vessels accompanying the nerves and a proliferation of the nerve-cells.

Dr. Keen, in closing, said the question was purely a clinical one. He did not agree with Dr. Dana regarding the unsatisfactory results of operative interference in these cases; his own experience had convinced him to the contrary.

Dr. Spiller concluded that this disease was usually a peripheral one. If the lesion was primarily in the ganglion, it was difficult to understand why the peripheral branch of the nerve was so highly diseased while the central branch was normal.

THIRD DAY. — SATURDAY.

HUNTINGTON'S CHOREA.

Dr. Frank K. Hallock, of Cromwell, read a paper on this subject, and presented the report of a case which showed clearly the course and order of development of the degenerative process, the dementia and chorea paralleling each other as the degeneration progressed. The conclusions reached were: (1) That it is a progressive degenerative disease of the brain, fundamentally different from ordinary or Sydenham's chorea. (2) That the chief physical manifestations of the disease are the choreiform movements which are of secondary importance, merely indicating the nature of the cerebral lesion. (3) That the character of the mental symptoms can best be described by the term dementia. (4) If the above assertions can be verified, then the disorder should be classed with such diseases as dementia paralytica and dementia senilis.

LOCALIZATION OF THE SYMPATHETIC NERVE IN THE BRAIN AND SPINAL CORD.

This was the title of a paper read by **Dr. B. Onuf**, of New York. It consisted of a report of experimental researches with contributions to the physiology of the sympathetic.

Discussion by Drs. Spiller, Booth, Langdon and Collins.

LONG REMISSIONS IN EPILEPSY AND THEIR BEARING ON PROGNOSIS.

This was the title of a paper by **Dr. Wharton Sinkler**, of Philadelphia.

The writer recorded twenty-four cases of idiopathic epilepsy in which there had been remissions of the attacks of periods varying from two to twenty-nine years. In none of these cases was trephining done. In a few of these cases the freedom from attacks was attributable to the long-continued use of remedies, but in the majority of cases as soon as the attacks were arrested, all medication was stopped, and therefore the relief from the seizures could not be ascribed to treatment.

In his opinion the conclusion to be drawn from a study of the twenty-four cases presented is, that epilepsy should be regarded as an incurable disease. It is encouraging, however, to find from the long intervals which have occurred in these cases that the disease is amenable to treatment, and that a sufferer from epilepsy may look forward to the probability of long remissions in which he is as competent to fill his place in the world as if he had never had the disease.

REGENERATION OF NERVE FIBRES IN THE CENTRAL NERVOUS SYSTEM.

This was a paper by Dr. W. L. Worcester, of Danvers.

In an old case of necrosis of the right corpora quadrigemina he found in the degenerated portion several bundles of contorted fibres, entirely dissimilar to any normal structure in this region, and resembling an amputation neuroma. They seemed to originate from the tegmentum above the red nucleus. He believed them to be an outgrowth of newly-formed fibres from neurons that had been interrupted by the lesion.

THE NEUROLOGICAL ASPECT OF PUBLIC SCHOOL EDUCATION.

This was the title of a paper by Dr. John Punton, of Kansas City.

He believed that serious defects still exist in the routine methods of public school education and training of the young which is attested by not only the general public but also the teachers and officers of the schools themselves.

What is necessary to be done, nay, even demanded of us, is to fix certain definite standards of weights and measurements for every age and height and any pupil found to be above or below this standard should be treated accordingly. In almost every city of the world anthropometrical investigations have now been made and the unanimous verdict has been reached that the mental output of the pupils is directly related to their height, weight and physical measurements and that there is a physical basis for precocity on the one hand and mental dulness on the other.

The following officers were elected for the ensuing year: President, Dr. J. Hendrie Lloyd, of Philadelphia; Vice-Presidents, Dr. Frank R. Fry, of St. Louis, Dr. Henry Hun, of Albany; Secretary and Treasurer, Dr. G. M. Hammond, of New York; Councillors, Dr. F. X. Dercum, of Philadelphia, Dr. G. L. Walton, of Boston.

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THE NEW YORK STATE MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, October 18–20, 1898.

The Fifteenth Annual Meeting of the New York State Medical Association was held at the Mott Memorial Hall, New York, on October 18th, 19th and 20th, Dr. Douglas Ayres, of Fort Plain, Montgomery County, presiding. In the course of a paper on "State Examinations of Milk for Tuberculosis," Dr. F. O. Donohue, of Onondaga County, said: "It is not contended that if every tuberculous cow was slaughtered the disease would be eradicated, but this does not change the general principle that so potent a scourge should be dealt with and strenuous efforts put forth to annihilate the disease in dairy cattle. Examinations made in certain sections of the State revealed so extensive a prevalence of tuberculosis among cattle as to create a very material alarm in the minds of dairy farmers. It is doubtless owing to this hostility in a large measure that appropriations were withheld by the present administration for the continuance of the work. The law is still in force and the commissioners are drawing their salaries, but for the past two years the work has been at a standstill. It must and will be taken up again, for civilization will demand that the product of the dairy shall be free from the germs of a lingering infectious disease, the most destructive that afflicts humanity."

A number of delegates from the medical societies of neighboring States were received, and several of them presented papers. The Connecticut Medical Society sent a communication asking the co-operation of the Association in a protest against proposed anti-vivisection legislation. The protest, which was approved, declared: "It is the glory of the medical science of the century that the average of human life has been increased by more than ten years, and we assert that this has been brought about in a very great measure by the study of physiological and biological processes as exemplified in and investigated by experiments upon animals. We regard these experiments to be as completely justified as is the employment of animal food to sustain life."

Dr. F. H. Wiggin read the report of the Committee on the Abuse of Medical Charities which had been appointed to represent the Association in the efforts made by various medical societies in New York, Kings, Queens, and Richmond Counties to correct hospital and dispensary abuses. It detailed the steps taken to put all such institutions under the control of the State Board of Charities, and the final failure in the Assembly of the bill agreed upon. The committee was discharged and a new one appointed, with Dr. Wickes Washburn, chairman. Two or three papers on this subject were read, one of them being by Dr. Washburn. In it he strongly advocated the bill mentioned and in concluding said: "This bill would, I believe, relieve the tax-payers in reducing pauperism, and in the end would, I hope, help to a recognition of what I believe to be a fact that mendicancy is a disease and requires treatment as such. This cannot be done except by co-operation, nor co-operation be had without legislation."

Ever since the organization of the Association it has been the custom to select the president every alternate year from the members of the Fifth District Branch, which embraces the southeastern section of the State, and, on account of the large cities included within its territory, is much larger than any of the others. This year Dr. Joseph D. Bryant, of New York, was elected President, and Drs. James G. Hunt, of Utica, Douglas C. Moriarta, of Saratoga Springs, Frank D. Reese, of Cortland, and William M. Bemus, of Jamestown, Vice-presidents; Dr. E. D. Ferguson, of Troy, was re-elected Treasurer. The Association dinner was held at the Manhattan Hotel on the evening of October 19th. Dr. Ferguson acted as toastmaster, and among the speakers were Dr. W. B. Atkinson, of Philadelphia, Secretary of the American Medical Association, W. Guy Carleton, Esq., Dr. E. E. Holt, of Portland, Me., and Dr. W. Murray Weldman, of Reading, Penn. The most noteworthy feature of the meeting was an elaborate discussion on Intestinal Obstruction, extending over a considerable portion of the second and third days' proceedings, a report of which will be published in the Journal.

Recent Literature.

An American Text-Book of Genito-Urinary Diseases, Syphilis and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., and W. A. Hardaway, A.M., M.D. Illustrated with 300 engravings and 20 full-page colored plates. Philadelphia: W. B. Saunders. 1898. Pp. 1229.

It is a distinctly American habit to unite the somewhat incongruous specialities of genito-urinary diseases and diseases of the skin in the practice of one man. So many specialists have grown up practising in both of these two distinctly separate fields that it is no wonder that now and then books have appeared which have tried to embrace the range of practice thus somewhat loosely and, as it were, accidentally combined. While it is plain that syphilis is the connecting bond between these two branches of practice, combining as it does local genital lesions with general skin manifestations, it does not afford a sufficient excuse for continuing this, as it were, Siamese union. Seriously, the time would seem to have arrived when, in order that each one of these subjects should be adequately considered, it should be separated from the other and treated as a wholly distinct specialty.

In the present volume the attempt to get this wide range of subjects compressed between two covers has necessitated the somewhat superficial treatment of some matters, but, upon the whole, the condensation has been well done. The book is one, however, to serve as a guide for students and beginners rather than as a reference book for advanced students of the subject who seek the elucidation of abstruse points.

The chapter on the Ureter is perhaps the most interesting in the genito-urinary portion of the book. This is a subject in which much recent advance has been made, and the various surgical and experimental investigations by which our knowledge has been pushed forward are clearly and adequately set forth.

The chapter on Diseases of the Prostate is an interesting one. In the consideration of prostatic hypertrophy considerable special pleading in favor of the operation of castration is indulged in. No attempt is made to draw any conclusions as to the method of operation suitable to different forms of enlargement, and yet in a given case the careful study of the direction that the hypertrophy has taken is most important in determining the method of relief. Alexander's operation through the perineum aided by suprapubic incision, which has rendered such good service in his hands, is not mentioned.

The chapters on Syphilis and Skin Diseases are for the most part well-written and compact statements of our knowledge on these subjects. The illustrations of various skin lesions will assist beginners in getting a clearer impression of the conditions than could be obtained from any verbal description alone.

The book is necessarily large and somewhat unwieldy, but this is its misfortune and not its fault. It can be safely recommended to students, who will get much assistance from it.

Prof. A. Jacobi, M.D., LL.D. — At the recent commencement of Ann Arbor University, Ann Arbor, Mich., the degree of LL.D. was conferred on Prof. Abram Jacobi, of New York.

THE BOSTON

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VIRCHOW'S HUXLEY LECTURE.

A perusal of Virchow's Huxley lecture, delivered at the opening of the Charing Cross Hospital Medical School, seems to suggest that the inspiration to be derived from great men of science who have passed beyond their productive period. comes from their personality and from their earlier association with great forward movements and the struggles incidental thereto rather than from what they may say on special occasions. This distinguished pathologist has in his life spanned the developmental period of modern medical science, and even if he had not taken such a prominent part in its evolution, the very fact of his long period of activity and his venerable age graced with such versatile powers should be sufficient to arouse the enthusiasm of a student body.

A history of the progress of medicine, while it may be of surpassing interest to one who has long marched at the head of the column and has now stepped aside to let the procession pass before him, does not afford that pleasure to those still in the ranks and pushing actively forward. Hence we may pass by what he says concerning cellular pathology. The principles reviewed by him which relate to the cell as the visible unit of life, which make the individual a kind of "social mechanism" composed of these units, and which assert the origin of all cells from pre-existing cells. are so deeply imbedded in all text-books of the present time that the student is probably not aware that fundamentally different views were once dominant. The emphasis which Virchow lays upon the absence of any essential differences between human and animal life and upon pathology as only a branch of biology is in full accord with his whole life-work as well as with the practice of to-day which tends more and more to the exploiting of animal life as a storehouse of therapeutic forces and as a means of explaining physiological and pathological processes.

It is a fortunate disposition of our day to give much weight or at least a wide publicity to the occasional deliverances of great men upon problems which are working changes at the present time and which are likely to cast their light or their shadow far into the future. We are therefore more than eager to listen to Virchow's informal statements upon the medical problem of the present and future — parasitism. It has not been his lot to share actively in the triumphs which have been gained during the past twenty years in this special domain. Nor have his pupils made any noteworthy contributions, probably owing to the necessity for a division of labor which resulted in the establishment of special bacteriological and hygienic institutes. His position has been that of a wholesome, not infrequently adverse critic, and in the present address the critical tone prevails. While giving credit to etiological studies, he does not seem to realize that the discoveries in bacteriology are destined to revolutionize pathology as much as did his doctrine of cellular pathology in the past. These discoveries have converted what was little more than a descriptive study into one dealing with forces and endeavoring to harness those forces in the interest of prophylaxis and therapeutics. He quite overstates the tendency to, and the results of, generalizations concerning the bacterial origin of infectious diseases. The blame for much vague generalization must be laid at the door of medical publicists who are not themselves investigators, and of practitioners who have overlooked the reservations of the experimenter and have moulded the facts to their own views and needs. Nor has the number of false "discoveries" been so large as Virchow would have us believe, when we take into consideration the great activity in this field and the multiplying opportunities for prompt and often irresponsible publication. His treatment of antitoxins is dismissed with one unintelligible statement: "The homeopathic notion that toxin and antitoxin are one and the same seems so foreign to our biological ideas that very many experimental and practical proofs will be required before it can be admitted into the creed of the future." This homeopathic notion is held by a very few and is discredited by all exact information we possess. It is evident that there is a strong affinity of toxin and antitoxin for one another, but this affinity suggests opposite rather than like. In his own special field of tumors Virchow says nothing that would lead us to believe that he regarded tumor formation as a function of parasites. Nor does he favor the universal application of the more dominant theory that tumors arise from tissue elements which through some agency find themselves in abnormal situations.

Aside from certain minor defects, incidental to Virchow's critical attitude, his statement upon the subject of parasitism deserves the attention of all who are either endeavoring to enrich our knowledge on this subject or to use its doctrines and theories in dealing with disease. Specially commendable is his statement that to produce an infectious disease not only the bacteria or protozoa are necessary, but also a certain behavior of the organs and tissues of the host. It is this behavior, which, figuring under the terms immunity and predisposition, forms the most difficult and most urgent biological problem of the future.

CHRISTIAN SCIENCE AND DEATH.

The very recent death of Harold Frederic, the clever novelist and widely-known London correspondent of the *New York Times*, from heart disease, for which he had, until a few days before his death, received "absent treatment" from a certain Mrs. Mills, a Christian Scientist, has attracted very general attention.

It is reported that at the inquest, which was adjourned till Wednesday, October 26th, Mr. Frederic's daughter Ruth said her father did not believe in doctors. She added that it was with his consent, but under the influence of others, that Mrs. Mills, a Christian Scientist, was summoned to attend.

Kate Lyon, a member of the Frederic household, testified that the deceased had asked her to call in Mrs. Mills, and the latter came to the house and expounded the system followed by the Christian Scientists. On the following day Mr. Frederic dismissed the doctors who had been in attendance on him.

Most of Mrs. Mills's treatment, continued the witness, was what was known as "absent treatment." At the request of friends of the sick man, the doctors were again summoned, but the patient informed them that when they had previously been attending him he had not followed their directions.

During this same month of October, the death of another gentleman of considerable education and social position, Major Cecil Lester, Instructor at the Sandhurst Royal Military College, occurred in England whilst under the "absent" and present treatment of another female Christian Scientist, a Mrs. Grant; this case has also attracted much attention, and is the subject of an editorial in the *Lancet* of October 15th, under the title of unchristian nescience.

From the medical science point of view, the two cases exhibit important differences; from the Christian Science point of view they were alike fit for the practice of absent treatment by persons who knew nothing whatever of the diseases from which the patients suffered, and who evidently considered this a detail of no consequence.

In each case there was an inquest which verified the diagnosis and justified the treatment and prognosis of the medical men originally summoned to the patients.

Frederic was a self-educated, self-made man, with some of the contempt for, or impatience with, the conservative experience of the past which that class of man is apt to entertain. He was of fine physique, and died, at the age of forty-two, from cardiac and other complications supervening upon a previous attack of acute rheumatism. The post-mortem examination established the fact that with what medical science would call proper treatment, he would now be alive with an excellent chance for ultimate recovery of good health.

Major Lester suffered from tuberculous peritonitis. His physicians told the family there was little, if any, hope of his recovery, but that much might be done to alleviate his discomforts. Upon this Mrs. Grant was telegraphed to, and she commenced her treatment at once, before seeing the patient, "by what she should call taking up the right thought of the omnipotence and love of God."

In Frederic's case, it was largely the patient himself who insisted upon Christian Science, and secretly neglected other treatment when originally provided. In Major Lester's case it was the friends who, learning the verdict of the physicians, cherished the "rational and reasonable hope" that there might be something in the Christian Science treatment which would lead to recovery. At the inquest on this latter case, the jury added to their verdict riders expressing their entire satisfaction with the treatment and act on of the physicians, and "their sense of abhorrence at the so-called treatment of the deceased by Mrs. Grant, as representing the Christian Scientist Society, in not using material means for the alleviation of his suffering."

The contemplation of this sufferer's death-bed leads the *Lancet* "to pass briefly in review the reasons given by the exponent of the Christian Science treatment for the hope that is in Christian Science treatment — an excellent and taking phrase, but surely a misnomer from beginning to end. Mrs. Grant told the jury that she gave no material remedy to alleviate the pain. Where was the treatment? Mrs. Grant told the jury that she had no experience in the treatment of peritonitis; yet she commenced her treatment directly she got the telegram and before she had seen the patient. Where was the science? Mrs. Grant, 'taking up the right thought of the omnipotence and love of God,' told the jury that she did not believe that suffering was sent by God, and she contended that Jesus Christ never sent the sick to physicians. If the agony at Calvary for man's redemption was a God-sent reality, and if the Miraculous Healer told the Pharisees that 'they that be whole need not a physician, but they that are sick,' where is the Christianity of the Christian Scientist?

"Though sufficiently vital to demand notice we have no desire here to labor this aspect of the question. We feel it rather to be our duty, our solemn duty, to warn Christian Scientists of the grave responsibility which they incur in regard to the health and lives of their fellow-beings. We must point out that their methods of so-called treatment are ignorant devices, spurious in themselves and altogether unscientific and opposed to common-sense. The Christian Scientist talks as if his (merely human) activities were set in motion and pervaded by an atmosphere of divine potentialities. In an almost flattering way he, as it were, 'stands in' with God, or, as Coroner Roumieu bluntly put it at the inquest, he 'tries to usurp the special power which Christ had.' We feel it, further, to be our duty to point out that apart from evils which may result to individual members of the community from it, the Christian Science treatment is neither more nor less than a *fin-de siècle* fad, a drawing-room cult, and that it is the counterpart of the culpable negligence which has brought the peculiar people of the less educated classes within the range and operation of the criminal law of the country."

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MEDICAL NOTES.

Sunstroke in October. — A death from sunstroke occurred in the first week of this month in Akron, Ohio.

The Grieg Smith Memorial. — The Grieg Smith Memorial, the new operating theatre at the Bristol (England) Royal Infirmary, was formally opened September 30th, by Sir William MacCormac, president of the Royal College of Surgeons.

The Medical Department of the University of California. — The new building of the Medical Department of the University of California, at the corner of First and Parnassus Avenues, south of Golden Gate Park, San Francisco, was opened on Saturday, October 22d, with appropriate exercises.

Precautions against the Importation of Leprosy from Hawaii. — The California State Board of Health has appointed Dr. C. A. Ruggles, president of the board, to visit the Hawaiian Islands, to learn the extent of the presence of leprosy and report measures to prevent its introduction into California.

Courtesy and Anti-vivisection.— According to the *Lancet*, during the course of the complimentary dinner that the medical profession of Great Britain and Ireland tendered Professor Virchow on the occasion of his recent visit to England, an anonymous telegram was handed to the illustrious guest, containing the following words: "Get thee hence, vile vivisector! England spurns thee!"

The Filth of Havana. — Dr. W. F. Brunner, sanitary inspector of the Marine-Hospital Service, has made his first report from Havana since the war began. He says that the city is even more filthy than it was before, if such a thing can be imagined. There is not a great deal of yellow fever, simply because there is but little material for the disease to feed upon, but pernicious malaria, dysentery and typhoid fever are prevalent. The deaths for the week ending October 6th were five hundred and thirty-six, which is larger than for any single week during the past year. There are still some reconcentrados, whose deaths from starvation help to swell the roll of mortality.

The Condition of the Returned Spanish Soldiers. — The suffering on the part of the sick and wounded Spanish soldiers is reported to be so great that an English committee of ladies headed by the Countess de Casa Valencia, wife of the ex-ambassador to the Court of St. James, are receiving subscriptions in London in behalf of the unfortunate men and transmitting the money, as well as lint, bandages and other surgical appliances, to Spain. The committee has recently received a letter from the Duke of Sotomayor, majordomo to the Queen Regent, expressing her thanks to the committee for their efforts and her intention to personally distribute the fund among the sick and wounded soldiers.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 26, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 34, scarlet fever 33, measles 29, typhoid fever 24.

The New Bath House of the City of Boston. — The members of the medical profession were invited by the Mayor of Boston and the Bath Commission to visit on last Saturday the new Dover Street bath house which has just been opened by the city.

Yale Medical School. — The vacancy caused by the retirement of Professor Lusk, head of the physiological department at the Yale Medical School, has been filled by the appointment of Prof. B. Moore, formerly instructor of physiology in the University College Hospital, London.

Suffolk District Medical Society. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at No. 19 Boylston Place, on Thursday, November 10, 1898, at 2 p. m. Candidates will make personal application to the Secretary and present their medical diploma, or its equivalent, at least three days before the examination. For further particulars apply from 2 to 3 p. m. to John Dane, M.D., Secretary, No. 29 Marlborough Street, Boston.

Surgeon-General Sternberg before the Vermont Sanitary Association. — On October 25th, Surgeon-General Sternberg addressed the Vermont State Sanitary Association, at its third annual meeting at Montpelier, Vt., on "Modern Health Regulations." He included in his address the subject of the causes of typhoid infection in camps, and spoke in favor of the bill now before the Vermont legislature for the establishment of a State Bacteriological Laboratory.

NEW YORK.

Death at the Age of One Hundred and One. — The Rev. Charles Heath, colored, died in New York on October 18th at the age of one hundred and one years. He was born a slave in Dinwiddie County, Virginia, on September 17, 1798.

The Work of St. Luke's Hospital. — The Society of St. Luke's Hospital held its annual meeting in the hospital building on October 17th. The report of the president showed that during the year 2,656 patients were treated, of whom 721 were patients paying full rates, 146 paying in part, and 1,787 non-paying. In the out-patient department 3,711 patients were treated and 18,117 visits made. It was stated that 70 per cent. of the work of the institution was wholly charitable.

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Miscellany.

YELLOW FEVER IN THE SOUTH.

The following are the reports on yellow fever in the South, received by the Marine-Hospital Service for the week ending October 22, 1898:

			Cases.	Deaths.
Louisiana:	Alexandria,	To Oct. 15, (estimated)	200	2
	Amite City,	" " "	1	1
	Baton Rouge,	" " "	17	4
	" " East,	Oct. 17, yellow fever reported.		
	" " West,	" " " " "		
	Bowie,	" 6,	1	
	Cinclare,	To Oct. 15,	11	1
	Delogny,	Oct. 1,	1	
	Feliciana, East,	" 17, yellow fever reported.		
	Feliciana, West,	" " " " "		
	Franklin,	To Oct. 6,	375	7
	"	Oct. 7-13,	166	1
	"	" 14,	13	1
	"	" 15,	10	
	"	" 16,	22	
	"	" 17,	7	
	"	" 18,	1	
	"	" 19,	5	
	Harvey's Canal,	To Oct. 6,	41	3
	Houma,	" " 15,	40	2
	Iberville,	Oct. 17, yellow fever reported.		
	Jackson,	To Oct. 15,	15	0
	Jefferson Parish,	To Sept. 20,	5	0
	Lake Charles,	To Oct. 15,	1	1
	Lobdell,	Oct. 12, yellow fever reported.		
	Lutcher,	To Oct. 15,	14	2
	New Orleans,	" " "	74	19
	Plaquemine,	" " "	6	1
	St. Charles Parish,	Oct. 17, yellow fever reported.		
	St. James Parish,	" 1,	1	
	Wilson,	To Oct. 15,	303	7
Mississippi:	Bay St. Louis,	Oct. 11,	9	
	Canton,	" 10,	4	
	"	" 17,	1	
	"	" 19,	2	
	Clinton,	To Oct. 15,	40	
	Crystal Spring,	Oct. 11,	5	
	" "	" 19,	1	
	Edwards vicinity,	To Oct. 6,	6	
	" "	Oct. 7,	13	1
	" "	" 16,	5	
	Fayette,	" 6-13,	5	
	Harriston,	To Oct. 6,	42	4
	"	Oct. 7,	66	1
	"	" 14,	6	
	"	" 16,	2	
	"	" 17,	3	
	"	" 18,	2	
	"	" 19,	2	1
	Hattiesburg,	" 8,	18	
	"	" 14,	3	1
	"	" 15,	4	
	"	" 17,	4	1
	"	" 18,	2	1
	Hormanville,	To Oct. 13,	3	
	Jackson,	" " 6,	11	4
	"	Oct. 7,	61	1
	"	" 14,	10	
	"	" 15,	7	
	"	" 16,	8	
	"	" 17,	16	
	"	" 18,	4	1
	"	" 19,	6	
	Madison,	" 6,	45	
	"	" 17,	1	1
	"	" 18,	2	
	"	" 19,	5	
	Meridian,	" 15,	1	
	"	" 17,	2	
	Natchez,	" 7-13,	8	
	"	" 14,	4	
	"	" 15,	3	
	"	" 16,	3	
	"	" 17,	2	
	"	" 18,	3	
	"	" 19,	2	
	Orwood,	To Oct. 6,	79	4
	"	Oct. 7-13,	6	1
	"	" 14,	9	
	"	" 15,	4	

Mississippi: Oxford,	To Oct. 10,	470	36
"	Oct. 11-13,	13	2
"	" 14,	1	
"	" 15,	2	
"	" 16,	1	1
"	" 17,		
"	" 19,	4	
Poplarville,	" 9-13,	9	
"	" 16,	7	
"	" 17,	7	1
"	" 18,	1	
Port Gibson,	" 6,	1	1
Queen Hill,	" 15,	1	1
Ridgeland,	" 8-13,	5	
"	" 15,	1	
"	" 17,	1	
Starkville,	" 6-13,	6	
"	" 18,	1	
Taylor,	To Oct. 6,	100	11
"	Oct. 7-13,	4	2
"	" 15,	1	
Tougaloo,	" 16,	1	
"	" 17,	1	
Waterford,	To Oct. 6,	2	
Waterview,	" " 6,	10	
Waveland,	" " 10-13,	16	1
"	Oct. 14,	2	
"	" 16,	0	
"	" 17,	1	
"	" 18,	1	
Woodville,	To Oct. 6,	1	
Yazoo City,	Oct. 16,	6	
"	" 17,	5	
"	" 18,	4	
"	" 19,	2	1

The decided falling off since the frosts of last week is of interest.

PLAGUE IN VIENNA.

The death of a servant in Professor Nothnagel's laboratory in Vienna, from plague, probably contracted from the carcasses of animals which had died of plague inoculation, and of Dr. Mueller who attended him, together with the report that two nurses, another laboratory assistant, and the wife of Barisch, the assistant who died, have contracted the disease, has created considerable excitement in Vienna.

The popular fear of a plague epidemic is so great that, according to despatches to the daily press, "extraordinary precautions have now been taken to prevent an epidemic. The plague patients lie in an isolated building, attended by Dr. Pooch, a volunteer physician, and by Sisters of Charity. They are surrounded by a rope, across which nobody is allowed to pass. Dr. Pooch writes the prescriptions and fastens them to the window-pane. The doctors outside read them and have them made up. Then the prescriptions are placed on the window ledge, from whence they are removed by those inside. Food is conveyed to the patients and their attendants by Sisters of Charity in a similar manner, and the nurses furnish accounts by telephone of all changes in the patients' condition.

"Every person who has come in contact with Herr Barisch, principally the hospital attendants, has been isolated. Some of them resisted and others tried to escape, but were captured, and all were locked up. It is feared, however, say the reporters, that the precautions were taken too late. Barisch was ill three days before he saw a doctor, during which time he lived with his wife and visited wine shops. The wife, who has now developed suspicious symptoms, visited friends, rode in public omnibuses and came in contact with dozens of persons at her husband's funeral.

"A temporary hospital, consisting of several detached sheds, has been hastily erected behind the infectious hospital. One hundred men worked by torchlight there in order to complete it as quickly as possible.

"The anti-Semitic newspapers are accusing the Jewish doctors of bringing the plague to Vienna. It is feared that this appeal to the worst passions of the mob will lead to plague riots against the Jews if the disease spreads."

The popular fear of the spread of plague, however, is undoubtedly unjustified, as it ought to be easy for the health authorities, by the rigid isolation of suspects, to keep it fully under control. An unfortunate aspect of the occurrence is the fact that it will probably be exploited by the opponents of laboratory investigations and other methods of progress in medical science, as an argument that the cultivation of pathogenic organisms is dangerous to the communities in which bacteriological laboratories are situated.

In reply it may be said that this is probably the only known instance in which a contagious disease has been propagated from a case contracted in a laboratory in which pathogenic organisms were cultivated, that it will certainly be shown to be due to carelessness on the part of the servant, and that the disease will undoubtedly be rapidly brought under control.

The occurrence emphasizes the need for the most thorough precautions and safeguards in institutions where infectious bacteria are cultivated and studied, not only on the part of the principals, who now practise them, but also on the part of servants with whom familiarity is as apt to breed careless contempt, as ignorance is to breed superstition among the uninitiated.

THE INTRACEREBRAL INJECTION OF TETANUS ANTITOXIN.

The daring procedure first successfully practised by Quenu and Chauffard, as noted in the Journal of July 14th, has been performed for the first time in this country, and the eighth on record, by Dr. Rambaud, of the New York Pasteur Institute, in the case of a patient in Passaic, N. J., who developed tetanus after a lacerated wound of the calf of the leg due to falling through a skylight. A large portion of the calf of one leg was torn completely away. "Antitoxic serum was injected hypodermatically but without effect. As a final effort it was decided to resort to the heroic measure of trephining the skull on both sides and injecting the antitoxin directly into the anterior lobes of the brain tissue. This was accordingly done, with the result that almost immediately there was a relaxation of the muscles of the jaw. Since then improvement has been steady and constant." Dr. Rambaud was present at the first successful operation performed by Quenu and Chauffard, in which Roux injected the antitoxin. The period of incubation of the disease is not stated. It is to be hoped that a fuller report of the case, which is one of great interest and importance, will be forthcoming.

Du Hamel (*Méd. Moderne*, August 10, 1898) also reports a case of tetanus occurring in a boy aged fifteen and produced by a pistol-shot wound between the thumb and index finger. Later symptoms of tetanus developed and he was taken to the Pasteur Institute, where, in addition to hypodermic injections of antitetanic serum three cubic centimetres of a similar fluid was injected in each side of the brain near the fissure of Rolando. At the time the injections were made the patient was in a condition of strong opisthotonos. The contractions gradually diminished though they did not entirely disappear for some days. In three weeks he was out of the house.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TWENTY-ONE DAYS ENDING OCTOBER 20, 1898.

Murray, R. D., surgeon. To proceed to Meridian, Miss., for special temporary duty. October 5, 1898.

Mead, F. W., surgeon. Granted leave of absence for two days. October 4, 1898.

Banks, C. E., surgeon. Granted five days' extension of sick leave. October 1, 1898. To assume temporary command of Service at Vineyard Haven, Mass. October 5, 1898.

Glennan, A. H., surgeon. To proceed to Atlanta, Ga., for special temporary duty. October 10, 1898. To visit Montgomery, Ala., *en route* to Atlanta, Ga. October 11, 1898.

Brooks, S. D., surgeon. Granted leave of absence for four days. October 4, 1898.

Oakley, J. H., passed assistant surgeon. To proceed to Birmingham, Ala., for special temporary duty. October 13, 1898.

Cofer, L. E., assistant surgeon. Granted leave of absence for twenty days. October 10, 1898.

Thomas, A. R., assistant surgeon. To report at Bureau for special instructions. October 14, 1898.

Tabb, S. R., assistant surgeon. Assigned to duty as sanitary inspector on U. S. Transport "Manitoba." October 4, 1898.

McMullen, John, assistant surgeon. Assigned to duty as sanitary inspector on U. S. Transport "Mississippi." October 5, 1898.

Russell, H. C., assistant surgeon. To rejoin station at Chicago, Ill. October 5, 1898

Parker, H. B., assistant surgeon. To report to medical officer in command of Service at Stapleton, N. Y., for duty. October 19, 1898.

Foster, M. H., assistant surgeon. Granted leave of absence for thirty days on account of sickness. October 1, 1898.

Anderson, J. F., assistant surgeon. Granted leave of absence for thirty days on account of sickness. October 4, 1898.

SOCIETY NOTICE.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, November 2, 1898, at 8.15 o'clock.

Business: The election of a chairman for the Section for the ensuing two years.

Papers: "The Treatment of Cerebral Tumors," by Dr. P. C. Knapp. Drs. Putnam, Bradford, M. H. Richardson and Walton have been invited to discuss this paper.

"A Case of Cerebral Sarcoma of Great Extent; Extirpation; Marked Amelioration of Symptoms; Recurrence and Death at the End of Six Months. Remarks on the Advantages of Palliative Operations in Cerebral Tumors," by Drs. J. J. Putnam and M. H. Richardson.

Presentation of Pathological specimens, instruments, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

RECENT DEATHS.

Edmund Walsh, M.D., M.M.S.S., of East Cambridge, died October 19, 1898.

Dr. Davide Toscani, professor of legal medicine in the University of Rome, died after a long illness at Rome, September 15, 1898. About twenty-five years ago he established the Municipal Office of Hygiene at Rome and was its director for twenty years. The great improvement which has taken place in the sanitary condition of that city during this time is largely due to his work.

J. Richmond Barss, M.D., M.M.S.S., a prominent physician of Malden, Mass., died at Hanover, October 25th. He was born in the Bermudas, forty-nine years ago, and was educated in Halifax. Completing his college education there, he entered Harvard Medical School, where he received his degree. He practised for some twelve years in Melrose, after which he removed to Malden, where he had been for the past sixteen years. He had been senior surgeon at the Malden Hospital since that institution opened, was at one time president of the Malden Medical Society and was a member of the Massachusetts Medical Society.

A. P. Snow, M.D., of Winthrop, Me., died October 25th. He was born in Brunswick, March 14, 1826. He was a private pupil of the late Prof. E. R. Peaslee, of New York, studying in the Medical School of Maine and the Dartmouth Medical School, graduating from the former in 1854. He was demonstrator of anatomy in both schools. He commenced the practice of medicine in Winthrop in 1854. He was an active member of the Maine Medical Association and its president in 1873. In 1869 he was chosen president of the Kennebec County Medical Association and he was also a member of the American Medical Association. In 1871 he was a member of the legislature. Eight years later he was appointed a trustee of the Maine Insane Hospital and he occupied other positions of responsibility and trust, both as a physician and as a citizen.

BOOKS AND PAMPHLETS RECEIVED.

Flies as Spreaders of Sickness in Camps. By M. A. Veeder, M.D., Lyons, N. Y. Reprint. 1898.

Tenth Report of the State Board of Health of the State of Maine for the Two Years ending December 31, 1897, 1896-97. Augusta: Kennebec Journal Print. 1898.

Endemic Leprosy in Louisiana, with a Logical Argument for the Contagiousness of this Disease. By Isadore Dyer, Ph.B. (Yale), M.D., New Orleans, La. Reprint. 1898.

Notes on Disinfectants and Disinfection. By A. G. Young, M.D., Secretary of the State Board of Health of Maine. Reprinted from the Tenth Report. Augusta. 1898.

On the Significance of Jaundice in Typhoid Fever and on the Hepatic Complications without Jaundice. By J. M. DaCosta, M.D., LL.D. (Harv.), Philadelphia. Reprint. 1898.

An Additional Case of Double Congenital Microphthalmos. What Should the General Practitioner Know about the Eye? By Cassius D. Wescott, M.D., Chicago. Reprints. 1898.

Orchitis or Epididymitis as a Complication or Sequel of Typhoid Fever. A Contribution to the Study of the Muscular Dystrophies. By Augustus A. Eshner, M.D., Philadelphia. Reprints. 1898.

A Contribution to the Study of Hip-Disease; On the Ultimate Results of the Mechanical and Operative Treatment. By Virgil P. Gibney, M.D., Jerome Hilton Waterman, M.D., and W. G. Reynolds, M.D., New York. Reprint. 1898.

The Hygiene of the Voice, with Twenty-seven Illustrations. By Thos. F. Rumbold, M.D., Member of the St. Louis Medical Society; Permanent Member of the American Medical Association, etc. St. Louis, Mo.: Witt Publishing Co. 1898.

Twentieth Century Practice; An International Encyclopedia of Modern Medical Science. By leading authorities of Europe and America. Edited by Thomas L. Stedman, M.D., New York City. In twenty volumes. Vol. XV. "Infectious Diseases." New York: William Wood & Co. 1898.

Manual of Skin Diseases, with Special Reference to Diagnosis and Treatment. By W. A. Hardaway, M.D., Professor of Diseases of the Skin in the Missouri Medical College, St. Louis. Second edition, entirely rewritten and much enlarged. Philadelphia and New York: Lea Bros. & Co. 1898.

The Treatment of Skin Cancers. By W. S. Gottheil, M.D., Professor of Dermatology at the New York School of Clinical Medicine; Dermatologist to the Lebanon Hospital, the Northwestern and West-Side German Dispensaries, etc. New York: Published by International Journal of Surgery Co. 1898.

The Essentials of Histology, Descriptive and Practical, for the Use of Students. By E. A. Schäfer, LL.D., F.R.S., Jodrell Professor of Physiology in University College, London; Editor of the Histological Portion of Quain's "Anatomy." New (fifth) edition. Philadelphia and New York: Lea Brothers & Co. 1898.

Diseases of Women; a Treatise on the Principles and Practice of Gynecology for Students and Practitioners. By E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School; Gynecologist to St. Luke's Hospital, Chicago, etc. Philadelphia and New York: Lea Brothers & Co. 1898.

Guide to the Clinical Examination and Treatment of Sick Children. By John Thomson, M.D., F.R.C.P. (Ed.), Extra Physician to the Royal Hospital for Sick Children, and Lecturer on the Diseases of Children in the School of Medicine of the Royal College, Edinburgh. Philadelphia and New York: Lea Brothers & Co. 1898.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois, etc. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

Hemorrhagic Glaucoma; Report of a Case, with Micro-Photographs. A Clinical Report on the Use of Argonin in Gonorrheal Ophthalmia. A Case of Tenonitis. Acute Inflammation of the Middle Ear. The Determining Cause of the Site of Ulcers on the Nasal Septum. By E. C. Ellett, M.D., Memphis, Tenn. Reprints. 1897-98.

A Clinical Treatise on Diseases of the Breast. By A. Marmaduke Shield, M.B. (Cantab.), F.R.C.S., Senior Assistant Surgeon and Lecturer on Practical Surgery to St. George's Hospital; Late Assistant Surgeon, Aural Surgeon and Lecturer on Operative Surgery to Charing Cross Hospital, etc. London: Macmillan & Co. 1898.

Original Articles.

TROPICAL AND CAMP DISEASE: A STUDY OF SANTIAGO CASES AT THE BOSTON CITY HOSPITAL.

BY E. M. BUCKINGHAM, M.D.,
Visiting Physician.

It is still altogether too soon for any complete medical report of the cases of disease from Santiago. Still, as these cases have been scattered broadcast over the country, it seems proper for one who has had extended opportunities to publish his observations, although a longer time might modify any conclusions. It seems especially imperative since the type of disease is new to this part of the country.

Of over four hundred cases admitted to the hospital, about a third have passed through my hands. Probably all have malaria. In most cases this is sufficiently clear from the clinical history. In a large proportion, it has been demonstrated by the microscope. The remaining cases are so few, that as all have been alike exposed, it is fair to assume that more extended observation would have shown these, too, to be infected. This is the more probable because it is by no means unusual for a first and second blood examination to be negative, and for the clinical condition to be one of comparative health, with or without an enlarged spleen; and yet for the disease to be unmistakably demonstrated later, both clinically and microscopically. Any such cases should then be assumed to be malarial, whether it can be demonstrated or not. Whenever malaria has been detected microscopically it has been invariably of the estivo-autumnal variety, and never of the tertian form with which we are familiar. The clinical differences between these forms are very great.

In almost every patient who has arrived directly from Santiago the spleen has been enlarged. In some few, who came by way of Montauk, this could not be demonstrated, the result probably of time and treatment. These spleens, like those of malaria in general, were harder than in a typical typhoid. A peculiarity not uncommon in this disease and one which I have not observed in tertian malaria is that while the spleen may be enormously enlarged, it may in other cases be overlooked while perfectly palpable. That is, it is apparently large, but is at the same time situated under the ribs behind the position in which we expect to find it. A probable explanation is that while only moderately increased in size in these cases, it is yet extremely hard, enabling us to palpate with ease provided we seek in the right place. That this explanation is the true one I have satisfied myself in the post-mortem room. The observation, which has been made by others before me, is of practical importance in diagnosis, since the patient may be very sick and yet the spleen may be overlooked by the inexperienced.

Absence of chill is rather the rule than the exception, and when it occurs it is seldom pronounced. I have often seen it more severe in tertian malaria than in any of my cases of estivo-autumnal. In a certain proportion there may be a slight tremor seen by the observer, yet this is by no means constant even in the worst cases, and when it occurs the patient may deny all sensation of cold. Those whose general condition shows them to have been very sick before admission have as a rule had no chill or at most a slight chilliness. Chill may, however, occur. Sometimes the paroxysm is marked by vomiting, dizziness, severe headache, perhaps delirium, occasionally hematuria. Patients may become unconscious and may die. I have never myself seen unconsciousness, although I have seen a mental dulness which was a distinct approach to it. This sluggishness, as I have seen it, has lasted but a short time, but most of my patients had taken much quinine before I saw them. I am particular in speaking of its limitation to the paroxysm in order not to be misunderstood when dealing later with the diagnosis between this disease and typhoid. On the other hand, most patients are entirely clear throughout, notwithstanding that the temperature may be very high. They may have temperatures of 102° to 103° without feeling particularly sick. This is so common that the statements of patients as to the dates of their last fever are quite worthless. The exacerbations may be very sudden. One officer assured me that when upon duty, and without warning, he fell to the ground, and was unconscious until he found himself in his tent. As in other malaria the temperature can vary so rapidly that merely two readings of the thermometer in the day may be quite misleading.

Dangerous paroxysms occur after convalescence is apparently established. One of the most severe that I have seen was in an officer who landed seemingly in good health except that his spleen was large. He had not been ill since before leaving Cuba, and I knew of no reason why I should not have let him travel alone to Ohio, excepting that I had not seen his temperature chart. Two days after landing he became extremely sick, however, remaining so for days. At the end of this time he was feeble, anemic and emaciated. A very slight relapse occurred a week after the first. Altogether aside from their severity, there are distinct types of estivo-autumnal malaria as distinguished by the temperature curve, and the curve may change from one type to another in successive paroxysms. One of my patients whose blood showed both the malarial organism and the malarial anemia, and did not show the typhoid reaction at any time, yet had a curve fairly resembling typhoid. Far more common is a daily rise with a drop to normal or nearly to normal, simulating tertian but not typhoid, because beginning suddenly and ending suddenly after days rather than weeks. Or there may be an occasional rise followed by a more or less irregular interval of normal temperature, or again a remittent of three to five or more days, or lastly, a thoroughly irregular temperature.

In the course of a few days the patient, from being fairly well nourished, may present a picture of starvation. In all there is marked anemia. A patient sent home on a furlough was admitted in a state of collapse, with a temperature of 105.4°. In two days his red blood corpuscles had become reduced to 1,105,000 with 25 per cent. of hemiglobin, white corpuscles being 6,000. This extreme anemia, with skin sunburned and discolored by destroyed blood, gives a peculiar complexion; combined with a haggard expression, it makes a typical face. Now, after two months, the extreme type is not so often seen. The essential difference is less emaciation and less sunburn.

Cases such as I have described are emphatically cases for hospital treatment; that is, men who need frequent readings of the thermometer, who are liable to sudden and dangerous relapses, and who need disagreeable and expensive drugs, are better cared for in hospitals than in the community at large. The early disbanding of regiments from Cuba is therefore in my opinion a blunder. Relapses are so common that they are to be expected until a certain time has elapsed without them. In some cases a definite cycle can be detected, and this is to a certain extent a guide as to how long a period of observation should exist before the patient is discharged. It is only approximate at best. Where no such data existed, I made the observation period seven full days of normal temperature. I should in future make it ten. Notwithstanding that men feel well, it is dangerous to send them away until time has passed since the last rise of temperature, however slight. In private practice, I should have it distinctly understood that if a man goes into the street, unattended, within ten days of a severe manifestation of estivo-autumnal malaria, he does it at his own risk. If he must go, it should be with an attendant prepared to inject quinine subcutaneously, if necessary.

By the first of October there was an increasing number of cases developing in the hospital, which I believe to be neuritis, whether due to malaria or to quinine I have no opinion. If I knew them to be due to quinine, it would not induce me to lessen the dose.

The majority of cases have diarrhea. It is so nearly universal as to suggest that it may depend on malaria, were it not a well-recognized disease of camps. In some cases the history shows it to be the remains of a dysentery. Some cases have a real dysentery with ulcerations. Of amebic dysentery I say nothing, because it did not happen to come into my service. The only dysentery autopsy that I was able to get showed a large intestine more or less inflammed throughout its length, with numerous ulcerations in its lower part.

There were some cases of typhoid. It will be seen that many cases presented a combination of symptoms that called for care in excluding this diagnosis. High temperature with remissions, large spleen and diarrhea make a suggestive symptom-complex, and I should not dare to say that errors of diagnosis may not have been made. In one case the expression and mental condition were also typhoidal for a few days, while the microscope and the after history make it probable that we were dealing with malaria and not with typhoid. Generally, the bright intelligence, with a temperature and at a period of the disease when a typhoid should be stupid, a moist and clean tongue, continued absence of rose-spots, and often the character of the dejections, should create doubt as to the presence of typhoid. As the case progresses, the continued absence of the Widal reaction becomes of value, and the temperature curve is subject to variations that are not expected in typhoid. With reference to the Widal reaction there is something to be said. Reports have been constantly coming to me of "moderate clumping" in cases in which typhoid certainly did not exist at the time. These reports need to be explained. They are not due to typhoid at some distant time in the past. Last year when all my patients were examined for this reaction, it was found to be positive only in typhoid, and in a few jaundiced patients; one of whom died of cirrhosis and was examined post mortem. The number of these cases among the Santiago men shows that there is some connection between "moderate clumping" and the Santiago expedition. It is conceivably due to one of at least three possible causes, either to malaria, to quinine or to mild unrecognized typhoid occurring in Cuba and recovering before the patients reached this hospital. My present knowledge will not permit me to express an opinion, but the subject is an interesting one for investigation.

Another class of cases are weak hearts, somewhat resembling those described by Da Costa as soldier's hearts, and of which he saw many from the Army of the Potomac. There are murmurs, probably inorganic, with little or no enlargement of the cardiac area. The pulse is compressible, rapid at first, becoming slow under treatment, but again becoming rapid on any little exertion and occasionally palpitation or pain. This condition seems to be due to exhaustion and recovers with complete rest, food, alcohol and small doses of digitalis and strychnia.

All the patients are at first more or less exhausted; but as they first land, especially if excited by friends, their appearance is often misleading. The excitement of getting home gives a fictitious strength which lasts a short time and is easily abused. Men who will sit up eagerly to answer questions will lie down wearily in a short time. These men need to be guarded against fatigue. and one of them on furlough applied at the hospital for the sake of peace and quiet and to be guarded against the friends who were killing him with kindness. Several, reported convalescent by the surgeon of a transport, had rises of temperature for several days which I thought were probably due to excitement on getting home. I believe this did not so often happen after soldiers' friends were put under the same regulations as to visiting as other patients' friends.

There have been a few cases of unresolved pneumonia, of initial phthisis and of diffuse nephritis, occurring in men who had passed the surgeon's examination some four months before, and who had made the campaign in the meantime.

In the treatment of estivo-autumnal malaria quinine has been the one drug used in my service. To discuss its value will surprise most readers, but I have heard it questioned. It is certain that relapses occur after long intervals, and I am told that the malarial organism is to be found at such times. It must be admitted that the good effect of quinine is not so striking as in the tertian malaria of home origin. In some cases, however, a single sharp relapse, in a man who had had no quinine on the way home, was the only one while with us. In other cases successive paroxysms were progressively lighter. Of the patients discharged from my own service and directed to continue quinine for a month, not one has returned to the hospital, although there must be by this time from thirty to fifty such men living within its radius, and of the class of its ordinary patients. Of course there has been some luck about this. With more patients or with more time, the story would certainly be different. Nevertheless I submit that this experience shows something for the efficiency of quinine. At present, I should formulate it, that the rôle of quinine in estivo-autumnal malaria is something like that of mercury in syphilis. We cannot promise to cure the patient. We cannot promise that he may not die, but we can make it unlikely. We cannot prevent relapses, but we probably can make them lighter and less numerous.

Quinine can be given in many ways; in our tertian malaria there is no room for doubt but that a single large dose given as the temperature begins to fall is far more efficient than when the same amount is given in divided doses. Theoretically, this is to give a hard finishing blow at the organisms at the moment when they have spent their force. Practically, the records of the Children's Hospital among others, records which I studied for the report a few years ago, show that the fact agrees with the theory. With estivo-autumnal malaria the problem is more difficult, because first, it is harder to know when the real drop is beginning, and secondly, while we are waiting the patient may die. My rule has been to give from fifteen to twenty-five or thirty grains every morning in one dose, sick or well; to give twenty to forty grains more when the temperature falls, also in one dose; and to follow these large doses with dilute hydrochloric acid to ensure their solution. Many patients cannot take these doses already dissolved without vomiting. Pills are not reliable, especially if they are coated. Cachés followed by acid generally solve the difficulty. Where they do not I have found no advantage in dividing the dose into three.

With the diarrheas, it is to be remembered that sometimes we are dealing with debilitated persons having ulcerated bowels, some of whom will die and some of whom will remain sick. The pathological condition should be borne in mind when treating them. I do not see that we know that any anatomical change exists in many of them. They have worked hard in heat and wet on bacon and hardtack, and have diarrhea, which may possibly be functional. Many of them had ravenous appetites on landing, and I was inclined to feed them rather liberally, but insensibly the diet lists were reduced to suit one weakened stomach after another. I have allowed the greater number a carefully regulated amount of fruit and cannot see that it has done harm to more than a few. In carrying out this careful regulation of diets I have been immensely helped by the two senior members of the house staff, Dr. Weil assisted by Dr. Huntington. I have not seen that opium does any good, except by temporarily giving rest when dejections are frequent, and I have become very sceptical as to the value of any astringents. Mild salines, generally in the form of seidlitz powder, have, I believe, helped some patients and not others. Rectal irrigation with hot salt solution has been given to most of the dysenteries. Two complained of it. Most liked it because it relieved tenesmus. One got well, I think, because of it. In all cases it is debilitating if long continued. It was given with an ordinary syringe, the bowel filling up and emptying itself until the efflux was clear.

In concluding, I may say that the number of soldiers from camps in our own country who have been in my service is small; perhaps not over a half dozen, and that they have not been included in this report.

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THE GRATUITOUS MEDICAL TREATMENT OF THOSE NOT IN NEEDY CIRCUMSTANCES.

BY HASKET DERBY, M.D., BOSTON.

In a recent article on "The Abuse of Medical Charities,"[1] Dr. James C. White discusses the question of the hospital treatment of patients who are able to pay a private practitioner his customary fee, and after an earnest and careful examination into the entire subject of gratuitous medical advice, as well as the different classes to which it may with justice be extended, he makes a remarkable claim. Stated briefly it is, in substance, as follows: That a patient amply able to pay his physician may yet apply at a hospital and receive free treatment, being justified in so doing by the fact that his case is of sufficient interest medically to be utilized for the purposes of clinical teaching. The poorer classes, Dr. White explains, may not and often do not afford a sufficient amount of material for the needs of a class. As a result either the course of teaching must suffer for lack of illustration, or else other sources be drawn upon. The well-to-do patient who illustrates a rare disease is not to be rejected as unfit for hospital treatment, but rather detained and exhibited to the class. The physician in private practice may well consent to forego the fee that might otherwise fall to his share, sustained as he will be by the consolatory reflection that the cause of medical teaching has thus gained, and that others are in their turn enabled to share a privilege which, during his student days, he himself may have enjoyed.

A claim of this kind, made by a physician and a teacher of Dr. White's eminence, cannot be allowed to pass unquestioned by those who believe it to be unjust. It appears to the writer that such a practice, if followed out by teachers in general, would encourage imposture, demoralize the public and wrong the profession.

Starting on the broad general principle that hospital services for both out- and in-patients are primarily intended for the benefit of suffering humanity, otherwise debarred by want of means from seeking medical aid, the writer entirely agrees with Dr. White that too hard and fast a line must not be drawn between the fit and the unfit. Assuming that the vast majority of applicants are unable to consult the physician at his office, a careful and sympathetic inquiry should be made into the circumstances of every doubtful case. Two men may have the same wages or salary; the amount amply sufficient for the wants of a bachelor fails to meet the expenses of a growing family. A person may even be able to pay a moderate fee to the kindly family physician, who is accustomed to consider his circumstances, but be unable to defray the comparatively large charge which the eminent specialist is understood to be in the habit of exacting. Advice therefore is naturally sought of the same authority at the hospital. A well-dressed and well-educated patient may be temporarily out of work or the victim of recent pecuniary disaster. A little tact on the part of the examiner suffices to clear up such cases, and under doubtful circumstances the balance should incline in favor of the patient. The mantle of true charity is both broad and elastic. And those who have enjoyed the advantages of treatment at the hospital should, in their turn, be willing to offer the only compensation in their power, and allow their cases to be utilized for purposes of medical instruction.

But we come now to the consideration of a different class. The individual who can pay but does not wish to is a well known and even a not infrequent visitor at every public clinic. Certainly during a thirty years' experience at the Massachusetts Eye and Ear Infirmary the writer rarely passed a week without meeting at least two or three of this class. Occasionally, it is true, people of means, attracted by the reputation of the institution, would visit it in the hope of gaining its advantages by the payment of a fee. But the placards liberally hung around the waiting-room, conveying the information that only those unable to pay were entitled to apply, would generally undeceive them, and they would take their departure. Sometimes, however, they would boldly plant themselves in the chair before the surgeon and claim treatment either on the ground of being taxpayers, or more frequently on the plea that so and so of their acquaintance, a man whose means exceeded their own, had already succeeded in obtaining treatment. Often, however, the question of means was kept in the background, and treatment applied for as a matter of course. They knew they were sailing under false colors, they had never considered the question of exhibiting themselves for the instruction of the class and thus furnishing a *quid pro quo* for their treatment, they were simply endeavoring to defraud a public charity.

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[1] Boston Medical and Surgical Journal, October 13, 1898, pp. 362, 363.

Let us now, for the sake of argument, assume that three such individuals apply together at a public clinic. They are attracted by the well-earned reputation of its chief, but can perfectly well afford to consult him at his office, being in the possession of ample means. They have, however, elected to attempt an imposition on him, in order to save the fee. They have even, as has sometimes happened, altered their dress and neglected their toilet for the purpose of not exciting remark among the general crowd of poor patients. But questioned by the clerk or the physician himself their story has broken down, and a weak attempt is made to excuse an evident fraud. They are all self-convicted impostors. The experienced eye of the head of the clinic has recognized the diseases of two as commonplace and devoid of special interest, while the third exhibits a rare affection, one that has been for some time vainly sought for the instruction of the class. The exhibition of this case will be of great interest to the class of students and fill up what would otherwise have been an hiatus in the course.

It must be acknowledged that the temptation to accept this patient is very great. According to Dr. White it should be yielded to. The patient is accordingly retained, is exhibited, lectured on and treated gratuitously. He may return again and again. Ultimately he is dismissed cured, his purse intact.

Meanwhile what becomes of the other two? Their acceptance is not pleaded for. They are to be sent to the right about, with the explanation that a hospital is no place for the wealthy. In vain may they cite the opposite treatment of their more fortunate colleague.

This situation has been assumed for the purpose of illustration. It exhibits the logical consequence of the carrying into effect of Dr. White's theory. Of course such an event as two or three of these parties coming together is not impossible, although highly improbable (the writer once had five consecutive cases of this stamp). But facts of this kind become generally known. The well-to-do public is thus encouraged to apply. Practice is diverted from the private members of the profession and tends more and more towards the hospital clinic. The profession at large suffers in order that the cause of instruction may be served. A class of patients for whom the hospital was never intended frequents its precincts. Funds that were given for purposes of pure charity are thus diverted from their original intent. It is unreasonable to claim that the average testator leaves his money to a hospital in order to add to its facilities for medical instruction. His primary object is the cure of disease, the relief of suffering, restoration to health. Instruction in regard to the laws of disease is legitimate, most desirable, and exceedingly imperfect unless aided by the resources of a hospital. But such institutions were not originally founded for this end. Hospitals are an outcome of Christianity, and were long under the special ægis of the Church. The patient was a *hospes*, an honored guest, not a simple object to be lectured on or a text for a discourse.

Thirteen years ago the writer read before a medical society of this city a paper,[2] "The Abuses connected with Gratuitous Medical Treatment." It contained the following passage, which would seem in this connection to merit repetition. He sees no reason, at the present time, for changing the views therein brought forward:

"The claim is sometimes made that, for purposes of medical instruction, all should be fish that comes to the net, that valuable material for demonstration is on no account to be thrown away, and that a rare and interesting form of disease may be retained and treated, even though the patient belongs to the better classes. But the end justifies the means as little in medicine as in theology. Such a patient has no claims whatever on an institution endowed for the benefit of the poor. His withdrawal from the ranks of those on whom the profession at large depends for support works a distinct wrong to the private practitioner, into whose hands he would otherwise fall. If the chief of the clinic elects to utilize in that way his own material, if he conscientiously diverts his patients from his office to the hospital, and foregoes his just remuneration for the benefit of his class, all honor to him who thus immolates himself on the altar of science. But he has no right to assume that his professional brethren are equally disinterested, or to aid the individual who is in fraudulent search of gratuitous treatment."

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[2] Boston Medical and Surgical Journal, November 12, 1885, p. 462.

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TUMORS OF THE FRONTAL LOBES;[1] WITH SPECIAL REFERENCE TO A CASE WITH PREDOMINANT SYMPTOMS OF A NEURASTHENIC TYPE.[2]

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(From the Sears Pathological Laboratory, Harvard Medical School.)

(Concluded from No. 17, p. 409.)

THE exact extent of the tumor inward cannot be determined owing to its almost exact similarity to the white matter. There are no hemorrhagic foci nor distinct areas of softening.

Microscopic Examination. — Section through the cortex and underlying white matter shows a somewhat cellular new growth with numerous fibres; ganglion cells are, in places, still to be made out. Myeline fibres are markedly degenerated, but by no means entirely destroyed, even near the surface. The growth is infiltrating in character; optic nerve normal. Diagnosis: glioma.

The case in its onset, development, outcome and pathological anatomy is evidently of exceptional interest. An analysis of the symptoms presented in its course, in the light of our knowledge of frontal lobe tumors, in general, is instructive.

[1] Our interest in what follows centres chiefly in the prefrontal area, namely, that portion of the brain lying anterior to the precentral sulcus; it has, however, seemed best to use the more general term, rather than insist upon a further subdivision.

[2] Read before the Boston Society for Medical Improvement, May 2, 1898.

The first noticeable point is the striking lack of characteristic signs pointing to intracranial growth during four years — up to within a few months of death. It is this period which we wish now chiefly to consider: First, of the general symptoms of brain tumor as applied to this case:

Headache. — Never constant, nor very annoying; the vague head symptoms characterized by pain were interpreted as manifestations of a so called functional disorder, and certainly resembled closely the headaches of neurasthenia. The inconstancy of the position of pain lent a certain weight to this supposition, though it is well recognized that the pain of brain tumor is at times unsettled. The final and severest pain was in the occipital region.

Vomiting. — Apart from that which occurred following epileptic convulsions there was absolutely none during the period we are considering. There were vague complaints of a stomach disorder about which no definite information could be gained and which could not therefore be interpreted as indicative of grave organic central disturbance or again as causative of the cerebral disturbance which existed, as had been suggested by certain physicians.

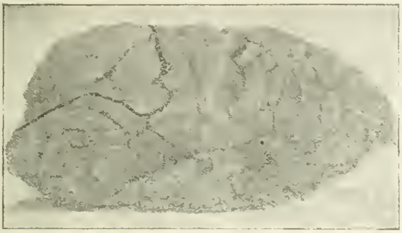

Fig. 3. Outer surface. Extent of tumor indicated by black line.

Optic Neuritis. — Dr. Standish's examination showed the discs normal. There was no disturbance of vision.

Vertigo. — Always a symptom to be interpreted with the greatest caution, both from its extreme frequency and from the great variety of conditions in which it may occur. The proper maintenance of equilibrium is brought about by so delicate a nerve mechanism that its slight derangement is a matter of the commonest experience. To be dizzy on slight provocation is an almost everyday matter with certain persons. To be dizzy constantly or over an extended period should excite suspicion, but not too quickly, of organic disease. In the absence of corroborative evidence as to its cause we are justified in withholding judgment until such evidence is forthcoming. In the case under consideration the symptom was regarded as a probable manifestation of a functionally disordered nervous system. Its real significance in the light of the outcome was not appreciated, for which we claim adequate excuse.

Generalized Convulsions — Epilepsy. — A relatively common symptom in cerebral tumor, but in many other conditions as well. That epilepsy, so-called, is a symptom and not a disease certainly does not require reiteration here. The underlying disease of which it is a symptom is varied and often undiscoverable. In the absence of syphilis an epilepsy coming on after the thirtieth year should be regarded with the utmost suspicion. In the case we are considering the suspicion was certainly aroused, in fact, it was for the unexplained convulsive seizures that the patient chiefly sought advice. The attacks in themselves indicated nothing of significance so far as a history was obtainable at the time of examination. Many of them were distinctly epileptiform in type, some involving but a few muscles; others had certain hysterical marks; none helped to a focal diagnosis. The brother of the patient has kindly sent me a detailed and accurate account of the convulsive seizures, which I reproduce in part:

> I (his brother) witnessed three of the attacks from beginning to end; none of these were followed by unconsciousness. I also saw two others after the convulsions had begun; these were followed by unconsciousness. I saw several light ones which were not followed by unconsciousness. In all but two of his attacks he had sufficient warning of their coming to enable him to sit or lie down.
>
> The three that I saw this summer came on suddenly and unexpectedly, the first sign being a flushing of the face, quickly followed by a slight tremor of the lower jaw; this lasted, in all but the last, less than a minute. Immediately following this, a clonic convulsion of the lower jaw, and a peculiar "cry," which diminished with the intensity of the convulsion. During this time, which was nearly a minute, there was great cyanosis of the face and neck, the superficial veins standing out, chin raised, with retraction of the head, hands clinched and arms half flexed in a state of tonic spasm. Immediately following the convulsion the face became pale, the head resting back, and for about a minute he appeared semi-conscious, would not answer questions, but upon recovering showed and said that he was not unconscious of anything. He appeared well after these attacks only pale for some hours and depressed. The first two occurred while he was seated, the last began while he was standing but he immediately sat down; there was no fall. He always complained of his head and would raise his hand to his forehead just as his face began to flush. He never could describe the feeling in the head better than to say that it was "a sort of numbness." This feeling preceded all but a few of the spells and enabled him to avoid falling. Of the two severe attacks which occurred two weeks preceding his death, one occurred during the night, the other in the morning after he had dressed. They were both of the same nature. The last seemed to be precipitated by his bending his body downward, leaning over; he at once walked to his bed and lay down. These convulsions lasted a little longer than the first, there was no "cry," less cyanosis of the face, the jaw muscles not involved, but those of the arms and legs from the hip down were in a state of clonic spasm; there was frothing of the mouth, froth tinged with blood (although he said that he did not bite his tongue), involuntary passage of small amount of urine. Convulsions *were* followed by

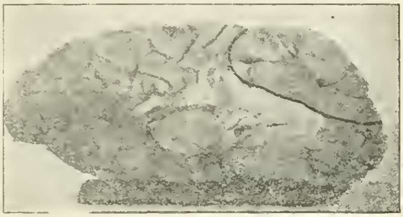

Fig. 4. Inner surface.

unconsciousness, slow, stertorous breathing, 15 per minute, pulse 45, full and strong. Unconsciousness lasted ten to fifteen minutes; came out of unconsciousness slowly, and would understand what he saw and what was said to him some minutes before he could reply. Did not seem prostrated after, only pale and depressed.

From the foregoing account it will be seen that the convulsive attacks were not all of the same type, a matter, to which, no doubt, a certain diagnostic significance might have been attached. Looking at the entire course of the disease, the convulsions were in a general way as follows. I again quote from his brother's observations: "He had first convulsions, followed by unconsciousness, then convulsions (slight) without unconsciousness, then unconsciousness (of the same type as the first) without convulsions." This observation corresponds closely with Oppenheim's description of the general convulsions occurring in brain tumor.[29] That a confusion of these attacks with hysteria is possible Oppenheim confirms, suggesting, however, that the inefficiency of suggestion argues against their hysteroid character. The attacks, in our case, although due to a tumor, were apparently markedly influenced by suggestion, hence an increase of the confusion attending their proper interpretation.

During the entire period, therefore, antecedent to the last stage of the disease, the convulsive seizures remained a mystery. In the absence of all other general symptoms, no diagnosis of their cause was more than suspected.

A marked slowing of the pulse manifested itself at the very end when other symptoms had developed which rendered the diagnosis no longer obscure. Our interest, as stated, centres in the possibility of a diagnosis a few months before. So far, then, as general symptoms are concerned, there was only a vague vertigo and anomalous convulsions upon which to base a diagnosis. They were insufficient.

Turning now to the so-called focal symptoms, of which mention has been made in the early part of the paper, — what assistance is to be found in their analysis? Absolutely none. First and most important, the mental state of the patient, and change of character. In spite of the fact that a large area of the left frontal lobe was involved there were none of the described mental signs. The higher psychical functions of judgment, reason and character, in the broad sense, were unimpaired. A few days before his death he was filling a responsible position and making decisions of importance with accuracy and judgment. There was at no time the slightest indication of the mental peculiarity described by Jastrowitz and Oppenheim.

When I last saw him the whole impression was that of a clear-headed, vigorous man, of exceptional intellect but neurasthenic. He was introspective, he had read too many medical books on the subject of epilepsy, he had discussed his condition at too great length with friends; he was, as we popularly use the word, "nervous." This "nervousness" manifested itself in typical ways, notably by the characteristic "phobias." He feared various circumstances in everyday life. He could not bear a crowd, nor a large building, nor a noisy street; he lacked confidence to ride a bicycle, without being able to give an exact reason for his timidity. His whole attitude was a mistrust of himself in numberless situations. He was constantly struggling with himself to overcome these vague disabilities, and on the whole, with excellent success. We find no mention of such a mental state as, in any way, characteristic of frontal lobe tumor. The curious aural experiences, of which he made special mention in his letter, written shortly before death, and which had long annoyed him, were interpreted as one element in a complex neurasthenic state, a supposition which the autopsy did nothing to controvert, since the temporal lobes were in no way involved. The slight irritability, which was apparent only to members of his immediate family, was regarded as the wholly legitimate expression of a sick man's temper. It was, at no time, sufficiently definite to be regarded as characteristic of organic disease, and simply lent weight to the general impression of neurasthenia. Had it not been for the epileptiform seizures, a definite diagnosis of uncomplicated neurasthenia would have been made. As it was, the feeling was irresistible that the neurasthenia was a fact, but with a complication of something else. Everything seemed to bear out this supposition. His improvement under suggestion was unmistakable; his phobias, in great measure, disappeared; his whole condition, on the mental side, changed for the better and he expressed himself as being more normal than for several years. Following this came his death. The question at once arises: were the mental, neurasthenic symptoms to be attributed to the tumor? The question is too subtle for detailed consideration here. Two facts, however, stand out prominently, first, if due in any way to organic disease, the symptoms yielded remarkably to suggestion, a matter which affords in itself considerable food for reflection. Secondly, if entirely independent of the tumor growing in the frontal lobe, their presence increased enormously the difficulty of diagnosis. I find no parallel case in the literature so far as I have been able to study it.

Admitting then, the anomalous character of these mental neurasthenic symptoms as indicative of disturbance in the frontal region, do we find any further evidence of a localized lesion?

There was never the slightest indication of Bruns's ataxic gait. The patient walked with perfect steadiness; his dislike of crowds and thoroughfares was due to a sense of confusion and vague dread, not to uncertainty of equilibrium. There was, further, no sign of contraction of the neck and body muscles, as described by Hebold,[30] Knecht,[31] Moeli,[32] Buraduc[33] and Oppenheim.[34]

Speech disturbance was never prominent and could at no time be properly termed an aphasia. It consisted merely in what is often seen under normal conditions, a temporary forgetfulness of a word. During the various personal conversations with him I never noticed the slightest error or significant hesitation. From a diagnostic point of view nothing was to be learned from his speech. There was no agraphia, as seen by reference to his carefully written letter, already quoted.

We find ourselves at the end of this possibly too lengthy analysis, in a purely negative attitude. Of general symptoms we have epileptiform seizures of varying character, with a suspicion of hysteria, and no focal symptoms whatever, admitting the neurasthenic manifestations to have been coincident, and not in the relation of effect to cause; evidently insufficient for a definite diagnosis.

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[29] Oppenheim: Geschwülste des Gehirns, pp. 54-57.

[30] Hebold: loc. cit.

[31] Knecht: loc. cit.

[32] Moeli: loc. cit.

[33] Buraduc: Prog. Med., 1875, p. 520.

[34] Oppenheim: loc. cit.

That tumors of the brain may run their course without symptoms, we have considerable evidence, and yet the suspicion of careless and imperfect physical examination is, in many of the reported cases, not to be excluded. Even excluding certain cases on this ground, there still remain a number well reported, in which either no symptoms, or very slightly defined ones, were observed during life, some of them, in which the tumor would ordinarily give definite focal signs. Macdonald,[35] Hadden,[36] Leimbuch,[37] Bramwell[38] have reported cases of this character. Most striking is one of Starr's[39] cases which might well be taken for a partial description of the one now under consideration. I quote what he says of it: "Thus in one case under my observation, a large glioma occupied the entire white substance of the frontal lobe upon the left side, yet the patient had suffered only from occasional attacks of epileptic convulsions, not preceded by an aura, and never unilateral, was as intelligent as ever up to the time of his death, though his family had noticed some irritability of temper at times, and on this account had occasionally questioned his responsibility for certain peculiarities. This man was under observation by most competent physicians for several years and was supposed to have epilepsy. His eyes were examined and found to be normal within a few weeks of his sudden death, which took place in a convulsion. He had never had the ordinary symptoms of a brain tumor."

Apart from the unusual neurasthenic manifestations in our case, the two histories are identical in their essential features.

That brain tumor may simulate hysteria is now well recognized. In this connection a case reported by Schoenthal[40] is of interest, in which a tumor was found in the left frontal lobe.

Speculation is legitimate and certainly interesting regarding the cause of the absence of symptoms in these instances. Were the matter thoroughly investigated it would, no doubt, be found that the tumors which do not produce symptoms are slow-growing and infiltrating, characteristics which belong essentially to the gliomata. It is possible to conceive that under these conditions large areas of the brain may be involved in so insidious a fashion that a certain vicarious function may be set up during the slow process of their growth. The fact is also to be borne in mind that the destruction of brain tissue, even in areas most affected, may not be complete in these tumors, which apparently was the fact in our case (see description of microscopic appearances). With our almost wholly vague knowledge of psychical localization, if such a term be admissible, the conception of vicarious function may have added weight, a matter, however, which can find no complete discussion here. It will be remembered that in our case the cortex was chiefly involved.

Of the treatment of the case under consideration little need be said beyond drawing renewed attention to the remarkable effect of suggestion in alleviating the most troublesome symptoms, an element in treatment which to our mind should never be neglected, whatever the nature of the underlying disease may be.

As we sum up this case, we would suggest the following points as of special interest:

(1) The absence of characteristic symptoms of brain tumor in general.

(2) The absence of symptoms ordinarily seen in tumor of the frontal lobes.

(3) The early presence of convulsive seizures and the importance of their just interpretation.

(4) The striking symptoms of a neurasthenic character, and their diminution under suggestion.

(5) The negative evidence toward the theory of a psychical localization in the frontal lobes.

(6) The suddenness of death.

In conclusion we cannot do better than quote from Oppenheim, who apparently has said the last word in this, as in many other neurological matters: "Zum Schlusse möchte ich noch hervorheben, dass die echte Epilepsie und auch die schon beschriebenen hysteriformen Krämpfe relativ oft bei Geschwülsten des Stirnlappens wahrgenommen wurden, und manchmal sehr lange oder auernd das einzige Zeichen derselben bildeten."[41]

LOCALIZED NEURITIS.

BY S. G. WEBBER, M.D., BOSTON.

Many patients have a slight local disturbance of sensation, not so severe as to cause disability, yet sufficiently annoying to give considerable discomfort. At times his discomfort increases to such a degree as to amount to pain, and then it interferes with the full and free use of the limb. Many persons thus troubled do not consult a physician because the discomfort is so slight they disregard it as unworthy of notice. Sometimes, however, after a while the pain becomes more severe and continuous.

In most if not all these cases the cause of the disturbance is local neuritis or perineuritis. At some time in the past there has been an injury or a source of irritation to the nerve, which has given rise to an inflammation of its sheath or of the nerve itself. The sheath has become thickened and pressure is exerted upon the nerve fibres, hence the discomfort and pain and the inability to use the limb with normal freedom. The discomfort is not continuous, it varies with the condition of the patient. A slight increase of blood pressure around the nerve will increase the pressure and thus increase the pain, or the patient's health is less vigorous or his mental condition varies and he is less able to resist the disturbance and feels the pain more keenly.

The reflex influence upon the mind of continuous uninterrupted painful impressions is the exciting cause of changes in its power of resistance so that its healthy tone is disturbed and a series of phenomena follow which we call hysterical. We may be surprised at such serious and general disturbance arising from so insignificant an injury and such slight sensory irritation. We forget that the pain has been continuous and overlook the fact that there has been a long continued vascular or circulatory change in the brain as the attendant upon the mental effort made to resist the painful impressions coming from the seat of the original injury to the nerve. Hence the nerve cells have been kept in a state of mild but continuous activity until they have undergone a change of nutrition which is not conducive to healthy action.

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[35] Macdonald: Brain, 1890, xiii, p. 83.

[36] Hadden: Brain, 1889, xi, p. 523.

[37] Leimbuch: Deutsch. Ztschft. f. Nervenheilkunde, 1891, Heft 34, p. 319.

[38] Bramwell: Intra-cranial Tumors.

[39] Starr: Nervous Diseases by American Authors, 1895, p. 481.

[40] Schoenthal: Berl. klin. Woch., 1891, No. 10, p. 254.

[41] Oppenheim: Geschwülste des Gehirns, 1896, p. 90.

The causes of this local neuritis or perineuritis are varied — blows, pressure, action of cold or heat, of poisons. The neuritic disturbance may show itself soon after the action of the trauma, or it may not give evidence of its presence for a variable time afterwards. The cause may act slowly or it may act suddenly and exhibit its injurious effects at once.

Thus a blow may spend its force on the nerve itself, or the surrounding tissues may partially protect the nerve and the ill effects become evident only after time enough has passed for the surrounding inflammation to give rise to pressure or be communicated to the nerve. So also a less severe or sudden form of pressure may cause symptoms of nerve injury within a short time or they may not be perceived for a long interval, sometimes not until years after the injury, when the patient has almost forgotten the occurrence. Where a long time elapses between the injury and the symptoms of neuritis it is probable that the morbid process has been advancing slowly until at length the pressure on the nerve becomes sufficient to cause symptoms of irritation. Or it is possible that the patient when in health does not notice the irritation, the system is in such a state of health that the brain does not notice the disturbance, but when the strength is run down, there is less power of resistence and then the messages sent from the affected part cannot be disregarded and pain is felt. The difference is not in the nerve, but in the brain.

As instances of discomfort due to very slight causes, which seem insignificant, I may mention two in which there was numbness along the front of one thigh, as if the part were "asleep." There was no pain, no tenderness over the nerve. In both these the cause of the almost insignificant discomfort was a bunch of keys carried in the front trousers pocket, which pressed on the anterior crural nerve or one of its branches.

In another patient there was similar discomfort along the sciatic nerve from pressure of books carried in the hip pocket. The patient was a commercial traveller and carried his memorandum book in that pocket.

Another salesman who travelled nights sat in the cars with his sacrum and crests of the ilia resting on one seat and his feet on the opposite seat. In this position there was sufficient pressure upon the sciatic nerve to cause a pain down the leg in its course.

In all these patients there was a fear that the pain, which was very slight, might be the forerunner of something more serious. In each one also it was only after a careful inquiry into the patient's occupation and habits that the cause of the discomfort was discovered. A removal of the cause was sufficient for a cure.

Sometimes the pain is felt only long after the pressure has ceased. A man was gripped hard on the right arm by a strong man. The immediate pain was felt several months after and then he seemed perfectly well for seven years; then without additional cause the right hand began to give trouble, he awoke with pain in the upper arm and shoulder, later the pain was felt in the forearm, the index and middle fingers were numb. The arm was tender over the plexus just below the axilla, over the radial and median nerves.

Another gentleman was sent to me who had had trouble for three months with his left hand and arm. The fingers were cold and numb as if "asleep." He could not use knife or fork easily, there was atrophy of some muscles. The ulnar nerve was enlarged at the elbow and the groove for the nerve was partially filled. Seven years previously he had broken his arm at the elbow. He recovered from that so that he was able to use that arm freely; he could row a boat without trouble. When seen he could not lean on his elbow without causing pain. Probably in this case the nerve had been irritated by pressure when the elbow had been pressed against hard substances by leaning upon it, and the sheath of the nerve had slowly thickened until the constriction gave rise to the symptoms of which he complained.

Sometimes a more definite injury is the starting point of a neuritis, which may not be confined to the branch primarily injured, but may spread to other branches of that nerve, to the trunk, or to other trunks.

A boy eleven years old hit his elbow bruising the ulnar nerve. He had pain in the arm for several weeks. About four weeks after the injury the arm began to waste away. The atrophy was confined to the region supplied by the ulnar nerve.

A lady tried to push up the window-sash, using the radial border of the forefinger to press on the woodwork. Afterwards she had pain in that finger, which gradually extended until the whole arm was implicated. A hysterical condition was developed and she had a severe time, pain, tenderness, swelling and various general hysterical symptoms.

A young lady of seventeen while testing a mineral with nitric acid was burned by the acid from the breaking of the test-tube. The acid ran over the inside of her hand. Neuritis set in and extended up the arm until the whole arm and shoulder were affected. There was loss of power in the arm.

Another lady had trouble in the whole arm from hitting the end of the middle finger.

A gentleman hit his elbow bruising the ulnar nerve. Seventeen years after he had trouble in the hand and wrist, the pain being worst in the little finger and ring finger, sometimes it extended up the arm.

Neuritis may result from the influence of different poisons, as syphilis, of which I have seen only one very well-marked case, the disturbance being in the arm, beginning in the ring and little fingers.

Lead is most frequently the cause of neuritis in the arm and need be only mentioned, as it is not uncommon and is usually readily recognized, though not always.

Alcohol may cause not only multiple neuritis, but it may also be the efficient cause of a localized disturbance, or it may put the system into such a condition that some very insignificant cause starts the inflammation in a nerve.

Arsenic is another of the poisons which give rise to this affection. The arsenic may be received through the mouth into the stomach as in ordinary poisoning, when the neuritis is likely to be multiple, or it may enter the system through the lungs, as is probably the case in poisoning from wall paper.

The neuritis which occurs during or after acute diseases, as typhoid fever, small-pox, pneumonia and other febrile diseases is probably due to the action of some toxic substance formed in the system.

The same is true in some cases of that form of disturbance which is usually spoken of as rheumatic, or arising from a cold, though in many cases the action of the cold is local and not general. This may have been the case in a young man who went to a fire and played the hose on the fire for half an hour, though the neuritis did not appear until two days later. The pain was felt first in the right shoulder and later in the whole of right arm. It is possible there had been a wrench or strain of the arm as one causative factor.

A previous injury may be the reason why the effects of cold show themselves in particular nerves instead of more generally.

Rheumatism was more certainly the cause in a man who worked in a cold, damp cistern, dipping out water. There were skin disturbances due to the neuritis, which were interesting and instructive. The fingers of the right hand were of a dark bluish color, rather mottled, the ends of the nails curved, the epithelium was increased under the nails, the skin was inclined to peal off the ends of the fingers. In some cases there is glossy skin, which is quite characteristic of nerve lesion.

The question which most interests the patient is whether he will recover from the pain and discomfort and disability resulting in these cases from the neuritis. The cases I have so briefly mentioned show that sometimes the effects of very slight injuries are lasting and seem to become more serious with the lapse of time. If left to themselves some, perhaps it would be correct to say most, of the slight injuries of nerves recover without any treatment and leave no signs of trouble behind. This is so with most of the bruises one receives in the course of his life. If, however, the bruise is severe, as when the nerve is strongly pressed against a bone, there is danger lest the changes around or in the nerve become sufficient to cause subsequent trouble, and long continued inconvenience or pain follow. In the majority of cases where the patient has been able and willing to follow directions long enough there has been partial or complete recovery, the pain and disability have been much diminished or entirely removed.

In severe cases rest and constitutional treatment are necessary. For local treatment I have obtained the greatest benefit from small blisters along the tract of the affected nerve, a second blister not to be applied until the first has healed, and then on a different spot. The blisters to be only about quarter or third of an inch in diameter. Next to these electricity and massage have done the most good. Internal medication, except as stated above and where there has been poisoning from lead or some toxin, does little good, even in rheumatism doing less than one might expect.

The Dangers of Liquefied Air. — While experimenting with liquefied air at the Brooklyn Polytechnic Institute last week, Prof. Irving W. Fay of the Chemistry Department was seriously injured about the face, and it is reported that he will probably lose the sight of one eye. He had mixed with it some red phosphorus, and poured out the mass upon a piece of paper on the table, and was watching the changes take place in the phosphorus. He then stirred the mixture with a glass rod when the explosion occurred which produced the injury. Fortunately, the force of the explosion was exerted downward, wrecking the table.

Clinical Department.

CHOLECYSENTEROSTOMY WITH THE LARGE INTESTINE, BY MEANS OF THE MURPHY BUTTON.[1]

BY W. L. COUSINS, M.D., PORTLAND, ME.,

Ex-Assistant Resident Surgeon Johns Hopkins Hospital; Adjunct Surgeon Maine General Hospital; Surgeon Diseases of Women, Maine Eye and Ear Infirmary.

I called to see Mrs. L. on March 1, 1896, and found her suffering from intense abdominal pain, which she told me she had first noticed three days before calling for me.

The pain she described as being of a colicky nature, which seemed to originate in the right iliac fossa, and diffuse itself until it became general, that is, over the entire abdomen. She had not had a movement of the bowels for three days. I examined her and found the abdomen distended and tympanitic, except in the right iliac fossa, where there was an area of marked dulness and decidedly tender to the touch. She was vomiting every few minutes. She informed me that she had been taking an opiate (probably morphine) to relieve the pain, the exact amount of which I cannot give.

At this time the temperature was a little elevated, not sufficient to cause alarm in an ordinary case, but the pulse varied from 120 to 130, rapid and running, indicating a severe infection. Under the circumstances the opiate was at once stopped and calomel was given in divided doses, saline enemas being given by the rectum. This treatment did not relieve her until March 4th, although a large amount of fecal matter was washed away, sufficient to allow the insertion of the rectal tube its entire length of about fifteen inches.

I continued this treatment; I thoroughly Paquelined the entire abdominal surface, preferring this method of counter-irritation to that of blistering, for the reason that if properly applied no blistering would result. The patient suffers but little from its application; it relieves the pain, and there is no danger, as there is in giving morphine, of checking secretions, paralyzing normal activity of the intestines and masking the symptoms, acting as it does reflexly through the sympathetic system, in evacuating the entire intestinal tract.

After a large evacuation of the intestines had been obtained the abdomen was much less distended; the pain had ceased, and upon palpation a distinct tumor was noticed and felt in the right iliac fossa, extending from a point about three inches above Poupart's ligament to a point midway between the umbilicus and the anterior superior spinous process of the ilium, thence upward, nearly to the margin of the liver, between which there was a tympanitic area.

The tumor also extended posteriorly to the lumbar region, as far as the anterior margin of the quadratus lumborum muscle. In every way it resembled an attack of appendicitis with abscess formation.

I continued giving salines, and on the second or third day, after the bowels had been thoroughly moved, I noticed a slight discoloration, or a yellowishness, of the conjunctivæ, but paid no special attention to this, for the reason that I thought the flow of bile had, in some way, become occluded, owing to the long time which had elapsed since the patient had had a free movement of the bowels, the fecal matter blocked up within the upper portion of the small intestine, and was most strongly led to believe this, owing to the fact that the patient, immediately before the bowels were relieved, had vomited fecal matter in large quantities. The third day she was more jaundiced, the abdomen being considerably colored.

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[1] Read before the Maine Medical Association.

I then asked the patient in regard to previous attacks of this nature, as she said that she had had a number of attacks, the pain always being in the same spot, as she had first noticed it in this attack, the so-called McBurney's point. She gave no history of ever having had gall-stones.

I advised her as soon as she was able to be moved to go to the Maine Eye and Ear Infirmary, where I could more carefully watch her and, if necessary, operate, which might be necessary at any time.

The temperature was at this time but slightly elevated, 99° F.

I advised her as soon as she had recovered sufficiently to undergo an operation for the removal of the appendix, telling her that I firmly believed that she had an appendiceal abscess.

She was moved to the hospital. She improved very rapidly, and I fixed the day for the operation for the 14th, but on the afternoon of the 13th she was taken with a severe pain in the region of the appendix; the temperature suddenly rose to 104° F. and we thought it necessary that the operation should be done immediately.

I would add here, that up to the morning of the 13th jaundice had disappeared, but on the afternoon of the same day she was decidedly jaundiced, vomiting and suffering the most excruciating pain; abdomen was distended, tympanitic and tender at all points, especially in the region of the appendix.

It is interesting to note the sudden appearance of the second attack of jaundice.

It then occurred to me that owing to the large size of the indurated area, which extended so far upwards toward the liver, it was a distended gall-bladder, and the symptoms were due to the passage of gall-stones. I was so firmly convinced at this time of its being gall-stones that I told the family that probably it was appendicitis, and that no doubt she had a distended gall-bladder which contained gall-stones.

We operated at four o'clock on the evening of the 14th. I was assisted by Dr. John F. Thompson and Dr. N. M. Marshall.

On account of the feeling that it was appendicitis, we made our first incision a little to the outer side of the McBurney point, in fact, very near the crest of the ilium, as the tumor seemed to be more prominent at this point.

The abdominal cavity was opened, and we found everything firmly bound down by adhesions, but no abscess due to appendicitis was found, but there had been, and was still existing a peritonitis with a great deal of exudate which was firmly clinging to the abdominal peritoneum. I then extended my finger upward, and discovered the gall-bladder greatly distended by fluid, so much so that its solid contents, the gall-stones, could not be felt.

We then thoroughly washed out the abdominal cavity with quantities of sterilized plain water, 110° F., introducing it through a rubber tube, which we passed into the abdominal cavity as far as possible.

A second opening was made over the gall-bladder which fully and clearly exposed it. I then found that the gall-bladder was firmly bound down by adhesions and perforated, some of its contents having escaped into the general peritoneal cavity. The apex of the gall-bladder was adherent to the hepatic flexure of the colon, and at the point of contact with the intestine, gangrenous.

The gall-bladder was then brought up into the wound and anchored with catgut, after which it was opened, its cavity explored, every precaution being taken to prevent the escape of the bile into the general peritoneal cavity, although a large amount of it escaped, which was afterwards washed out by successive washings with sterilized water.

From the gall-bladder fourteen stones were removed, the largest of which was the size of an acorn, and the smallest, the size of a beech-nut.

After irrigating the abdominal cavity with plain sterilized water, the lower angle of the wound was closed with silkworm-gut, while the edges of the gall-bladder were firmly sutured with catgut to the edge of the upper angle of this incision. The lower wound, over the region of the appendix, was left open, a gauze drain was inserted into the abdominal cavity of about four inches.

The toilet of the wound was then made, a large quantity of sterilized gauze applied to the wound, and an abdominal bandage put on, holding the dressing in place.

The wound was dressed on the following day, gauze drain removed from the gall-bladder, the wound irrigated, the drain reinserted into the gall-bladder. The gauze was allowed to remain in the lower wound for forty-eight hours, and then removed entirely, allowing it to close by granulation.

The temperature at this time was 99° F., having fallen from 104° F. Pulse was good.

On the third day after the operation, the patient developed a fecal fistula which closed in a few days, and the patient made a rapid recovery.

When the patient left the Infirmary she was feeling well, although a biliary fistula remained, which discharged a considerable quantity of bile.

I again saw the patient the first of December of the same year, when she was suffering from the fistula which had existed since I saw her the last time. It was discharging large quantities of bile, causing her much inconvenience, as it saturated her clothing several times a day. I advised an operation for the closing of the fistula, after first satisfying myself that the common duct was permanently closed.

I sent her to the Infirmary on the sixth day of December, and on the seventh, assisted by Dr. Seth C. Gordon and Dr. O. P. Smith, I made a cholecystenterostomy, by means of the "Murphy button," with the *large intestine*, at the hepatic flexure of the colon, which I think was the first operation of its kind done in this State, and one of the few successful ones ever made in the United States. The button came away on the fifteenth day.

The operation was of particular interest for two reasons, namely, the selection of the large intestine for the anastomosis, and secondly, its influence on digestion.[2]

The patient made a good recovery, and is to-day well.

It was suggested at the time of the operation that the bile flowing into the large intestine would produce a troublesome diarrhea, but on the contrary, she has had none since leaving the hospital. Before the operation she had suffered from habitual constipation for years, but since she has had regular defecations each day.

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[2] The anastomosis was made with large intestine, not from choice, but necessity — the parts being too adherent to admit of usual methods.

In January, 1898, I wrote to the National Bureau of Medical Bibliography asking that department to review the work done upon the gall-bladder with especial reference to this operation, that is, substituting the large intestine for the small, and in reply learned that the operation, although it had been attempted several times, had in each instance resulted fatally.

I then wrote to Dr. J. B. Murphy, of Chicago, asking for information. In reply he courteously informed me that he had done the operation himself but once. The patient recovered. That he knew of three other cases in which the operation had been a success.

About the middle of January, Mrs. L. came to my office, and stated that she had been working since leaving the Infirmary, and was now perfectly well. Her digestion was normal, had a regular movement of the bowels each day, without any cathartic. Her appetite was good, and she had never been so well for years as at the present time.

Mayo, of England, who has recently written a book upon the diseases of the gall-bladder, states that in his opinion an anastomosis should never be done with the large intestine, except in exceptional cases; that he had made the operation eleven times with the small intestine, selecting either the duodenum or the jejunum for the operation, all successfully.

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Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

PENAL SERVITUDE AND INSANITY.

The Commissioners and Directors of Prisons in England give some interesting data relative to imprisonment and insanity.[1] The total number of insane dealt with in local prisons was 380, of whom 216 were remanded for observation and therefore already in a doubtful mental state on committal. The majority of this number were found insane on arraignment. Excluding these cases but 164 remained, of whom 34 were reported as having been previously insane, and 121 were found to be insane on reception, so that only 43 of the whole number developed symptoms of unsound mind in prison. Analysis of the 43 cases developed in prison shows that six occurred within one week, six within two weeks and seven within a month. It is therefore obvious to any one who has even a superficial acquaintance with the development of mental diseases, that imprisonment can have little to do with the causation of any of them. Subtracting the 19 that came on within a month, 24 cases remained, which developed within a later period. Of this number only five occurred after the completion of six months' imprisonment, the remainder occurring before the expiration of that time. These facts are, therefore, quite inconsistent with the view which has been reiterated from time to time in the daily press that imprisonment gives rise to insanity, for these figures seem to show the contrary.

Douglas,[2] commenting upon this report, recognizes that the first offender may show, immediately after commitment to prison, a normal depression, which wears off under the influence of routine work and exercise. They often show interest in their work, and, in England, are kept separate from habitual criminals. They often feel that their future is regarded as hopeful, and many derive from this feeling considerable mental comfort and assuagement. This normal depression, he thinks, is not great enough to operate detrimentally upon a normally constituted mind, and, even with a tendency to insanity, the quiet routine of the prison, with its freedom from excitement, may conduce to exempt the individual from the risk of an attack. To the recidivist, confinement is by on means terrible in prison, as he is kept clean and comfortable, given sufficient wholesome food, and the labor exacted from him is less severe than that which he would need to do outside to gain a livelihood. He is shut out from worry and anxiety, from alcohol and deleterious excitement of all kinds. The quiet life, far from predisposing to insanity, Douglas thinks actually shields many from attacks to which they would otherwise be exposed from the nature of the life they lead outside. Remorse is so rare among criminals, especially among recidivists, that it is of no importance as a cause of mental derangement.

HEREDITY IN RELATION TO MENTAL DISEASE.

Farquharson,[3] from a study of 1,200 cases of hereditary insanity, comes to the following conclusions:

(1) Authorities vary greatly in the estimates they give of the frequency of hereditary predisposition in cases of insanity. In the Cumberland and Westmoreland Asylum 30.7 per cent. of all the cases admitted showed a history of previous insanity in their families.

(2) A history of insanity in relatives, whether in the direct line or collateral, may be deemed sufficient evidence of hereditary predisposition. It is not actual insanity that is transmitted, but an inherited flaw in the nervous organization. This may remain latent for one or more generations, and subsequently reappear.

(3) Hereditary predisposition to insanity is strongest when it is inherited through both parents.

(4) The maternal influence is very slightly more potent than the paternal in transmitting the tendency to insanity.

(5) Insanity inherited through the father is slightly more dangerous to the sons than to the daughters; insanity inherited through the mother is markedly more dangerous to the daughters than to the sons.

(6) The female sex is markedly more liable to suffer from hereditary insanity than is the male.

(7) The order of sequence of the different forms of mental disease amongst the cases admitted into Garlands Asylum, as regards the frequency of hereditary predisposition which they exhibit, has been as follows: 1. Congenital imbecility. 2. Melancholia. 3. Mania. 4. Epileptic insanity. 5. Dementia. 6. General paralysis.

(8) The suicidal impulse is very frequently present in cases of hereditary insanity.

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[1] British Medical Journal, September 11, 1897.

[2] Journal of Mental Science, April, 1898.

[3] Loc. cit., July, 1898.

(9) Suicide and dipsomania have a marked tendency to be transmitted unchanged from one generation to another.

(10) In most cases, however, the form of insanity in the descendants shows great variations from that which occurred in the ancestors, and different members of the same family or generation may exhibit widely different varieties of mental disease or other nervous disorder. Insanity, the tendency to which is inherited, may have been preceded in the family not by actual insanity, but by other forms of nervous disease.

(11) In successive generations the propensity to mental disease may become gradually intensified; finally a state of amentia is produced, with a tendency to bring about extinction of the family. On the other hand, the tendency to mental disease may become gradually eliminated in the course of generations.

(12) The origin of hereditary neuroses in a family can sometimes be traced to alcoholic excess in the ancestors.

(13) Hereditary predisposition to insanity in a family is frequently associated with the tubercular diathesis.

(14) The exciting causes of attacks of insanity seem on the whole to be of much the same nature in the hereditarily predisposed as in those without predisposition.

(15) Hereditary insanity is specially prone to show itself at critical periods of life; thus puerperal insanity is proportionately more frequent in the hereditarily predisposed than in those without predisposition.

(16) Relapses are more frequent in cases of hereditary insanity than in non-hereditary cases.

(17) Hereditary cases are apt to suffer somewhat earlier in life than non-hereditary cases.

(18) Attacks of hereditary insanity may come on at any period of life. Even in senile insanity the proportion of hereditary cases does not fall very far short of the proportion existing in cases at all ages combined.

(19) Hereditary insanity frequently makes its appearance at about the same period of life in successive generations. When the taint is becoming intensified it tends to make its appearance at an earlier age in each succeeding generation; and, conversely, when the taint is becoming eliminated it tends to appear later in life in each succeeding generation.

(20) The proportion of unmarried persons is considerably higher amongst those suffering from hereditary insanity than amongst those without predisposition.

(21) The recovery rate in hereditary cases of insanity is considerably higher than in non-hereditary cases.

(22) The death-rate is lower in hereditary than in non-hereditary cases.

(23) The duration of life is somewhat shorter in those suffering from hereditary insanity than it is in the insane generally.

(24) A larger proportion of deaths from tubercular diseases occurs in cases of hereditary insanity than in non-hereditary cases.

(25) The duration of the attack in hereditary cases that recover does not seem to differ very much from that in non-hereditary cases.

AUTO-INFECTION IN THE INSANE.

Ceni and Ferrari[4] have made a bacteriological examination of the blood of eighteen patients suffering either from acute delirium or the confusion associated with repeated convulsions. In each case cultures were made from the blood daily as long as the severe mental symptoms lasted. Growths of bacteria were obtained from seven of the cases (one, epilepsy) while in the remaining eleven the results were negative. In the former group there had been in each case considerable fever, in the latter none. In the positive cases pure growths were obtained in each case, the form remaining constant with each individual. The growths were either staphylococci or streptococci. They concluded that, in their cases, bacteria are present in the blood only when there is fever, and the fever and course and result of the illness depend more upon the virulence than upon the kind of bacteria. The bacteria have no causal relation to the mental disease but are merely a complication.

Tomlinson,[5] from bacteriological examination of the cortex and cerebro-spinal fluid, in forty-seven cases of insanity, thinks that the presence of micro-organisms involves their pre-existence in the organism and that their presence during the course of acute mental disturbance is not relational or causative but associative.

SYPHILIS AND INSANITY.

Dawson,[6] after reviewing the pathological changes in the brain which may be caused by syphilis, suggests a provisional classification of the forms of mental disease due to syphilis as follows:

I. Insanity of early syphilis (primary and secondary).

(*a*) Acute toxic insanity.

(*b*) Melancholia with or without dementia, probably due to cerebral anemia.

II. Insanity of late (tertiary) syphilis.

(*a*) Insanity due to syphilitic disease of the base and vessels.

(*b*) Insanity due to syphilitic disease of the convexity.

Most, if not all, cases of cerebral syphilis in which insanity has been caused by epilepsy will fall under the second head (II, *b*) but should rather be classed with epileptic insanity, being only indirectly due to syphilis.

III. Metasyphilitic (parasyphilitic) insanity.

(*a*) Insanity of tabes.

(*b*) General paralysis.

This classification includes only cases in which there is a gross anatomical change at the basis of the mental symptoms. Syphilis, however, may indirectly affect unstable minds by the fear of contracting the disease, the worry, remorse and anxiety produced by its existence and the pain, insomnia and other sensory symptoms so common in its course.

THE PATHOLOGY OF INSANITY.

Alzheimer[7] states that the only definite pathology we have in insanity is in general paralysis, senile dementia, focal brain diseases, idiocy and imbecility. It is very difficult to determine the basal pathology on account of the complicated structure of the brain. Furthermore, we often see only the terminal stages of the various psychoses and we do not yet know thoroughly the normal structure of the cortex. The old methods of research are useless and the new methods, such as Nissl's stain and Weigert's neuroglia stain will show the finest pathological changes. Weigert's stain shows four conditions: an enlargement of the cell body, a proliferation of the glia cells with division of their nuclei, an increased production of glia fibres and a heaping up of pigment in the protoplasmic body of the glia cells with signs of degenerative changes in the nucleus after or without fibre formation.

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[4] Rivista Sperimentale di Frenatria, xxiv, 182, 1898.

[5] American Journal of Insanity, April, 1897.

[6] Journal of Mental Science, April, 1898.

[7] Monatschrift. für Psych. und Neurol., April, 1897.

In the curable psychosis, without subsequent mental defect after recovery, as in febrile delirium, the glia is essentially unaffected. In severe cases, such as acute delirium, the glia cells show changes (proliferation, increased fibre production) which remain. In intoxication psychoses the glia changes vary with the severity of the intoxication. In dementia the changes are very marked and they are also characteristic and marked in general paralysis. In senile cases there is a tendency to focal changes in the glia in different vascular regions. Glia proliferation in the superficial layers is characteristic in epilepsy. We have no data as to melancholia or paranoia. The greater the changes in the glia the worse the prognosis, the degree of change corresponding to the degree of dementia. It is useless to try the older methods and Nissl's stain is rather too delicate, as the ganglion cell is altered by general diseases, such as pneumonia or nephritis, which may have caused death. He reports several cases of exhaustion psychoses, with mild confusion, which showed marked changes in the ganglion cells all over the cortex, but without special changes in the glia, and two other cases, due to some profound intoxication, with marked delirium and sepsis, where there was more destruction of the cells and more active changes in the glia.

GENERAL PARALYSIS.

At the International Congress at Moscow, in 1897, Krafft-Ebing[8] read a paper, bearing upon the influence of syphilis as a cause of general paralysis, which has occasioned considerable criticism. After noticing the general effects of the stress of modern civilization and the great increase in the disease of late years, he mentioned syphilis as the most important and possibly the essential factor and reported an experiment made in his clinic that has an important bearing on the question. Eight paretics, in the advanced stage of the disease, were inoculated with fresh secretion from a chancre and kept under close observation for one hundred and eighty days. In none of the eight were any syphilitic manifestations observed, and he concludes that they were all latent syphilitics and hence immune. In none of these cases had any primary manifestations of the disease been observed. As additional evidence of the syphilitic origin of general paralysis, he adduces the facts of congenital syphilis in juvenile cases, the greater frequency of the disease in cities, its greater frequency among military men and its rarity among clergymen and women of the higher classes. Where syphilis is rare, general paralysis is rare and its chief causes may be stated as civilization and syphilization.

The statement that where syphilis is rare general paralysis is rare receives further confirmation from Ehler's studies in Iceland.[9] Owing to the isolation of the various families at great distances from each other, syphilis is relatively infrequent and general paralysis unknown, the only case that the author was able to find having occurred in a sailor, who had lived in foreign countries and acquired syphilis there.

[Can this be an explanation of the reports from the State Hospital at Warren, Pa., where, in sixteen years, there are said to be only nine cases of general paralysis in 3,844 admissions? — Rep.]

Krafft-Ebing's experiment, although harmless in its results, has been sharply criticised by Christian,[10] who says, "Although Krafft-Ebing has not feared to inoculate with syphilis eight poor devils without defence, affected with general paralysis, what does it matter that they were incurable, doomed to certain and perhaps speedy death?" "Have we the right," asks Christian, "to experiment upon them as upon the lower animals? The result of the experiment was necessarily uncertain but every one knew, or should know, that inoculating such patients with any active virus exposed them to a certain danger. One or more of those inoculated might have suffered from accidents of phagendenism or severe tertiary lesions." The victims were unable to give their consent, and Christian wonders how Krafft-Ebing could cover such acts with his authority without a word of blame or without the least reserve.

Ballet[11] has studied the lesions of general paralysis by Nissl's method. He finds the four layers of the cortex still recognizable but much less plain than in normal brains. There are a large number of vessels in the third layer and the subcortical white matter; the nerve cells are less numerous and less distinct under a high power; the arterioles and capillaries are enormously dilated; the adventitial sheath is distended by lymph corpuscles and especially at the bifurcation of the vessels there is a great accumulation of pigment, the white corpuscles accumulate in the interstitial tissue, especially in the neighborhood of the vessels and about the nerve cells. With still higher powers the small white cells with small and highly colored nucleus and little protoplasm could readily be distinguished from the large white cells with abundant protoplasm and a large, irregular, less highly stained nucleus as of the polynuclear leucocytes. The cells themselves tend to lose their triangular form and become oval or round; the protoplasmic prolongations are atrophied and hard to discover; the chromatophilic granulations are for the most part fused or reduced to a sort of fine dust or wholly dissolved. From his study of the pathology Ballet has become convinced that the primary lesions, which are of chief importance and precede the others, are the vascular lesions. He has always found such lesions in all the examinations which he has made, while the lesions of the nerve cells have seemed to him inconstant, variable in degree and subordinated to the alterations in the vessels. Analogous lesions to the arteries have been found in the liver and kidneys. The changes in the cells, however, seem to be of complex pathogeny and to be due less to compression by the proliferation of the neuroglia than to troubles of assimilation, whether due to disturbance of circulation or to the action of toxins in the blood. Ballet, however, recognizes that other observers, notably Binswanger, think that the primary alterations are in the cells, basing their opinions upon examinations made in the early stages of the disease. Ballet, therefore, questions whether the process in general paralysis may not vary according to the cases. In the liver we note that lesions may vary according to the intensity of the action of the toxins or poisons, the cells in some cases degenerating before the vessels and the connective tissue showing no changes, as in phosphorus poisoning, while in other cases the poisoning is slower and the cells are affected only later. This problem, however, can be settled only by careful histological study. It has been urged as against the syphilitic origin of general paralysis that the lesions of that disease, being diffuse, do not resemble ordinary syphilitic lesions which are circumscribed and in nodular or gummatous form. This, Ballet thinks, is based upon an ignorance of pathology, for, in certain organs, especially the spinal cord, syphilitic lesions often are diffuse. The vascular alterations in general paralysis seem to him to show, in all probability, an infectious origin. The clinical statistics, it is true, are often taken under bad conditions. Their importance becomes more striking when we compare the percentage of syphilis or general paralysis with the percentage in other forms of insanity, such as melancholia. Statistics taken in asylums and in the hospital class are often defective on account of the difficulty of obtaining accurate knowledge of the early history of the patient. In the better class, however, statistics can be more accurate, and Ballet has found that, in almost all cases which he has observed under these conditions, there were specific antecedents. Furthermore, this belief is strengthened by the fact that in women with general paralysis there is almost invariably a previous specific history; and he again emphasizes the fact that in the juvenile cases such a history is almost always to be obtained. In conclusion, he criticises the statistics recently given by Mairet and Vires, who have tried to show that general paralysis was sometimes due to arthritism and who found syphilis in only twenty-three per cent. of their cases. The cases due to uncomplicated arthritism, however, are of questionable diagnosis. Their statistics are based upon asylum cases, where special investigation was not made of physiology, and they have selected only a small portion of the cases under observation.

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[8] Abstract in American Journal of Insanity, January, 1898.

[9] Abstract in Journal of Nervous and Mental Diseases, February, 1898.

[10] Annales Medico-psycholog., January, 1898.

[11] Loc. cit., May, 1898.

(To be continued.)

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

TWELFTH Annual Meeting, held at Cranston's Hotel, West Point, N. Y., June 7 and 8, 1898.

FIRST DAY. — TUESDAY.

The President, DR. J. WILLIAM WHITE, of Philadelphia, in the chair.

DR. ROSWELL PARK, of Buffalo, read a paper on

THE INDICATIONS FOR OPERATION IN RENAL TUBERCULOSIS.

The author stated that when once the conclusion is reached that the kidney is the seat of a tuberculous lesion, the sooner that organ is removed the better, providing only and always that there be in the other kidney or elsewhere no lesion of a similar character which would serve as a contraindication.

It is possible only in exceptional instances to make the diagnosis so early that one can fully rely upon non-surgical measures, meaning thereby the use of drugs and perhaps of tuberculin. It is also most exceptional to meet with a kidney where the lesion is so isolated that one can safely remove but a portion of the organ.

The question as to the general propriety of operation must be first passed upon; then the exact diagnosis should be made, if possible, as to whether one kidney is involved or both. If it can be clearly established that both organs are affected with this disease, the removal of one will be of little benefit, and often rather a detriment. We have then to determine whether there is any serious tuberculous disease elsewhere; especially is this true of the lungs and other inaccessible regions of the body. It is not necessarily so true of lesions in parts which may be safely attacked, as, for instance, lymphatic nodes near the surface, the long bones, the joints and the skin.

When it can be positively established that there is also tubercular disease of the prostate, seminal vesicles and perhaps of the testes, the operation is of doubtful propriety, though sometimes with regard to the latter we may apply the same rule as pertains to lesions of other accessible parts of the body. When the ovaries are diseased, they may possibly be removed at the same time as the kidney; when other deep organs are involved, the operation is most expedient. When the peritoneum is at fault, we may bear in mind the advantage which accrues from opening this cavity, and perhaps may decide to remove the kidney by the peritoneal route.

Operations upon the kidney are of gravity just in proportion to the precariousness of the condition which necessitates them: they should always be so regarded and so represented. To remove the kidney ordinarily is easy and is not a tedious operation, but when it comes to the dissection and separation of the ureter, when its removal is indicated, the measure seriously prolongs the operation — sometimes so much so as to endanger life. What it is best to do, therefore, under these circumstances, should really be left to the decision of the surgeon at the time of the operation, rather than to be carried out upon any preconceived plan.

Partial nephrectomy is contraindicated in theory — although one must confess that it is sometimes apparently successful in practice — because the percentage of cases in which the kidney is the seat of a single or isolated lesion is exceedingly small as compared with that where the lesions are multiple and disseminated. There is certainly reason to think that after the early removal of a tuberculous kidney, the progress of the infection to the rest of the genito-urinary tract must be at least delayed, and is sometimes apparently checked. This is in accordance with the experience of a number of competent observers.

As regards the selection of the operation, the surgeon has the choice between the intra- and extra-peritoneal routes. The intra peritoneal route will be selected principally only in the presence of certain specific indications; it will often be called for in the case of little children, this being the only method by which the enlarged kidney can be safely removed in such instances. Whether the operator shall go through the mesentery or the mesocolon is a matter of minor importance, and must be decided entirely according to the emplacement of the diseased organ.

Of the extra-peritoneal methods, most operators now select the oblique in preference to the lumbar incision, and for reasons which are quite obvious. The beauty of the method with which König's name is now so commonly connected is the extent to which the incision can be carried; if the size of the mass requires it, it may be extended to the external border of the rectus muscle on the affected side. For ease and convenience in almost every respect it certainly takes precedence over every other method, save in the rare instances in which the kidney is easily shelled out after opening the abdomen. Cases occasionally occur in which it will be of advantage to perform the operation in two sittings.

THE OTHER KIDNEY IN NEPHRECTOMY FOR RENAL TUBERCULOSIS.

Dr. J. P. Bryson, of St. Louis, read a paper on this subject. He first reported in detail seven cases of nephrectomy for tuberculosis of the kidney and ureter. In all of these cases the lumbar, or extra-peritoneal, operation was done, and in no instance was the peritoneal cavity entered. The history of two of the cases seemed to indicate that there was danger in merely exposing and handling a kidney which gives little or no evidence, on inspection, of being tuberculous. In one instance the organ, which was found to be displaced, was stripped of its *capsula adiposa* and returned to its proper position without suturing, yet the slight traumatism thus inflicted resulted in lighting up an acute stage of the latent disease, and the formation of para- and intra-nephritic abscesses. In the other case, two kangaroo-tendon sutures were inserted, and a large drainage-tube placed behind the kidney. Increased activity of the disease was quickly noticed. Those instances, Dr. Bryson said, may serve as a warning against a too free employment of exploratory lumbotomy to ascertain the condition of the other kidney, when removal of its fellow is contemplated. Here, as in other and more accessible organs, that is, the prostate and the testicle, a very slight trauma may serve to light into an active and destructive inflammation a long latent and even concealed tuberculous focus, and against this neither the strictest asepsis nor the best skill and celerity of the surgeon can afford an adequate defence.

Dr. Bryson said that in all of his cases, with one exception, the pathological diagnosis depended wholly on the clinical history, the observation of the evolution of the disease for a greater or lesser time and vesical examination, in which the cystoscope played a major part. The presence of a functionating kidney on the opposite side was in these cases based on palpation of the lumbar region, repeated cystoscopic observation of the ureteral orifices, the occasional blocking of the ureteral orifice of the affected side and the urinalysis and urinoscopy during these periods, together with the clinical signs of fever and pain in the loin.

In the first six cases the history, the clinical observations before and after the operation, the examination made of the specimens removed and the progress of the cases pointed to the bladder and urethra and (in the male) the prostate and seminal vesicles as the points primarily attacked. In the seventh case no positive inference regarding the origin of the disease could be drawn, as the whole clinical picture was clouded by anomalous nervous symptoms and morphinism. In five of these cases the disease, beginning in the bladder, travelled upwards along the ureter and infected the kidney, and in three of these, where the opposite organ was almost certainly affected subsequently, absence of disease about the ureteral orifice no less than absence of a ureteral symptomatology seemed to justify the inference of a hematic route of infection for the organ last involved.

In six of his cases the nephrectomy was followed by improvement in elimination done by the remaining kidney, in spite of the fact that in three of those cases the organ showed evidences of being similarly diseased, though to a lesser degree. In one instance this improvement failed to follow nephrotomy and drainage, but promptly appeared and progressed after nephrectomy. In two cases improvement in strength, health and assimilation promptly followed primary nephrectomy.

Dr. F. Tilden Brown, of New York, said that Dr. Park's paper was entirely in accord with his own experience on the subject of renal tuberculosis. The speaker expressed the opinion that the removal of a kidney with advanced tuberculosis often proved quite satisfactory, even in cases where it was certain that tuberculous foci existed elsewhere in the body.

Dr. James Bell, of Montreal, said he was rather surprised at the unanimity with which the several speakers had indorsed the extra-peritoneal route. His own experience in dealing with large kidneys, especially when they were much adherent or of the suppurative variety, had led him to the belief that the abdominal route was the more satisfactory, as it enabled one to determine the condition of the opposite kidney by palpation, and also to ligate the renal vessels with greater care. Dr. Bell said his experience with nephrectomy for renal tuberculosis was very limited, as he had always felt rather timid about removing such kidneys after the disease had advanced to any extent.

Dr. Samuel Alexander, of New York, said that his experience with total nephrectomy for tuberculosis of the kidney was limited to cases in which the kidney was removed on account of so extensive a degeneration that something had to be done, and in such cases he preferred nephrectomy to nephrotomy. The ultimate prospects in such cases, however, he did not consider very good, for the reason that both kidneys were usually involved. Furthermore, the operation, as a rule, did not relieve the vesical symptoms.

Dr. Edward L. Keyes, of New York, said the whole question of tuberculosis of the genito urinary tract and its treatment rested more on diagnostic acumen than upon operative skill; each case must be judged on its own merits as to when we shall act and what we shall do.

Dr. Park, in closing, said he considered it just as proper to attack a tuberculous kidney as he did to attack a tuberculous joint or a fistula-in-ano. We remove a tuberculous kidney in order to get rid of a positive menace to health, sometimes even with the hope of curing the patient, sometimes only to give temporary relief. Whenever possible, nephrectomy should be preferred in these cases to nephrotomy, because by removing the kidney we lessen the danger of dissemination of the disease. As regards the mode of operating, the speaker said that while the abdominal route was simple and even preferable under certain conditions, he did not think it possessed the advantages of the extra-peritoneal route.

Dr. Bryson, in closing, said he had never operated on a kidney for tuberculosis unless he had good reason to believe that a tuberculous focus existed there which was not getting its proper vent. He was perfectly in accord with the views of Tuffier, who holds that an operation should not be done until general treatment has been given a satisfactory trial. The speaker said he had seen some remarkable recoveries from general medication, especially from the use of the hypophosphites, creosote and guaiacol.

SYPHILIS, AND SOME AFFECTIONS WHICH RESEMBLE IT.

Dr. J. A. Fordyce, of New York, read a paper on this subject, and showed numerous photographs illustrating the conditions referred to. He stated that while, as a rule, syphilis reveals itself by clearly defined features and symptoms, cases are not infrequently met with which demand all the experience and knowledge of the expert to determine their true nature. It may be truthfully stated that no other condition, with the possible exception of tuberculosis, presents such widely diversified phenomena and has such important relationship with both internal medicine and surgery. We cannot always appeal with success to the microscope to settle doubtful cases, even where the lesions are accessible to excision. We have fortunately in the therapeutic test a potent means of determining the nature of certain doubtful cases, but even here there are possibilities of error which occasionally confront us.

Dr. Fordyce said that while it was frequently possible to make a diagnosis of syphilis with the appearance of the initial sore, experience had taught him to be conservative in this respect, and he generally advises the patient to await the development of positive signs of constitutional infection before beginning the use of mercury.

Error is more apt to arise in the diagnosis of extragenital chancres, for the possibility of primary syphilis away from the genital organs is not always borne in mind by the practitioner. The speaker said he personally knew of several instances in which the primary sore of the lip and face was excised under the mistaken diagnosis of epithelioma, the subsequent development of constitutional symptoms rendering the character of the disease unmistakable.

In the diagnosis of the secondary stage of syphilis, the acute exanthemata, drug eruptions and a multitude of non-venereal eruptions may confuse the physician if all the concomitant symptoms are not given proper consideration. The speaker said he recalled one instance where a patient with a small-pox eruption was admitted to one of our large city hospitals with the erroneous diagnosis of syphilis. The mistake was not discovered until the death of the patient and the outbreak of variola among a number of the exposed patients and hospital attendants.

The iodides in susceptible individuals sometimes produce pustular and ulcerative eruptions which simulate very closely the rupial lesions in syphilis, and as the iodides are employed to combat such an eruption, it is sometimes difficult to distinguish the one from the other.

In the so-called tertiary stage of syphilis the disease is again prone to localize itself, and can, in the skin, imitate tuberculous processes or malignant disease; in the subcutaneous tissues, new growths of malignant nature; in bone, tuberculosis or sarcoma; in the testes, tuberculosis or other neoplasms. Syphilis of the tongue is one of the most common antecedents of cancer of this organ, it being sometimes difficult to determine when syphilis ceases and when epithelioma begins.

CASES OF RECURRENCE OF STONE IN THE BLADDER.

Dr. Arthur T. Cabot, of Boston, read a paper on this subject. His observations were based on a series of 135 operations which he had done for stone upon 119 patients. In this series there were 115 litholapaxies, with four deaths; thirteen suprapubic lithotomies with four deaths; two median lithotomies, with one death, and two vaginal lithotomies, with one death. The series only included cases of formal operation under anesthesia, and took no note of many instances in which a crushing or pumping operation had been done, with or without cocaine, for the removal of small recurrent stones or for retained fragments.

In the above series, there were two cases where a uric-acid stone re-formed in consequence of the persistence of the diathesis that led to the original formation. On one of these patients he had operated twice, and on the other three times. The series included nineteen instances in which a phosphatic stone appeared some months or years after the removal of a primary stone. In two or three instances the primary stone was a uric-acid calculus; in all the other cases it was phosphatic. In six of these cases the previous operation had been done by some other operator.

This recurrence of a phosphatic stone, Dr. Cabot said, may be due to the persistently alkaline condition of the urine, but it is much more common as the result of some local condition. In two or three of the cases the recurrence might perhaps be regarded as the result of an incomplete operation, leaving a fragment to serve as a nucleus for a new stone. In two cases, sacculated stones which lay concealed in pockets in the vesical wall gave rise to repeated stone formation in the bladder cavity. Finally, it is notorious that tumors and granulating surfaces within the bladder are prone to be incrusted with salts. The crystals that exist in the urine do not tend to cohere and form a stone excepting in the presence of albuminous material. The constant reappearance of a phosphatic stone in the bladder usually indicates the existence of some local causes which should be sought and removed. The suprapubic route affords the best opportunity for inspection and for the operative treatment of any condition found.

Dr. William K. Otis, of New York, said that he also was in favor of resorting to litholapaxy whenever possible, because of the lower mortality of the operation and because the subsequent discomfort to the patient was much less than after any of the other operations for stone; at the same time, it did not prevent or interfere with the performance of any future operation which might be demanded. In connection with this subject, Dr. Otis exhibited a calculus which he had removed from the bladder of a man thirty-eight years old; the nucleus of the stone was a piece of chewing-gum which the man had introduced into his urethea about four years previous to the operation.

Dr. Keyes said the continual recurrence of phosphatic stone was easily understood in those cases where there was some obstructive condition, and the toilet of the bladder was not properly effected.

A MODIFICATION OF THE TECHNIQUE OF THE OPERATION OF PERINEAL SECTION, WITH A VIEW TO SIMPLIFYING THE PROCESS; NEW INSTRUMENTS DESCRIBED; REPORT OF ONE HUNDRED AND SIXTEEN CASES,

by Dr. Orville Horwitz, of Philadelphia.

The author, in his paper, confined himself to a consideration of but two conditions: (1) where the membranous urethra is the seat of stricture of so small a calibre that a filiform bougie only can be passed, and (2) where the passage of any instrument is impossible, and the bladder must be reached without the aid of a guide.

Dr. Horwitz described his operation of perineal section, which was a modification of that known as the "Wheelhouse" operation, simplified by the use of a perineal staff of his own contrivance. This instrument consisted of two blades, in close approximation, which together form a smooth staff, with a thumbscrew at one end by means of which the blades may be readily separated. The instrument works upon the same principle as the Otis dilating urethrotome. The distal end of the staff terminates in a rounded nut, which can be removed and replaced by a whip filiform. The filiform is employed when it is not possible to insinuate the whip bougie, so it will be observed that the staff can be used with either an ordinary filiform or with a whip bougie, or even without a guide.

Dr. George K. Swinburne, of New York, reported in detail

A CASE OF CYSTITIS DUE TO COLON BACILLUS, COMPLICATED BY PHOSPHATIC CALCULI.

Dr. J. R. Hayden, of New York, read the following paper on

EXTERNAL URETHROTOMY.

The following points in technique were emphasized by Dr. Hayden:

(1) *Division of the Stricture.* — All of the stricture tissue should be completely divided in the median line, not only on the floor but also on the roof of the canal. In order to ascertain whether the division of the tissues has been complete, the index-finger, with its palmar surface directed upwards, should be passed into the perineal wound and down to healthy urethra, well in front of the stricture, and then backward on the roof of the canal into the bladder; this will readily detect any bands or masses which have not been thoroughly divided. At the same time the dilatation of the posterior urethra with the finger prevents in a great measure post-operative tenesmus. The perineal operation being completed, a full-sized sound should be passed from the meatus into the bladder to ascertain that the whole length of the urethra is clear; if obstructions exist, they may be removed by meatotomy, internal urethrotomy or post-operative dilatation.

(2) *Bladder Drainage.* — This the author regarded as a most important measure after this operation. He advised the use of a large perineal tube, which keeps the bladder well drained, dilates the posterior urethra and to a certain extent the divided stricture, and is an ever-ready route for bladder irrigations, which are so essential in the treatment of urethro-cystitis. In from two to four days after the operation the tube is taken out, washed and replaced; it is removed permanently on the fifth to seventh day, when the patient is allowed to be up and about. In the majority of the cases all the urine is passed by the urethra in about one week after the removal of the tube, but in some the urethral wound remains patulous for several weeks.

(3) *Post-Operative Dilatation.* — When the tube is first taken out for cleaning, a medium-sized sound is passed into the bladder and held there for about a minute: this is repeated every second or third day until the perineal wound has cicatrized, and the urethra takes a No. 28 to 30 (French) sound with ease, according to the case, when the intervals are made longer.

(4) *Treatment of the Perineal Wound.* — The perineal wound should be personally inspected every day to see that it is healing solidly from the bottom by firm, healthy granulations, and is not allowed to bridge over in places, or fill up with pale, flabby tissue. This can be prevented by running the finger firmly through the bottom of the wound from end to end. Exuberant granulations are removed by the nitrate of silver stick or curved scissors and the wound dressed lightly with gauze.

A CONSIDERATION OF THE URINARY DISTANCE AS A DIAGNOSTIC FACTOR OF PROSTATIC HYPERTROPHY.

Dr. E. L. Keyes, of New York, read a paper with this title. The following were his conclusions:

(1) The urinary distance varies in the adult healthy male from something over six inches to something under ten inches, but may be honestly averaged at eight inches.

(2) The shorter lengths are found in short individuals having a small penis. A large organ naturally contains a long urethra, and this is most certainly the case if the individual be tall.

(3) The age of the individual seems to cause a very moderate increase in the urethral length, irrespective of disease.

(4) In prostatic hypertrophy the urinary distance averages more than eight inches, and is longer in cases of peripheral general hypertrophy than where the enlargement is median or in cases of bar.

(5) In a doubtful case, a consideration of the urinary distance may become an important element in the diagnosis.

Dr. Eugene Fuller, of New York, suggested that measurements of the urinary distance would be more valuable, for diagnostic purposes, if we disregarded absolutely the penile portion of the urethra, and confined ourselves to measuring the distance between the point where the beak of the instrument enters the triangular ligament and the point where urine begins to flow. This method would give us a set of measurements which would prove less confusing than where the entire length of the urethra was taken. In old men, where the muscles of the penis have lost their tone and the organ possesses little erectile power, it probably becomes longer than in young men.

Dr. Cabot said we occasionally find cases where it is extremely difficult, by rectal touch, to make out with any degree of accuracy the size of the prostate. He reported a striking example of this which had recently come under his observation, where a supposed hypertrophied prostate proved to be a small bladder, with thickened walls.

Dr. W. N. Wishard, of Indianapolis, called attention to the fact that the quantity of residual urine varied in an individual case, depending on the amount of prostatic congestion, and that this would produce more or less variation in the urinary distance.

Dr. Bryson said that in certain cases of prostatic overgrowth associated with anterior and lateral malformation of the organ, the prostate may be very large and yet the urinary distance may be comparatively small.

Dr. Keyes, in closing, said that the method of measuring the urinary distance in prostatics with the soft catheter was reasonably accurate and did not inflict any injury on the patient.

RECOVERY, WITH RESTORATION OF THE VESICAL FUNCTION FOLLOWING TOTAL EXTIRPATION OF THE PROSTATE AND RESECTION OF THE BLADDER FOR MALIGNANT DISEASE.

Dr. Eugene Fuller, of New York, read a paper with this title, and reported in detail two cases in which he had performed this operation with success. He stated that malignant disease of the prostate is generally considered to be an affection beyond the realm of direct surgical work. Most authors state that although on a number of occasions attempts to radically extirpate the disease have been made, yet the results have been so bad or indifferent as to hardly warrant further effort in that direction. The course of treatment ordinarily laid down is to do practically nothing until the disease blocks the vesical outlet, and then to perform suprapubic cystotomy, establish a permanent suprapubic urinary fistula, and await the patient's death, which is usually due to a blocking of the ureters or bowel, or through sepsis, or through the metastatic involvement of other organs, especially the liver.

Dr. Fuller said there was no doubt that radical surgical interference was contraindicated after the disease had become extensive enough to involve the rectal wall, the post-peritoneal lymphatics, the seminal vesicles or the posterior bladder wall beyond the trigonum. If, however, such was not the case, then an attempt should be made to remove the structures which are the seat of the disease, unless perhaps the subject be a child, for in children malignant disease in this region is so rapid in its progress that no radical operation is liable to do more than very temporarily stay its progress.

(To be continued.)

ANNUAL MEETING AND DINNER OF THE BOSTON CITY HOSPITAL CLUB, FEBRUARY 2, 1898.

GEO. W. GAY, M.D., PRESIDENT.

(Concluded from No. 17, p. 421.)

You have chosen to be a doctor. Your education, your training and your devotion to your profession are your capital. If you are wise, you will regard any surplus income from that capital as a trust, to be invested only as you would invest trust funds from any other source.

The first principle should be absolute safety, even although the rate of interest be small. If you are not willing now to adopt this policy, my advice would be to retire from your profession and go down-town and join the already too large army of men whose lives are given up to speculation. This spirit of speculation abroad — this desire to get something for nothing — is the bane of our business world. It undermines and rots the characters and is a curse to the lives of men of affairs who engage in it. What a blight it must be to one in your profession. How can he, whose mind is on the ticker, be a safe guide at the bedside of the sick?

You ask, What is a safe investment? Perhaps it would be easier to say what is not. As a rule, a loan to your friends, without ample security, is not safe. Even with security, a loan of your first earned money to a friend, to be used in business, is unwise.

If it is little you had better put it in a savings bank and here you can, to advantage, exercise good judgment by studying the reports of the savings banks, examine the list of managers and put your money in the bank that is the strongest and safest. Happily, nearly all our banks in Massachusetts are entirely safe.

But the best investment you can make is to buy a home (of course, every good doctor is married or will be, as soon as he can afford it). If he isn't, he needs a home. Take time to look over the field carefully. Probably you will think it better to buy rather than to build. Bear in mind, however, that bricks and mortar depreciate in value from the day they are put up, while in growing communities land appreciates.

Therefore, get a good bit of land; get it where you want it and where you can put up better buildings when you have earned more money. While, as a rule, a debt is to be avoided, you will make no mistake in buying a home as soon as you have accumulated enough to make a payment so respectable that you can buy at the lowest price. Secure the balance by mortgage. You will then have a place to safely put every dollar you can spare until your home is paid for, and by this time the increased value of the good bit of land has probably more than offset the shrinkage in your buildings, so that your investment has been not only safe but profitable. Besides, you are a real estate owner and taxpayer in your town or city, which fact always gives a feeling of permanency in regard to professional men as well as others. It is needless to say anything further on this matter, for by this time your business habits will be formed. Your trust investments are accumulating, and will continue to do so.

I am a firm believer in the future of Boston and New England, and I am quite sure your money will be as profitably, and much more safely, invested at home than if sent to the North, South, East or West. We have in the past spread our savings broadcast all over the country; we have poured out our money to build railroads through sections where the inhabitants are miles apart, simply because some glib promoter could sell more bonds per mile than the whole cost of the road, and we bought not only the bonds but the stock, to our sorrow. Our hard earnings have been buried in every State and Territory west of the Mississippi, even down in Old Mexico. We have sown too freely where we shall never reap. Is it any wonder that some have feared that New England was losing in the race? Now, let us begin to invest at home. Develop your own town or city, thus improving the possibilities of your own career, besides earning for yourselves a right to feel a patriotic pride in being a part of the growth and prosperity of your own section.

I trust I shall not be understood to lay too much stress on the money-making possibilities of life. Only a very low order of talent is required simply to accumulate money. Any healthy human clod can do it, if he will. It is only a question of working and saving, steadily persisted in.

But how to make the most of your opportunities, using your talents, your strength, your energy, so as to bring the greatest return, not to yourself only, but to all with whom you come in contact — that is the problem. I do not agree with the doctrine that business is simply a struggle where every man tries to down the other. The greatest and most enduring successes will be made by those who aim to win by rendering equivalent service and building up rather than tearing down. So I would subordinate all business action to the demands of good citizenship, to the legitimate claims of family and friends. Yet no man can long help his friends financially who does not keep himself strong by a strict adherence to sound principles in the conduct of his own affairs. If he departs from them, he becomes also helpless.

I fear I have overtaxed your patience. I've told you nothing you did not know before. My apology is that I was instructed to talk business and in that science, there have been no new discoveries in my generation.

THE PRESIDENT: How often do we hear the remark made, that this is a great country. Were some of you asked to locate the central meridian, or central point between its extreme eastern and western boundaries, I will venture to say that you would place it as I did, in the vicinity of the Rocky Mountains. I have it upon the authority of Hon. Charles S. Hamlin, late Assistant Secretary of the Treasury, that it lies in the Pacific Ocean about 250 miles west of San Francisco. He also is my authority for the statement that in June in Summer Solstice the sun is shining for twenty minutes at Eastport, Me., before it has set on Atton Island, which is our most western boundary in the Northern Pacific Ocean.

The time was not so very long ago, in fact within the memory of some of the antiques present (you may know us by the innocent and guileless expression on our faces) when Ohio was pretty far west. It is so no longer. In fact that great State is so near to us, that we don't hesitate to invite one of their leading surgeons to run over to Boston, and read a paper before one of our medical societies, which you will be happy to know he is going to do to-morrow evening. We are fortunate in having this gentleman with us to-night, and I have asked him to say a few words for the profession of the Great Central West, an empire in itself. I have the pleasure of introducing Dr. Dudley P. Allen, of Cleveland.

DR. DUDLEY P. ALLEN: It is a great pleasure for me to be with you here to-night, and for two reasons: first, because I esteem it an honor thus to partake as a guest of your hospitality, and second, because of the final accomplishment of my journey hither through almost impassable snow. I have travelled partly by train, partly on foot, and partly on snowshoes. I have almost cause to feel like the old woodsman of Michigan who was visited by a Bostonian. The old man said, "Neighbor, where did you come from?" "Boston," was the reply. "Where is that?" said the woodsman. On being told that it was way down in New England, he said, "But don't you hate to live so far away?" Would you pardon me for sympathizing in a similar manner with you? My journey hither was not wholly unfraught with benefits to the profession of Boston. The only occupant of the sleeping-car besides myself was a very attractive and cultured young lady. Through sympathy for her loneliness, and I may add, my own, I helped her over snow-drifts, and in the absence of a dining-car foraged for provisions. As we approached our journey's end, she said to me bashfully: "Do you know where Harrison Avenue is?" I said I did. She then inquired if I knew where the City Hospital was and I confessed that I had heard of it. She then volunteered the information that she came from Canada and was on her way to Boston to become a nurse. I assured her that the career was a worthy one and sought to comfort her by saying that she would soon feel less of a stranger in the United States, since we intended to annex Canada. This proposition did not meet a cordial response, but her reproachful glance was less keen when I ventured to interpose that should this project fail I had no hesitation in prophesying that we should doubtless succeed in annexing certain small and individual sections of it. Having reached the station I secured for her a cab, found her baggage and started her on her way in safety. Fancy my feelings on being unable for the space of one-half hour in this great metropolis to find for myself a second cab. It was on this account that I was late in arriving at this dinner and your Chairman having introduced a guest from Greater New York as from the second city of the world, the circumstance of the cab has made me wonder if he did not desire to infer that Cleveland was the first. Certainly, gentlemen, we have more than one cab to meet express trains at our stations.

I am asked to respond to the toast, "The Medical Profession of the Great Middle West." Before doing so it may be well for me to give you something of the geography of that section, since there prevails in the West an impression that Bostonians rarely know which is most remote, Chicago, Omaha or Cleveland. For your information I will say that Cleveland is about fifty miles west of Omaha. When the kings of England were granting charters to their colonies in North America, the northern and southern boundaries were somewhat accurately fixed. The western boundaries, however, wandered off indefinitely towards the setting sun. At the close of the Revolutionary War, to satisfy the western pretensions of Connecticut, that State was granted a strip of land about seventy miles wide and one hundred and fifty miles long, stretching across what is now Northern Ohio. Being reserved for Connecticut, and placed under the control of the Connecticut Land Company, this region received the name of the Western Reserve, and it is as a specimen of western reserve that I speak before you here to-night, of which Mr. Evarts, when Secretary of State, on being importuned in behalf of an office-seeker from this section of Ohio, said he had heard a great deal of the western reserve, but never saw any of it.

The chief city of the Western Reserve is that of Cleveland, and I shall say something of it, since the region has a somewhat peculiar history. The early settlers of this region came chiefly from Connecticut and Western Massachusetts. As they journeyed slowly westward with their ox-teams they passed by regions equally fertile, and farms no more expensive than those to which they were going. Having purchased their homes, however, from the Connecticut Land Company before they left New England, they pressed onward, and thus in the wilderness, separated by a long journey from the population of the Atlantic sea-board, they established a new community, having all the best characteristics which have marked New England. I question, gentlemen, if there is among you here to-night, a man of purer New England blood than myself, or one more acquainted with her customs. In the old village church I used to go to morning service at 10 o'clock, to Sunday-school at 12 M.; to afternoon service at 1 P. M., and to prayer meeting "at early candle lighting." Surrounding the church was the "graveyard," and close by was the Academy, presided over by some recent college graduate renowned for scholarship. The Reserve remained there an isolated community until the introduction of rapid transit by the completion of the Erie Canal. Marked by intelligence, character and energy, the Reserve has herself become the mother of new colonies and has through her children stamped her impress upon much that is best in Southern Michigan, Northern Illinois, Southern Wisconsin, Iowa and Minnesota. That which has characterized her in citizenship has characterized her also in medicine. In an early day the profession were men of character and high purpose, but were subjected to those disadvantages and hardships incident to pioneer life. From my grandfather, one of the earliest physicians of Ohio, and the first to be appointed Surgeon of the Western Army in the War of 1812, I heard many anecdotes, until my childish fancy scarcely distinguished between Daniel Boone, Natty Bumpo, and many of the early physicians. One instance alone will serve to illustrate early experiences. Obliged to cross a stream, the doctor, removing his clothing, had fastened it to his horse's neck that it might not get wet. Swimming with the horse across the river, he attempted to pull his horse up the steep bank, when the bridle slipped off and the horse and clothing retreated rapidly to the other shore, leaving the doctor, clad only in the garb of Eden.

Early in the forties medical schools* were established so that professional education were much benefited. Among the teachers of that period was a Dr. Delamater, who came from Western Massachusetts. As a man of experience, broad scholarship, sound judgment and professional reputation he had but few equals in the United States, and among the older practitioners, one may still hear him quoted as an authority. Associated with him was a surgeon named Ackley. Of rough exterior and brusque of speech, he was a man of undoubted ability. One of his assistants told me that not long after 1840, he saw Dr. Ackley make a complete vaginal extirpation of the uterus. The Reserve is as full of stories of Ackley as Edinburgh is of Syme. They are of every sort. Once while hunting, a German on the other side of the river complained to the doctor, that the latter's dog was retrieving the ducks which he shot. The doctor said he could not prevent this, but the German should have his ducks. Shortly afterwards, acting on a threat, the German filled the dog full of shot, whereupon Ackley whirled and filled the German full of duck shot. The next day the surgeon had the sweet satisfaction of seeing the German, who had travelled forty miles, enter his office, and of picking from his back the duck shot and charging for it a good round fee. One more incident will suffice. Dr. Ackley had secured a gift of twenty thousand dollars, with which to erect a medical college, and had deposited it in a bank for safe keeping. Immediately the bank became insolvent and closed its doors. The doctor demanded the money and was refused. He secured a crowbar, chisel and a sledge-hammer, and such was his reputation that no man ventured to interpose. The doctor demolished the vault, secured his twenty thousand dollars, and with this sum erected the building which has become the Medical Department of Western Reserve University to-day.

The growth of medical education in the West has been much in the same lines as in the East. While we cannot lay claim to equal what you have done, or expect to overtake you, we still have done our utmost. I can speak more authoritatively of the Medical Department of Western Reserve University than of any other. The course of study has been gradually extended until it now occupies four years of between eight and nine months each year. The requirements for admission are by no means nominal and the Faculty and Trustees have voted that beginning with the year 1901 no one shall be admitted to the study of medicine who has not completed his junior year in a college of good standing. Men in the academic department of the University are now permitted in the senior year to elect nine out of fifteen hours per week in the medical department, thus enabling them to complete the combined eight years' academic and medical courses in seven years. Our medical building was constructed at a cost of $250,000, on plans suggested by your celebrated architect, Richardson, and is a worthy product of his genius. During the last year a four-story laboratory building has been added so that our facilities for laboratory work are very extensive. The New Lakeside Hospital, which has just been completed at a cost of about $575,000, is closely associated with the medical school, giving every facility for clinical instruction. It has a capacity of nearly three hundred beds and space sufficient for its erection of buildings to double the present numbers. It has a large amphitheatre with all that pertains to it, and a dispensary department with thirty-two rooms for examining and treating patients in addition to a waiting-room large enough to accommodate four hundred patients at one time. There is a large building of three stories solely for pathological investigations accommodating each department of the hospital. To describe one clinical department as an example of all will suffice. There is a single surgeon who has charge of the entire department. He has three private operating-rooms with others for storing, preparing and sterilizing dressings, and storage of instruments. He has four assistants, three of them advancing through externeship to the positions of second and first assistants, the period of service being eighteen months. Over these is a resident surgeon who must previously have had hospital training and considerable experience. He resides in the hospital, and receives a salary sufficient for his living. He must be a man on whom the chief can rely to relieve him of much responsibility and he may remain two, four or more years in the hospital according to the discretion of the visiting surgeon. The visiting surgeon is also director of the surgical department of the dispensary, nominating the surgeon in charge of this service. The man so nominated serves as alternate to the visiting surgeon during the latter's absence, performing the operations upon hospital patients and giving the public clinics. In addition to Lakeside Hospital the medical school has two other hospitals under its direction. The clinical material at the disposal of the school thus amounts during the year to nearly four hundred beds and for half of each school year this is increased to nearly six hundred beds. I have spoken thus in detail of the Medical Department of Western Reserve University in order to give you in as few words as possible an idea of what we are doing. We hope to be worthy of your good will and to deserve the support of the constituency which surrounds us, undertaking as we do to place the teaching of medicine in the Middle West upon an advanced basis. As I have already said, however, we do not equal what is done by Harvard University nor can we expect to overtake you, advancing rapidly as you are doing.

Years ago when I had finished college my health prevented for a time further study. Becoming a cowboy and following my cattle with no companions save my horse and my dog, I had ample opportunity to consider whether I should seek my fortunes in the West or come East and study a profession. I was not good enough to make a preacher, nor had I the kind of intellect which should be the possession of an able counsellor-at-law, nor the esthetic sense which is so essential to an architect or an artist. Nothing remained for me but to follow in the line of my inheritance and become a doctor. I decided to come home, and after careful inquiry as to the best school in the United States to study medicine, as a result of my investigations I selected Harvard and I have always been glad that I did so, and as I believed then, so I believe to-day that Harvard Medical School offers the best advantages for the study of medicine of any school in the United States. Honoring that great institution as I do, may I be permitted to express one regret, and that is, that Harvard Medical School and the Profession of Boston have not made their influence as widely felt as they are by opportunity and achievement entitled to do. You have in too great a degree been sectional. You have lighted your candle and put it under a bushel. You should have followed in the footsteps of your sires, who, lighting a beacon and placing it on yonder hill, spoke as it were in tongues of flames to the downtrodden everywhere. Their worthy sons emulating their example have on this spot suspended 'twixt heaven and earth a gilded dome, which, while marking a safe haven to the toilers of the sea, flashes its reflected brightness out on the western hills — who shall say how far? Thus you with all your inherited benefits, personal acquisitions and achievements should make Harvard Medical School and your great hospitals a boon, a blessing, a benediction to students from every State of the Union, to the profession of medicine throughout this entire republic, to the sick and suffering everywhere.

As I return to Boston and sit as an invited guest with the Alumni of this hospital it is with pleasure I look about me on faces of friends in whose achievements I take great personal pride and whose successes gave me untold pleasure. It is with pain, however, I mark the absence of your senior surgeon, Dr. Cheever, by whose teachings we have all profited. As I recall his words of instruction, the product of vast experience and great wisdom, given to us with unrivalled elegance and I might well add eloquence, there comes to my mind the words of Ruskin with which he introduced his "Modern Painters." After saying he would not by a single word detract from the immortal genius of Leonardo da Vinci, Michael Angelo or Raphael, and then calling attention to the great works of Turner to which adequate recognition had been denied, he says: "Let it not displease men that they are called amid the tumult and bustle of this busy life to listen for the few voices and watch for the few lamps which God hath tuned and lighted to charm and guide them that they may not by their sweetness, by their silence nor their light be their decoy." Thus in the presence of this assembly, every man of whom holds in remembrance his words of wisdom, I would pay this tribute. But I must not detain you longer. I cannot sit down, however, without expressing again my appreciation of your hospitality, and bringing to Harvard Medical School, the great Boston City Hospital and its illustrious Alumni, first in art, first in science and first in charity, from the medical profession of the great Middle West a greeting and their wishes for your prosperity.

The President: Every man who graduates from the surgical department of the City Hospital carries away a pocket case of surgical instruments, which he owes to the thoughtful generosity of the surgical father of all of us. You all know of the sad bereavement which befell him in the past summer, that prevents his being with us to-night. But I hope, gentlemen, that it will be a long time before this club forgets to pay its respects to one of its best friends and benefactors, and I ask you to rise in your seats and drink of the loving-cup to the health, happiness and long life of our good friend, Dr. Cheever.

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Recent Literature.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R.C.P., Emeritus Professor of Obstetric Medicine in King's College, London. Examiner in Midwifery to the Universities of Cambridge and London. Seventh American, from the Ninth English Edition. In one octavo volume of 700 pages, with 207 engravings and 7 full-page plates. Philadelphia and New York: Lea Brothers & Co.

It is unnecessary to say anything in praise of this well-known standard obstetrical work. Twenty-two years have elapsed since the first edition was published, and with this edition there has been a thorough revision of the text, many parts of which have been completely rewritten. Two new plates and seventeen woodcuts have been added, while several illustrations which seemed obsolete or unsatisfactory have been suppressed.

A Text-Book of Practical Therapeutics. With especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (seventh) edition. In one octavo volume of 770 pages, illustrated. Philadelphia and New York: Lea Brothers & Co. 1898.

This new (seventh) edition of Dr. Hare's Practical Therapeutics has been carefully revised and brought up to date. The text has been made to conform not only, as previously, to the Pharmacopeia of the United States, but also to the British Pharmacopeia, of 1898. The rapidly succeeding (annual) editions plainly attest the popularity of this text-book.

THE BOSTON

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THE BACTERIOLOGY OF ACUTE RHEUMATISM.

A noticeable contribution to the bacteriology of acute rheumatism has been made by Singer.[1] He regards it as an infectious disease, classing it alongside of other diseases whose infectious nature is known or admitted, such as influenza, typhoid fever and scarlatina. He considers as of some significance the occasional appearance of acute rheumatism epidemically, the transmission of the disease to the fetus by contagion, as in Jaccoud's cases, and the clinical course, so markedly resembling an infectious disease. He looks upon acute rheumatism as a hemic infection belonging to the same category as the pseudo-rheumatisms, and sometimes confounded with them. It is a general disease well indicated by the term rheumatic fever, which is a better term than rheumatic arthritis or articular rheumatism, as the symptom arthritis may be absent, or only come on after such other accidents as angina, endocarditis and erythema.

The affiliation of rheumatism with pyemia, he says, is very strict, and is manifested by the existence of arthrites supervening by irregular attacks, by the intermittent febrile condition, the profuse sweats, the icterus, the peptonuria, the cardiac and ocular complications, the cutaneous manifestations. Rheumatism belongs to the family of erysipelas, which sometimes alternates with it; of osteomyelitis which produces peri-articular edema; of the cryptogenetic septicopyemia of Von Leube, which so resembles acute rheumatism that the differential diagnosis is often impossible during life. Puerperal infection also offers many points of resemblance to acute rheumatism. Lastly, most of the pseudo-rheumatisms are due to pyogenic microbes, and especially blennorrhagic arthritis, which often resembles true rheumatism, and which has been considered a product of the metastasis of gonococci. For all these reasons, Singer insists that the pathogenic agent of rheumatism may belong to the group of pyogens. He thinks that pathologists have erred in attributing only a secondary importance to results already obtained, which all show that there exist pyogenic micrococci in the blood, the urine, the inflamed joints, the endocardial vegetations. These bacteria have not for their sole effect the production of pus, for they may give rise to a sero-fibrinous exudate; on the other hand, rheumatism is sometimes complicated with suppuration of the joints. Singer protests that to exclude from the category of acute rheumatism all these cases where known pathogenic bacteria are found is unscientific, and will, if persevered in, eventually leave nothing that we can call rheumatism.

This writer, then, believes himself justified in considering as the primary pathogenic agents of acute rheumatism the pyogenic micrococci which he has obtained in the living patient from the blood, urine, and intra-articular exudate, and from the lesions supervening as complications (erythema, endocarditis, etc.).

We have not space for a detail of Singer's bacteriological examinations; suffice it to say that in only a fraction of the cases was any positive result obtained. The bacteria most constantly found were the staphylococcus pyogenes albus, the streptococcus conglomeratus, and pyogenes. In only two out of twenty-four patients did the intra-articular exudate show the golden staphylococci. Singer affirms that the micrococcus may exist in the synovial membrane and the tissues around the joint without being present in the exudate; it secretes toxins which cause the swelling. He says that his showing is as good as that of the pseudo-rheumatisms, in fact, in blennorrhagic arthritis the examination of the exudate does not give more frequent positive results.

The bacteriuria of rheumatism is of some interest, the elimination of bacteria by the urine, however, is variable and inconstant. He has examined 692 times the urine of 85 patients; he obtained a positive result 136 times in 49 patients. He found 93 times the staphylococcus pyogenes albus, 14 times the staphylococcus pyogenes aureus, 13 times the staphylococcus cereus albus, 20 times the streptococcus conglomeratus, 15 times the streptococcus pyogenes, three times the bacterium coli.

The above brief synopsis of Singer's work does not throw much light on this vexed question of etiology. The number of authorities who have found microbes in the exudates and tissues in acute rheumatism is now considerable, but the medical world is not yet convinced that rheumatism is a bacterial disease, and awaits further demonstrations.

It may be remembered in this connection that ten years ago Guttman cultivated in gelatine an abundance of cocci, described as the staphylococcus aureus, taken from the knee-joint and pericardial sac of a patient said to have died of multiple acute articular rheumatism. As there were abscesses and purulent infiltrations in the kidneys and elsewhere, it is not clear why the case was reported as one of rheumatism instead of pyemia. The same year in which Guttman reported his case (1887) Dr. Alfred Maathe, of Stanley, England, reported the finding of both micrococci and bacilli in the blood and serous effusions accompanying acute and chronic rheumatism. The same year, Popon obtained micrococci from the blood of a person affected with acute rheumatism, propagated them by cultivation, and by inoculating rabbits claimed to produce well-characterized rheumatism in the animals, in whose blood and synovial fluid he found the same cocci.[2] Still later, Cornel and Babês found an elongated bacillus and a micrococcus in the exudate of a rheumatic patient; Klebs detected micrococci in the exudate in rheumatic endocarditis, and in three cases observed by Petrone, the serum obtained from the knee-joint in a case of acute rheumatism showed microbes similar to those previously described by Klebs. Dr. N. S. Davis in commenting on these observations judiciously remarks that it is probable that the serous effusions into the articulations and the blood of persons affected with acute articular rheumatism contains a variety of microbes. But whether any one of these microbes possesses specific etiological relations to the rheumatic disease, or whether they are identical with those found in the fluids and exudations connected with almost every variety of inflammation, cannot be decided till we have the results of a much more extended and varied series of investigations.

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[1] Ætiologie und Klinik des acuten Gelenk-rheumatismus.

In 1892 Herman Sahli, of Berne, found the golden staphylococcus in the synovial and pericardial membranes in a typical case of acute rheumatism, and inferred that this microbe was the pathogenic agent of the disease. The same year Grün, of Putney, discovered minute cocci in the blood in acute rheumatism, and Raymond and Netter, of Paris, reported cases of infectious pseudo-rheumatism in which the streptococcus pyogenes was found abundantly in the affected joints. Spruyt, in an elaborate article published in a Belgian medical journal in 1894, refers ordinary rheumatic attacks to the more common causes, and limits the influence of bacteria to such cases as are associated with other well-known infectious diseases, as gonorrhea and diphtheria.

Perhaps among the more important of the bacteriological studies of the past year on acute rheumatism, we may reckon the researches of Achalme and Thiroloix, as published in the *Annales de l'Institut Pasteur*, November 1897. In two well-marked cases, in the one of which the patient succumbed to cerebral rheumatism, in the other to endocarditis, and in six patients who survived an attack of acute articular rheumatism Achalme found in the liquid of the joints, in the endocardium, etc., an anaërobic bacillus, existing in great abundance and easily cultivated. In six other typical cases M. Thiroloix found the same microbe, in two cases only associated with micrococci This bacterium may be cultivated in milk, or milk and bouillon, and is best detected after cultivating in this medium a little of the suspected liquid. The bacillus stains well with anilin, and bears a marked resemblance to the bacillus anthracis. It is a mobile bacterium; its movements and growth are speedily interrupted by a couple of drops of a weak solution of sodium salicylate.

This microbe produces in animals the characteristic lesions. The guinea-pig, which is peculiarly sensitive, dies in from twenty to thirty-six hours. By inoculation of the thigh, there is formed a sac containing a reddish serosity; all the rest of the subcutaneous cellular tissue is infiltrated with a sanguinolent and gelatinous edema. Inoculation near the thoracic wall often causes a pleuritic sanguinolent exudation. Injection of a culture under the skin of a rabbit's ear produces a considerable edema of that organ, which becomes cold, and the exudate, which is a transparent serosity, contains the bacillus in abundance. If large quantities of the culture are injected, the animal dies in a few days of septicemia with intense congestion of the thoracic viscera. Injection in this animal of serum from inoculated guinea-pigs causes endocardial and pleuritic lesions resembling the lesions of visceral rheumatism in man. The bacillus of acute rheumatism readily associates with other microbes, as the streptococcus, and favors their entrance into the organism.[3]

Achalme is very confident that this is the pathogenic agent of acute rheumatism, and this claim is being tested by competent bacteriologists on the Continent.

At a meeting of the Société de Biologie, January 29, 1898, M. Triboulet stated that in eleven cases of acute rheumatism he had found a peculiar cocco-bacillus, and Apert said that in one patient he had recently detected the same microbe. Like Thiroloix's and Achalme's bacillus it is cultivated in milk which it coagulates by formation of lactic acid. Triboulet has produced pericarditis and endocarditis in animals with this microbe, but no true arthritic affections. Charrin, in commenting, said that it is not enough to obtain endocarditis by inoculating an animal with a microbe taken from a rheumatic patient; one is not warranted in affirming that the microbe is the pathogenic agent of rheumatism. Nor are experimenters warranted in formulating this conclusion, even if swelling of the joints is produced, seeing that many bacteria which have no relation whatever to rheumatism cause arthropathies when inoculated. The organism will often react similarly to widely different agents. He called attention to the researches of Professor Bouchard, who has almost invariably found in the blood and fluids of rheumatic patients common microbes and especially staphylococci, and declared that the problem of causation in this disease is yet far from a definite solution.

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[2] Quoted from Dr. N. S. Davis in Sajous' Annual, 1897.

[3] Semaine Médicale, 1897, p. 447.

Another Death from Plague in Vienna. — One of the nurses who took care of Herr Barisch, the original victim of bubonic plague in Vienna, died recently of the disease.

MEDICAL NOTES.

SMALL-POX IN VIRGINIA. — There are sixty-four small-pox patients in the pest-house of Norfolk County, Va., and October 31st fifteen cases had occurred in the city of Norfolk. The situation is reported to have caused considerable alarm, and compulsory vaccination and other measures are being put in force.

THE HEALTH OF OUR SOLDIERS. — An army surgeon in charge of a Division Hospital writes: "There is a similarity between camp and home life, and that is, when you utterly disregard the laws of hygiene you are liable to become sick. . . . Large doses of quinine, ten to twenty grains, seem to do the trick, when smaller doses long continued will not."

BUBONIC PLAGUE BROUGHT TO SAN FRANCISCO. — On October 28th, the French bark, *Duchesse Anne*, arrived at San Francisco from Hong Kong. Her captain and one of the sailors had fallen victims to bubonic plague during the voyage, and the vessel was in charge of the first officer. The vessel was ordered to Angel Island, where the crew were landed and detained. The vessel was taken to San Quentin, where she was thoroughly disinfected. Bubonic plague is always prevalent in Hong Kong at the time of year when the *Duchesse Anne* sailed — the middle of August — and this year has proved no exception. This occasion is the first for many years, however, in which it has been brought to the American coast.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, November 2, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 41, scarlet fever 25, measles 43, typhoid fever 11.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet to examine candidates for admission to the Massachusetts Medical Society, at No. 19 Boylston Place, on Thursday, November 10, 1898, at 2 P. M. Candidates will make personal application to the Secretary and present their medical diploma, or its equivalent, at least three days before the examination. For further particulars apply from 2 to 3 P. M. to John Dane, M.D., Secretary, No. 29 Marlborough Street, Boston.

DIPHTHERIA IN BOSTON. — The present unprecedentedly low mortality from diphtheria in Boston, which is extremely gratifying, is probably due to three factors, namely, the early diagnosis of the disease by the bacteriological examination, the introduction of antitoxin, and the excellent facilities for treatment afforded by the contagious department of the City Hospital.

EAST BOSTON MEDICAL SOCIETY. — A new medical society has been formed with the above name. The object of the society is to promote the professional, scientific and social improvement of its members, and to aid, in any manner, the advancement of the science and practice of medicine; also to aid in the maintenance of a friendly feeling and proper professional relations between its members and to keep the practise of medicine in that locality at a high standard. Any physician in good standing engaged in the practice of medicine in East Boston, who does not profess to practise medicine by any irregular or exclusive system, as spiritualism, homeopathy, allopathy, eclecticism or the like, and is not engaged in aiding in any manner whatsoever any species of charlatanism, may become an active member by receiving the vote of three-fourths of the members in good standing, signing and thereby agreeing to the by-laws, and paying the annual dues in advance. The officers consist of President, Dr. B. F. Campbell; Vice-President, Dr. W. H. Grainger; Secretary, Dr. D. B. Hurley; Treasurer, Dr. W. H. Ensworth; Member of Executive Committee, Dr. M. W. O'Keefe.

THE THIRD TRIP OF THE "BAY STATE." — The hospital ship *Bay State* arrived at Boston from Porto Rico, on October 28th, bringing one hundred and thirty-five sick and convalescent soldiers. One hundred and five were well enough to be given furloughs immediately on landing, and the remainder were sent to hospitals. There were two deaths on the way, both being from typhoid fever. One hundred and fifteen of the soldiers were members of the Sixth Massachusetts, and were taken on board the ship at Arecibo. Seventeen members of the First United States Engineer Corps were taken on at Ponce, and five men at Conanica. The *Bay State* left Conanica for home on October 27th, and had a rather rough trip. The *Bay State* will make no more trips under the auspices of the Volunteer Aid Association, and negotiations are in progress for her sale to the government for use as a hospital ship for the United States Army. The total cost of the ship was about $175,000, the equipment having cost about $125,000.

A WORD OF CAUTION. — The *Monthly Bulletin* of the State Board of Health of Connecticut contains the following timely warning from Dr. C. A. Lindsley, Secretary of the Board: "During the last few weeks many soldiers have returned from the numerous military camps convalescent from typhoid fever or taken down with it after their return. Each of these cases is a source of further infection, unless the precautions, which are now so well known and so effective, are carefully and scrupulously observed. The infective agent is a living germ which is thrown off in great abundance from every typhoid patient with the excretions from his bowels and kidneys. The immediate destruction of these germs by some sure disinfectant is the only means of safety. The importation of so many cases into the State, and their wide distribution in various places, will be very likely to cause additional local outbreaks of the disease if vigilant and unremitting attention is not given to the thorough disinfection of the discharges from the patients and of whatever of the bedding or clothing may be soiled by them. Circulars on the means of preventing and restricting typhoid fever will be sent freely to any persons on application.

Harvard's Oldest Living Graduate. — Dr. William L. Russell, of Barre, Mass., celebrated his ninety-ninth birthday on October 28th. Dr. Russell is the oldest living graduate of Harvard College, and has lived to be older than any Harvard graduate with but four exceptions. Dr. Russell visited Cambridge recently, where he was entertained at lunch by his granddaughter, Miss Bertha Howland. Among the guests was the doctor's brother, James, from Lowell, who is ninety-one years old. The journey to Cambridge and home was accomplished by Dr. Russell in one day, with comparatively little fatigue. He was born in the town of Carlisle, October 23, 1799, and is the oldest inhabitant of Barre; he retains his mental and physical faculties in a marked degree.

NEW YORK.

The Medical Society of the County of New York. — The annual election of the Medical Society of the County of New York, held October 24th, resulted as follows: President, Dr. S. O. Vanderpool; First Vice President, Dr. Henry C. Coe; Second Vice President, Dr. J. Clifton Edgar; Secretary, Dr. Wm. E. Bullard; Assistant Secretary, Dr. John V. D. Young; Treasurer, Dr. John S. Warren; Censors, Drs. E. B. Bronson, J. A. Fordyce, Eugene Fuller, H. T. Hanks and W. L. Carr. The election was one of the most largely attended in the history of the Society, the total number of ballots cast being 648. At the meeting an amendment to the constitution was adopted striking off the name of the editor of the "Medical Directory" as a permanent member of the Comitia Minora, for the reason that all the other members of the committee, which consists of the titular officers and the five censors, are elective.

A Graduation of Nurses. — The annual commencement exercises of the Training School for Nurses of the New York Post-Graduate Hospital were held on October 27th. Dr. George N. Miller presented the diplomas to the graduates, eighteen in number, and addresses were made by the President, Dr. D. B. St. John Roosa and by the Rev. J. L. Parks, rector of Calvary Episcopal Church.

The Circumterrestrial Bicyclists. — Dr. and Mrs. H. Darwin McIlrath, of Chicago, who are making a tour around the world with their bicycles, arrived from Southampton on October 27th, on the steamship *Pennland*. They started westward from Chicago on October 10, 1895, and claim to have travelled 28,000 miles on land alone.

The State Care of the Insane. — On October 28th the State Commission on Lunacy at Albany reported that during the fiscal year which has just ended there were 1,018 recoveries in the system of hospitals under its supervision, as against 951 in the year preceding. The average cost per capita for maintenance and treatment was $184.16, which, it is announced, is the lowest rate in any year since the inauguration of the State-care system.

Death of Col. George E. Waring. — The sad death of Col. George E. Waring, from yellow fever, recalls in a forcible manner that of Prof. Richard A. Proctor, the distinguished astronomer, ten years ago. The latter died at the Willard Parker Hospital on September 12th, 1888, and since then up to the present time there has not been a case of yellow fever in New York, except at quarantine. The Health Officer, Dr. Doty, on being questioned as to the action of his department in permitting the passengers of the *Yucatan*, on which Colonel Waring returned from Havana, to land within less time than the prescribed five days after leaving an infected port, explained that as late in the season as this such stringent regulations are usually dispensed with as unnecessary. Of course, at the time the vessel reached port there was nothing in Colonel Waring's condition to excite suspicion, and there had been no sickness on board during the voyage. Colonel Waring was as much a martyr to duty as any soldier who fell before Santiago. The death of such an eminent sanitarian is a national loss, but perhaps no more significant expression of his usefulness could be recorded than in the simple words "He gave New York clean streets."

The Advantages of Adipose. — A man was recently convicted in Jersey City of assault with intent to kill, who owes his escape from the gallows to the adiposity of his victim. At the trial Dr. A. J. Loomis, who attended the patient, testified that he was struck by three bullets, and that one of them, which lodged in the abdominal region, would probably have killed him had the peritoneal cavity not been protected by an enormous layer of fat, the wounded man weighing nearly 400 pounds.

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Miscellany.

A "HOWL OF EXECRATION" AGAINST CHRISTIAN SCIENCE.

Harold Frederic's executor in a cable letter to the *New York Times* frees his mind as follows:

> The adjourned inquest on Wednesday was mainly occupied in the dissection of Mrs. Altralie Mills, the lady who as a healer professed and yet did not profess to cure Frederic. One of the ablest young men at the bar, Theobald Mathew, a son of Judge Mathew, and himself a personal friend of Harold, was briefed by the executor, and for one long hour or more tried hard to find out what exactly was meant by Christian Science. Two things came out with convincing clearness. One was that Mrs. Mills, whose diamond ear-rings, rustling silk dress, and Regent Street boots remind one but indifferently of the early Christians, had received pay for several weeks at the rate of at least one guinea weekly, presumably for applying remedies to a deadly disease she could not define, and of the workings of which she professed herself disdainfully ignorant. Anyhow, she got her guineas and killed the man as surely as if she had held a drowning child's

head under water; for if ever anything was clearly proved by diagnosis and autopsy in this world, it is that Harold Frederic on September 20th was a sick man, but not sick unto death.

With care he had a dozen years before him. Then enter Christian Science, with Altralie Mills, the healer, at a guinea a week. When some thirty days later, thanks to the wife of Stephen Crane, the doctors regained possession, it was but to tend the last hours of a dying man. Next Wednesday this adjourned inquiry will surely end, and till then English mouths are practically shut. But when the Surrey jury have said their say, whatever that may be, you will rightly or wrongly hear a howl of execration from the north to the south of England.

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Obituary.

COLONEL WARING.

The death of George E. Waring from yellow fever, in the sixty-sixth year of his age, at the very height of a long career of unexampled usefulness, comes as a sad announcement to a nation that owed so much to him, and that still had such high hopes for his helpfulness in solving some of the most difficult problems confronting it. But it came as he would have wished it to come, in the sense that it overtook him in the discharge of a perilous, self-imposed duty.

Before the Civil War, he had already distinguished himself as a writer and lecturer on agriculture, to which he did the great service of bettering the conditions of farming and farm life in New England. He also devised and carried out the system of draining Central Park in New York.

He was one of the first to volunteer in the Civil War and, as colonel of the Fourth Missouri Cavalry, had assigned to him the task of fighting guerillas in the southwest — a duty so full of constant watchfulness and danger that could not be anticipated or guarded against, that one of his bravest officers gave out and felt compelled to be assigned to other duty.

For nearly a dozen years after the war he devoted himself mainly to scientific farming and land drainage. Many of us remember, in his charming Ogden Farm papers, his love of animals and his exquisite literary skill in making a subject ordinarily dry so interesting. He also published several essays and books on these subjects and a delightful volume of war stories.

His studies in draining the land for profit in farming and for health turned his attention to the larger questions of sanitary engineering, to which he began to devote his exclusive attention in 1877. In 1879, he was appointed by the President one of a commission of three to co-operate with the National Board of Health in devising a scheme of sanitary improvement in Memphis, which had been rendered imperative by the terrible scourge of yellow fever in that city in the summers of 1878 and 1879. Of the many recommendations to that end, the plan of sewerage adopted was for the most part his, and he was selected by the city to carry it out. It was absolutely without precedent except on a very small scale, but his courage never faltered in attempting it, although it was opposed by practically the whole body of engineers engaged in similar work in this country. Its triumphant success and the enormous saving of money by it, as compared with the old system of sewerage and house-drainage, made his career, and one success followed another so rapidly, that many towns and many hundreds of thousands of people owe to him more than to any other man the great progress of the last two decades in the sanitary condition of their homes.

Colonel Waring's greatest work, however, was that he gave to this country the best lesson in self government of recent times, and therein is his chief claim to the everlasting gratitude of every American. As Commissioner of Street Cleaning in New York under Mayor Strong, when he sacrificed a large professional income to conviction and sense of duty, he overthrew a deep-rooted system of corruption and abuse and established an effective system of street cleaning which actually gave to that city clean streets, and he thoroughly routed one of the most daring hordes of political leaders and heelers that ever disgraced our American cities. This he did in the face of persistent opposition which even his friends believed insuperable by a quiet determination and wonderful administrative ability that was perhaps a surprise even to himself.

He was eminently a public-spirited citizen, and at the time of his death he was the candidate of the citizens' State party for State engineer and surveyor. His party leaves "his honored and respected name" upon the ballot as a lesson to his fellow citizens in the coming election.

Colonel Waring volunteered his services to the War Department and was sent to Havana early in October to investigate the sanitary condition of towns where troops were to be located, and to report what steps were necessary to be taken to make them habitable. He was about two weeks in the city of Havana, naturally often in its filthiest parts, reached New York October 25th, working actively upon his report, and died four days later of the fatal black vomit.

He was so quiet and unobtrusive that it was not always easy to imagine the tremendous power of the genial gentleman, in the best sense of that much-abused word, whom so many of us loved and admired. Those of us who knew him well will never forget his strong sense of justice, his fearlessness, his devotion to duty, his manliness, his well-poised self-confidence.

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THERAPEUTIC NOTES.

Sycosis of the Upper Lip. — The failure to successfully treat this part depends, according to Unna,[1] on the constantly acting reinfection by the nasal discharges, as a consequence of rubbing the part with the handkerchief. Instead of using this last, the patient is advised to employ nasal lavage with a decoction of quinquinia. The dressing of the part consists of a salve or plaster of oxide of zinc and sulphur, with or without ichthyol; this is put on every time after the patient is through with his nasal syringe, which is to replace the handkerchief. Epilation is rarely necessary.

Gonorrheal Epididymitis. — Long[2] recommends the application twice a day, on the inflamed organ, of petrolated guaiacol — 10 to 100. The efficacy of the application is in direct proportion to the intensity of the inflammation. To further the absorption of the exudate, replace the guaiacol with belladonna ointment.

Uterine Hemorrhage.—Professor Dührsen[3] tried the treatment of uterine hemorrhage by the direct application of steam (which was first proposed several years ago by Professor Snegnireff, of Moscow) in a "bleeder," who was exhausted by a profuse and unusually long menstrual flow. Vaporization employed twice, and lasting one-half to two minutes respectively, brought about a complete cessation of the hemorrhage. The author considers this method as most certain and harmless, without the aid of narcosis and without causing the patient any pain, in causing an exfoliation of the mucous membrane of the uterus, and in stopping any hemorrhage therefrom. This last procedure is indicated in exhausting hemorrhages in women past forty, which may be due to chronic metritis, abnormal brittleness of the vessel walls or small interstitial myomata. In young persons, in whom no indication for exfoliating the mucous membrane of the uterus presents itself, the vaporization should not last over one-fourth of a minute, and should not be repeated before the next menstruation. This method of Sneguireff's has also been employed successfully in septic and putrid endometritis and in cervical and corporeal gonorrhea.

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[1] Semaine Médicale, 280, 1898.

[2] Wien. klin. Rundchau; Lyon Medical, 41, 1898.

[3] Berliner klin. Woch., No. 36, 1898; Wiener klin. Woch., No. 40, 1898.

Bronchial Asthma. — Professor v. Noorden[4] advises for the treatment of bronchial asthma the revival of Trousseau's method, which consists in the employment of atropine. Treatment must continue for four to six weeks, beginning with one-sixtieth of a grain and increasing the dose every two or three days till we reach one-tenth of a grain per dose, after which the dosage is gradually diminished. Although no toxic effects have ever been observed while thus employing the drug, still the physician is cautioned to exercise great care while it is being administered. Atropine may not probably influence an individual attack; it is, however, sure to prevent the occurrence of any for some time to come; and if not cured entirely, the patient will still obtain lasting improvement, in cases, of course, in which the disease is not as yet complicated by pulmonary emphysema, nor by a chronic bronchial catarrh.

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Correspondence.

REVENUE STAMPS ON DEATH CERTIFICATES.

Boston, October 25, 1898.

Mr. Editor: — As the matter of the enclosed letter seems to me to be of general interest to the profession, and as it is, I believe, the first official information received as to the requirements as to revenue stamps in cases of death certificates I take the liberty of forwarding it to you for publication if you see fit. Respectfully yours,

F. A. Harris, M.D.,
Act. Asst.-Surgeon, U. S. A.

International Revenue Service, District of Massachusetts, Collector's Office.
Boston, Mass., October 22, 1898.

F. A. Harris, M.D., Act. Asst.-Surgeon, U. S. A.,
Winthrop, Mass.

Dear Sir: — In reply to your letter of August 1st to the Department at Washington, referred to this office, I am requested to reply to your inquiries as follows:

(1) No stamp is required on death certificates required by law to be issued by physicians, which said certificates become part of the vital statistics of the State. If said certificates are issued to private persons for private use, then a stamp tax of ten cents is imposed.

(2) No stamps are required on certificates furnished by an official surgeon of the U. S. A., unless they are for private or personal purposes, when they require a ten-cent stamp.

(3) No stamp is required on certificates issued by the medical examiner or coroner of the State when same are to become part of the record of the State. But if they are issued to private persons for private use, they require a stamp of ten cents each.

(4) All certificates furnished by a physician as a private practitioner when required by law and to be used for private purposes are subject to a stamp tax of ten cents each.

Respectfully yours, James D. Gill,
Collector.

METEOROLOGICAL RECORD

For the week ending October 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S....9	30.15	56	66	47	75	57	66	N.	N.	9	12	C.	C.	
M..10	30.42	46	52	40	63	70	66	W.	S.	7	10	C.	C.	
T...11	30.03	59	70	48	87	85	86	S.	S.	12	16	F.	F.	
W..12	29.77	60	70	50	92	63	78	S.W.	W.	10	10	O.	C.	.65
T...13	30.12	49	54	44	65	75	70	N.W.	S.	12	8	C.	C.	
F...14	30.02	51	54	48	74	84	79	E.	E.	10	18	O.	O.	.66
S...15	29.66	49	52	44	93	73	83	N.W.	W.	12	22	O.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 15, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1140	458	11.04	10.64	5.68	2.00	1.60
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	331	103	16.50	17.40	2.70	3.30	8.10
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	210	80	13.16	10.34	4.23	3.29	2.35
Baltimore . .	506,389	163	56	18.30	10.98	4.88	4.27	2.93
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	70	27	24.31	5.72	11.44	5.52	4.29
Washington .	277,000	100	31	11.00	11.00	8 00	—	1.00
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	50	21	32.00	6.00	20.00	2.00	4.00
Nashville . .	87,754	29	12	27.60	3.45	17.25	—	10.35
Charleston . .	65,165	38	13	15.78	13.15	13.15	2.63	—
Worcester . .	108,240	28	11	25.00	25.00	17.85	—	5.88
Fall River . .	95,919	32	19	34.43	15.65	31.30	3.13	—
Cambridge . .	89,724	24	5	12.51	8 34	12.51	—	—
Lowell . . .	88,641	46	17	17.36	8.68	8.68	4.34	—
Lynn	66,703	16	—	18 75	12.50	6.25	—	—
New Bedford .	66,340	12	8	25.00	16.66	25.00	—	8.33
Somerville . .	61,101	8	2	25.00	—	12 50	—	—
Lawrence . .	57,263	17	10	5.88	5.88	5 88	—	—
Springfield . .	56,501	20	4	20.00	15.00	5.00	10.00	5.00
Holyoke . . .	43,424	15	3	13.33	13.33	6.66	—	—
Brockton . .	37,278	8	1	—	12.50	—	—	—
Salem. . . .	36,883	8	3	50.00	25.00	12.50	25.00	—
Malden . . .	34,613	—	—	—	—	—	—	—
Chelsea . . .	33,468	10	—	—	—	—	—	—
Haverhill . .	32,022	8	2	12.50	—	12.50	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	12	—	—	8.33	—	—	—
Fitchburg . .	29,438	7	2	14.28	—	—	—	—
Taunton . . .	28,167	15	6	13.33	—	13.33	—	—
Everett . . .	25,338	6	3	—	—	—	—	—
Quincy . . .	23,549	5	2	—	20.00	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	6	2	16.66	16.66	16.66	—	—
North Adams .	20,971	5	1	40.00	20.00	—	20.00	20 00
Chicopee . .	17,842	1	0	—	—	—	—	—
Medford . . .	16,511	2	2	—	—	—	—	—
Newburyport .	14,915	7	0	14.28	—	14.28	—	—
Melrose . . .	14,032	5	2	—	40.00	—	—	—

Deaths reported 2,465; under five years of age 905; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 355, consumption 293, acute lung diseases 234, diarrheal diseases 169, diphtheria and croup 77, typhoid fever 57, whooping-cough 27, cerebro-spinal meningitis 15, scarlet fever 9, measles 1.

From whooping-cough New York 8, Philadelphia 7, Providence 3, Boston Pittsburg and Lowell 2 each, Salem and Fitchburg 1 each. From cerebro-spinal meningitis New York 6, Boston,

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[4] Münch. medic. Woch., September 27, 1898.

Worcester and Lynn 2 each, Baltimore, Washington and Somerville 1 each. From scarlet fever New York 4, Boston 2, Philadelphia, Baltimore and Washington 1 each. From measles Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending October 1st, the death-rate was 21.8. Deaths reported 4,695; acute diseases of the respiratory organs (London) 200, diarrhea 884, whooping-cough 66, diphtheria 60, measles 30, scarlet fever 26.

The death-rates ranged from 13.8 in Croydon to 38.5 in Salford; Birmingham 23.9, Bradford 21.6, Cardiff 15.5, Gateshead 33.7, Hull 28.8, Leeds 19.9, Leicester 16.5, Liverpool 28.5, London 19.7, Manchester 28.1, Newcastle-on-Tyne 26.4, Nottingham 20.8, Sheffield 25.5.

RECORD OF MORTALITY

For the Week ending Saturday, October 22, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1140	428	11.88	11.70	4.86	2.12	2.97
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	408	137	13.68	10.08	3.60	3.36	6.24
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	—	—	—	—	—	—	—
Baltimore	506,389	197	77	15.81	14.79	7.14	2.04	6.12
Cincinnati	405,000	89	—	12.32	4.48	2.24	5.60	4.48
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	83	25	21.60	8.40	10.80	2.40	6.00
Washington	277,000	119	43	17.85	5.95	3.40	4.25	5.95
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	49	18	16.32	12.24	8.16	4.08	—
Nashville	87,754	30	10	13.33	13.33	3.33	3.33	6.66
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,250	34	11	5.68	11.76	—	—	5.88
Fall River	95,919	—	—	—	—	—	—	—
Cambridge	89,724	30	10	13.33	13.33	10.00	—	—
Lowell	88,641	21	12	28.56	—	4.76	9.52	14.28
Lynn	66,703	17	2	17.64	5.88	—	—	—
New Bedford	66,340	23	7	17.40	4.35	—	13.05	4.35
Somerville	61,101	21	6	4.76	14.28	—	—	—
Lawrence	57,263	23	9	17.40	4.35	—	—	17.40
Springfield	56,501	33	10	21.21	18.18	9.09	3.03	6.06
Holyoke	43,424	11	4	18.18	—	—	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	12	4	8.33	16.66	—	—	—
Malden	34,613	9	0	—	—	—	—	—
Chelsea	33,468	13	—	—	—	—	—	—
Haverhill	32,022	7	2	14.28	—	—	—	—
Gloucester	30,589	—	—	—	—	—	—	—
Newton	29,716	8	4	12.50	25.00	—	—	—
Fitchburg	29,438	9	4	11.11	—	11.11	—	—
Taunton	28,167	5	2	40.00	—	40.00	—	—
Everett	25,338	9	5	11.11	11.11	11.11	—	—
Quincy	23,549	6	0	16.66	—	—	—	—
Pittsfield	22,643	—	—	—	—	—	—	—
Waltham	21,812	4	0	—	—	—	—	—
North Adams	20,971	8	3	25.00	12.50	12.50	12.50	—
Chicopee	17,842	4	1	—	—	—	—	—
Medford	16,511	4	0	—	—	—	—	—
Newburyport	14,915	2	0	—	—	—	—	—
Melrose	14,032	3	0.	—	—	—	—	—

Deaths reported 2,443: under five years of age 838; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 330, consumption 330, acute lung diseases 258, diarrheal diseases 118, diphtheria and croup 103, typhoid fever 67, whooping-cough 17, cerebro-spinal meningitis 11, scarlet fever 7, measles 4, malarial fever 2.

From whooping-cough New York 11, Philadelphia and Lynn 2 each, Pittsburg 1. From cerebro-spinal meningitis Washington 5, Holyoke 2, Cambridge, Lynn, Somerville and Newton 1 each, From scarlet fever New York 6, Pittsburg 1. From malarial fever Springfield and Clinton 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending October 15th, the death-rate was 19.0. Deaths reported 4,091; acute diseases of the respiratory organs (London) 263, diarrhea 377, diphtheria 74, fever 63, measles 43, whooping-cough 38, scarlet fever 22, small-pox (London) 1.

The death-rates ranged from 10.2 in Brighton to 28.5 in Norwich; Birmingham 20.7, Bradford 17.4, Croydon 11.7, Gateshead 18.1, Hull 24 0, Leeds 19.6, Leicester 14.5, Liverpool 21.9, London 18.5, Manchester 25.1, Newcastle-on-Tyne 23.6, Nottingham 16.3, Salford 25.6, Sheffield 20.5, West Ham 15.3.

METEOROLOGICAL RECORD

For the week ending October 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer: Daily mean	Thermometer: Daily mean.	Thermometer: Maximum.	Thermometer: Minimum.	Relative humidity: 8.00 A. M.	Relative humidity: 8.00 P. M.	Relative humidity: Daily mean.	Direction of wind: 8.00 A. M.	Direction of wind: 8.00 P. M.	Velocity of wind: 8.00 A. M.	Velocity of wind: 8.00 P. M.	We'th'r.*: 8.00 A. M.	We'th'r.*: 8.00 P. M.	Rainfall in inches.
S...16	30.32	42	48	37	72	81	76	N.	N.E.	10	12	C.	C.	
M...17	30.40	40	45	36	84	88	86	N.	E.	9	12	O.	O.	
T. .18	30.19	50	57	44	63	94	78	E.	S.E.	18	14	O.	R.	.78
W..19	30.21	56	65	48	81	55	68	N.W.	N.	16	5	C.	C.	.03
T...20	30.21	51	53	49	97	97	97	N.E.	E.	12	15	R.	R.	.03
F. .21	29.51	61	70	52	93	97	95	S.	S.W.	24	12	H.	O.	1.53
S...22	29.90	54	60	47	69	60	64	W.	W.	18	14	C.	C.	
☞	30.11		57	46			81							2.37

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING OCTOBER 27, 1898.

McIntosh, W. P., passed assistant surgeon. To rejoin station at Louisville, Ky. October 26, 1898.

Stoner, J. B., passed assistant surgeon. To rejoin station at Buffalo, N. Y. October 27, 1898.

Geddings, H. D., passed assistant surgeon. To await orders at Lenoir, N. C. October 27, 1898.

Young, G. B., passed assistant surgeon. To rejoin station at Delaware Breakwater Quarantine, Lewes, Del. October 24, 1898.

Stimpson, W. G., passed assistant surgeon. To assume temporary command of Service at Memphis, Tenn. October 26, 1898.

Eager, J. M., passed assistant surgeon. To inspect ports at Brownsville and Corpus Christi, Tex. October 24, 1898. To proceed to Laredo, Tex., for special temporary duty. October 26, 1898.

Gardner, C. H., passed assistant surgeon. To rejoin station at Baltimore, Md. October 27, 1898.

Oakley, J. H., passed assistant surgeon. To proceed to Chattanooga, Tenn., for special temporary duty. October 22, 1898. Upon completion of duties at Chattanooga, Tenn., to rejoin station at Evansville, Ind. October 27, 1898.

Cofer, L. E., assistant surgeon. To proceed to San Diego Quarantine, Cal., as inspector. October 27, 1898.

Cumming, H. S., assistant surgeon. To rejoin station at New York, N. Y. October 27, 1898.

Lavinder, C. H., assistant surgeon. To proceed to Egmont Key via St. Petersburgh, Fla., for temporary duty. October 27, 1898.

Parker, H. B., assistant surgeon. Assigned to duty as Sanitary Inspector on the U. S. Transport "Minnewaska." October 24, 1898.

Von Ezdorf, R. H., assistant surgeon. Granted leave of absence for fifteen days on account of sickness. October 27, 1898.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, November 7th, at 8 o'clock. The subject of the evening will be "The Treatment of Cleft Palate." The following gentleman will take part in the discussion: Drs. J. C. Warren, C. B. Porter, T. Fillebrown, P. W. Moriarty, H. A. Baker and G. F. Grant.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

RECENT DEATHS.

Arthur Kemble, M.D., M.M.S.S., died in Salem, October 27, 1898, aged fifty-nine years.

Francis L Haynes, M.D., of Los Angeles, Cal., formerly professor of gynecology at the Medical College of the University of Southern California, died recently at Los Angeles. Dr. Haynes was graduated from the Medical Department of the University of Pennsylvania in 1881.

Original Articles.

FATTY DEGENERATION.[1]

BY CHAUNCY REA BURR, M.D. (HARV.), PH.B. (YALE), SAN JOSE, CAL.

It has long been known that fat and urea are formed when albumin disintegrates. Opinions differ and have differed as to whether these are the ultimate or the proximate products of disintegration. Hoppe-Seyler[2] thinks fat is not formed directly from albumin, but that glycogen is formed from albumin and then fat from glycogen. Voit,[3] on the other hand, is quite certain that fat may be formed at once from albumin, and this seemed to be the common opinion.

In order to reconcile the various observations which have been made on the subject, it is necessary to have some sort of a working hypothesis. The writer is inclined to think that a cellular digestive ferment is at the bottom of the change in question; for it occurs normally and in health; it also occurs in disease and even after death. An instance of the normal change is seen in the hepatic cells after a meal, where the fat globules therein are developed *in situ*, and in health from the albuminoid protoplasm of the cell. An instance of the second change is seen in the atheromatous arteries of old age or in fatty degeneration of the heart; while an instance of the third change is seen in the conversion of dead flesh into adipocere.

The liver of the cod if kept for twenty-five days in a damp place becomes fatty according to Davy,[4] while at the same time carbonic acid and ammonia are formed. When urea is heated, ammonia is given off, so that the relation between the two is intimate. Quain has also produced the fatty change in muscle immersed for a sufficient time in acidulated water to delay putrefaction. So that the conversion, after death, of albumin into fat and a nitrogenous substance resembling, if not identical with, urea, seems well established. This cellular digestion after death suggests the corresponding *post-mortem* gastric digestion known as *Gastromalacia.*

The hypothesis admitted of the existence of a cellular digestive ferment which digests albuminoid matter. It is easy to understand why the change into fat occurs in health and disease and even after death.

There must be some special use for fat in the economy to be so constantly formed and under such divers conditions. It is, as is well known, an easily oxidized form of fuel, the products of combustion being, as with all carbonaceous matters, carbonic acid and water. The same is true of glucose. Moreover, glucose and glycogen are muscle foods. Prolonged muscular exercise produces a great increase in the quantity of carbonic acid excreted,[5] but not a corresponding increase in that of urea. As the production of urea and that of fat out of albumin must necessarily bear a certain ratio to each other, the fact that prolonged muscular exercise does not increase the quantity of urea excreted, indicated that the quantity of fat formed from albumin cannot be increased either. The energy manifested must be maintained from some other source. Glycogen is known to be a constant ingredient of muscle; it diminishes during muscular exercise and the supposition is that it is changed into glucose which feeds the cellular protoplasm and is thus the source of energy. A recent experiment by the Prussian war office seems to corroborate this. After prolonged muscular exercise it was found, in the cases examined, that the blood was very poor in sugar and that a sweet draught containing thirty grains of sugar administered at such times had a markedly invigorating effect.[6] Muscular work can also be performed for long periods upon a diet of carbohydrates and fat. So that the conviction has gradually been arrived at that the exhibition of energy within the body is due to the combustion of hydrocarbons, as fats and sugars, and not to that of proteids, as albumin.

It was suggested by Houghton long ago[7] that albumin taken as food splits up into glycogen and urea. The chemical composition of albumin suggests this, and the theory was put forward to explain the formation of glycogen upon a purely albuminoid diet. If this analysis holds good, the synthesis ought to be equally good that glycogen and urea combined make albumin.

It is known that vegetable protoplasm can change starch into sugar and sugar into starch, and it is further known that animal protoplasm can change glycogen into sugar. To complete the simile, it would be necessary to change sugar into glycogen, and there is evidence that this can be done; for a larger quantity of sugar can be injected into the portal vein without reappearing in the urine, than can be injected into the jugular vein; the reason being that the excess of sugar in the portal vein is changed into glycogen and locked up in the liver cells.[8]

The liver, as is well known, is normally full of glycogen, which is formed *in situ* from the sugars brought thither by the portal circulation. It is thus an arrester of sugar, as Pavy has maintained. On the other hand, there is but little doubt that it also has the attribute ascribed to it by Bernard, namely, that of keeping the supply of sugar in the blood constant by transforming glycogen into sugar as required. Furthermore, as glycogen is scarcely present at all in healthy blood, while sugar is, and, on the other hand, glycogen is an almost constant ingredient of cellular protoplasm, while sugar is not, there seems reason to suppose that cellular protoplasm in general as well as hepatic protoplasm in particular has the power to change sugar into glycogen, and glycogen back again into sugar. This process languishes in the absence or insufficient supply of oxygen, for Livierato[9] demonstrated that whereas in infectious fevers without pulmonary complication (for example, typhoid fever), the supply of glycogen in the blood was increased and extracellular, yet in the same class of diseases with pulmonary complication (for example, typhoid pneumonia) the supply of glycogen in the blood was increased and intracellular.

It may not be possible, as yet, to trace the exact connection between glycogen and albumin, but there is every reason to suppose that it is intimate, and of the nature of a chemical compound. Proteid matter is the other form of food required by the living cell.

As peptone, it is taken up by the leucocytes in the blood, and secreted by them in the form of nuclein which specifically nourishes the nuclei and structural elements of the cells throughout the body. It is thus said to repair tissue waste, while the carbohydrates furnish the fuel for combustion.

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[1] Read before the Santa Clara Medical Association.

[2] Physiol. Chemie.

[3] Zeitschr. f. Biol., v, and Neues Rep. f. Pharmacie, xx.

[4] Williams: Pulmonary Consumption, Phila., 1871, p. 44.

[5] Thompson: Practical Diabetes, New York, 1895, p. 25.

[6] New York Medical Record, October 2, 1897.

[7] Dublin Quarterly Journal, November, 1861, p. 269.

[8] Foster: Physiol., Phila., 1885, p. 498.

[9] Deutsche. Archiv. für klinische Medecin, Leipzig, B. 53, p. 303.

Poehl has shown that there is still another factor at work in the maintenance of healthy nutrition. This is a glandular secretion, widely distributed in the body, and found so far in the prostate, thymus and thyroid glands and in the ovaries.[10]

To it he has given the name of *spermin*. Its function, so far as can be determined, is to stimulate intracellular oxidation and consequently cellular respiration. This is shown by an increase in the output of urea and chlorides under its therapeutic use and by the fact that if by any chance the spermin is changed into an insoluble phosphate, the evidences of oxidation cease.[11]

These preliminary remarks may fittingly close by recapitulating the theory upon which the changes, about to be considered, are based.

Fat and urea are the normal products of cellular self-digestion, and are formed directly from the cellular protoplasm. This is nourished by glycogen and nuclein the former of which supplies energy, the latter repairs tissue waste. In addition to these, the secretion of certain glands, to wit, the prostate, thyroid, thymus and ovary, acts as a cellular respiratory food, by stimulating and maintaining intracellular oxidation; such fat as is normally produced from protoplasm is oxidized at the seat of production, while carbonic acid and water as well as urea are excreted by the cell.

This is the normal process, approximately, departures from this process may be as follows:

(1) More glucose, glycogen and nuclein, and less oxygen may be supplied than the cell has need for. More fat is produced than is oxidized and obesity is the result.

(2) Less glucose, glycogen and nuclein are supplied than the cell has need for. There is greater combustion than supply the body wastes and fatty degeneration invades the tissues.

(3) More glucose or glycogen and less nuclein and oxygen than the cell needs is supplied. The cellular protoplasm is not renewed; fat is not produced, the body wastes and a condition of diabetes ensues.

(4) Less glucose or glycogen and more nuclein than the cell needs is supplied. The combustion is greater than the supply; the body wastes and fatty degeneration follows.

(5) Less oxygen is supplied to the cell than it needs. The quantity of glucose or glycogen and nuclein being normal. The production of fat is greater than its consumption, and obesity results.

Under the first heading, namely, supply greater than consumption, come the ordinary cases of obesity. A full diet of mixed foods will ordinarily increase the weight and fat of most individuals, or an increase in any particular article of diet will do it, be it fat, sugar or proteid material.

The fat man, pure and simple, has generally small lungs, kidneys, spleen and lymphatic glands; while the heart, liver, stomach and pancreas are largely developed. This arrangement would naturally suggest that the income of the body would be greater than the outgo, and if the arrangement is congenital an answer is given to the question why obesity runs in families. The small lungs are an index of the deficient oxidation going on within the body. This shows itself in the urine in an excess of uric acid, and hence arises the association so often seen of rheumatism with obesity. The headaches and vertigo of fat people may often be ascribed to the same cause. Glycosuria is also a not infrequent symptom. Seegen reports that out of 140 cases of diabetes, 32 were obese before they were diabetic. Fatty degeneration is often associated with obesity and if the heart is involved symptoms of feeble circulation occur; or if the arteries, atheroma or apoplexies; while if the veins are involved there are hemorrhoids or varicocele. The muscles when invaded by fatty degeneration invite to repose; and the languor so induced operates in a vicious circle to still further lessen intracellular oxidation. Pyrexia in a fat man is rarely high owing to the imperfect oxidation, but it may be none the less serious, owing to the non-radiation of heat through the fatty covering. Finally, the obese are subject periodically to indispositions, induced undoubtedly by disordered digestion. There are catarrhs from the nose and the intestine; and there is often flatulence and constipation.

Under the second heading, namely, greater combustion than supply, must be classed most of the cases of fatty degeneration. Williams[12] remarked years ago that "the excessive excretion of urea is often observed in the same wasting diseases in which fatty degeneration invades the textures." It has been shown that the spermin of Poehl is a constant ingredient of the normal body; that it is derived from the secretions of certain glands; that its function is to increase intracellular oxidation, which is indicated by an increased output of urea. An increase in this secretion should cause an increased combustion of albuminoid tissue, which, if not replaced as fast as consumed, would inevitably be followed by wasting; while a decrease in the secretion would be followed by suboxidation and an increase in weight. It must often have struck the clinical observer as an anomaly, that in cases of pulmonary tuberculosis, where the area of healthy lung as well as the quantity of oxygen inhaled was very limited, the patient lost flesh instead of gaining it. According to current teaching, the crippled lung and anemic blood ought to give rise to a state of suboxidation, with increase of adipose tissue. But does it? On the contrary, there is every sign of superoxidation. The body wastes, and the output of urea is increased. Poehl's discovery partly explains this. Spermin increases intracellular oxidation; intracellular oxidation is increased in phthisis. It would perhaps be premature to say that spermin is the cause of this increase, but not premature to say that some irritant of similar action is at work. Just how it acts is not perfectly clear, whether by increasing cellular respiration, in which case there should be a sufficient supply of oxygen in the blood without the cell, to draw on, or by setting free the oxygen from its union with other elements in the protaplasm itself. In pulmonary cases, the quantity of oxygen available in the blood is very limited. Any increase, therefore, in intracellular oxidation, or even in the maintenance of ordinary oxidation, must be at the expense of the oxygen increment of the cellular protoplasm. This disintegrates, giving rise to urea and fat; which latter may or may not be, thoroughly oxidized, probably not; and fatty degeneration is established. It must also be remembered that the researches of Livierato, already alluded to, seem to indicate that the change of glycogen into albumin does not occur in the absence or deficiency of oxygen. In pulmonary cases there is a deficiency of oxygen, and it would naturally be inferred that the change alluded to does not occur. Be this as it may, in fatty degeneration the cellular albumin is often unreplaced and permanent atrophy remains. Fatty degeneration would thus seem to arise in a state of increased need for oxygen, which in the end is taken from the cellular protoplasm, rather than from the atmospheric air. This is the view of Binz and Schultz [13] who hold that the cells, in their avidity for oxygen, take it from the blood so long as this will part with it. When it ceases to do so the cases attack each other, and act as mutual reducing agents. It could thus only occur in anemic or pulmonary cases, and such seems to be the clinical fact.

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[10] Zeitschrift für klinische Medicin, Berlin, Bd. 26, Ht. 12, 1895.

[11] Wratsch, St. Petersburg, No. 49, 1895.

[12] Pulmonary Consumption, Phila., 1871, p. 44.

Poehl claims to have found his spermin in the thyroid gland. From other sources [14] comes the information that the thyroid gland secretes a substance capable of decomposing or neutralizing toxic substances developed by tissue change within the body. This substance when injected into the body of an animal appears to be first stimulating, then paralyzing. If the dose is not large enough to produce death, emaciation ensues. This is evidence that the thyroid gland has a far-reaching effect on the growth and preservation of the organism. An excess of the thyroid secretion is thought to exist in exophthalmic goitre; it is deficient in myxedema; it is absent in cretinism. In the first there is superoxidation, in the second, suboxidation, in the third, lack of development. There is, therefore, probably more than coincidence in the fact that the thyroid and the body both increase in size at the age of puberty; that the plumpness of the child gives way to the brawn of the man, and that in turn as the climacteric is reached, the voice becomes higher pitched, the thyroid atrophies and the obesity of advanced middle age appears. The same condition is seen in eunuchs and in women after the menopause. While speaking of the thyroid gland, the writer would observe that in two cases of pulmonary tuberculosis, recently under his care, there were many of the signs of exophthalmic goitre, including a slight but distinct enlargement of the thyroid gland. While in a genuine case of exophthalmic goitre, there was a marked tuberculous inheritance. Durdufi has found in the normal thyroid a substance analogous to cocaine. This, as is well known, specifically paralyzes the pneumogastric nerve. The writer has pointed out in a previous article [15] that in most cases of pulmonary tuberculosis the pneumogastric nerve is paretic. It is interesting to note that precisely the same set of symptoms occur in exophthalmic goitre without the presence of tubercle bacilli, so far as known. There is the diminished respiratory expansion, the tachycardia, the tremor, the sweating, the lessened electrical resistance of the body. If Durdufi's discovery is confirmed, it would appear that in exophthalmic goitre, as well as in pulmonary tuberculosis, there is a neuritis of the pneumogastric nerve, caused by a substance analogous to cocaine secreted by an ever-active thyroid gland, and that such cases of exophthalmic goitre offer a peculiarly tempting soil for the growth of the tubercle bacillus.

Under the third heading come cases of glycosuria and diabetes. As previously remarked, obesity often precedes diabetes. There is lack of oxygen within and without the cell. This is the keynote of the condition. Purdy has shown [16] that the disease is least fatal in low altitudes and particularly at sea-level; that is, at the point where the supply of atmospheric oxygen is greatest; that it rages more among those who live much within doors than among those who are much abroad. The fat man is handicapped by his small lungs which, together with his large liver, render it difficult for him to draw a full breath. If to this is added feeble cellular respiration with impairment of intracellular oxidation, glycogen is not transformed into albumin, nor glucose into glycogen,[17] sugar passes unchecked through the paretic liver and appears in the urine. The albumin which changes into fat is not replaced, and emaciation ensues. Of course, there are various grades of the condition, and many cases are not preceded by obesity. These it is not the purpose of the present paper to discuss.

The conditions which obtain under the fourth heading are much the same as those grouped under the second; the only difference being in the quantity of nuclein supplied to the tissues. If nuclein is the secretion of the leucocyte, it is evident that in a condition of leucocytosis, the total quantity of nuclein present in the tissues must be increased. This condition is found in infectious diseases. The pyrexia, which is present, interferes with the proper digestion of food, so that an insufficient supply of glycogen is furnished, while the increased secretion of nuclein stimulates the cells to increased intracellular oxidation. So long as the hemoglobin can furnish oxygen in sufficient quantities to satisfy this demand, all may still be well, but let the supply of oxygen fail and anemia and fatty degeneration result.

The last heading includes cases of obesity associated with anemia or loss of blood, as well as those of alcoholism. Mitchell narrates [18] that it used to be well known that some people grew fat when bled at intervals; also that cattle breeders occasionally bleed their cattle to increase the quantity of fat in the tissues or of cream in the milk. It has also been suggested by another writer that the plumpness of the female sex, as a whole, has much to do with the monthly abstraction of small quantities of blood in the catamenial flow. With what has already been said, it is easy to understand the *rationale* of the condition. The oxygen carriers of the blood being lessened in number by constant withdrawal, less oxygen is absorbed and less oxidation effected in the tissues. Fat is produced, but not consumed. The same effect is produced by the excessive use of alcohol, though the mode is different. Alcohol in some way, not clearly understood, binds the oxygen more firmly to the hemoglobin than is natural. The consequence is that it gives it up with difficulty; the tissues receive less oxygen than they require, fat accumulates, and if the need of oxygen increases fatty degeneration occurs.

The treatment of obesity should be partly dietetic and partly medicinal. Most persons, as well as most fat persons, eat too much. The chylopoetic vessels are in a state of constant engorgement in the effort to handle this excess of food. Physiological engorgement may in time become pathological congestion, whence results an insufficient liver or pancreas, faulty digestion, the production of leucomaines and auto-intoxication. The patient should eat less. His fondness for sweets and starchy foods must be held in check. These articles need not be entirely interdicted, but they must be limited in amount. So, also, must be the amount of fluids ingested. On the contrary, if the heart will stand the strain, Turkish baths, with massage, may be taken *ad libitum*, even as often as once a day. As the patient begins to lose flesh and is able, he should add active exercise to his *régime*, at first horseback riding, later, walking or the bicycle. Some in addition use belts or corsets on the principle that pressure makes atrophy. The modern medicinal treatment of obesity is practically limited to one substance, namely, the extract of the thyroid gland. There is quite a consensus of opinion as to its value, the loss of flesh is marked in nearly all cases. It must be remembered that it contains an alkaloid similar in action to cocaine, and the heart consequently is to be watched.

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[13] Arch. f. exper. Path., vol. xiv.

[14] Notkins: Wiener medizinische Woch., Nos. 19 and 20, 1895.

[15] The Tuberculous Diathesis, Boston Medical and Surgical Journal, November 25, 1897.

[16] Diabetes, Phila., 1890, p. 107.

[17] Spitzer: Archiv. für die Gesammte Physiologie, Bonn, B. 60.

[18] Fat and Blood, Phila., 1877, p. 18.

The treatment of fatty degeneration must be on other lines. Here there is superoxidation. This can be checked to some extent by the use of caffein. In acute cases alcohol, also, is of service, and chalybeates are indicated. The diet should be rich in proteids as well as in carbohydrates, while exercise, massage and electricity are useful adjuncts. The writer has also seen excellent results from the use of cod-liver oil combined with dilute phosphoric acid and a bitter stomachic, such as the tincture of bitter orange or hops.

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THE WILLIAMS MURDER TRIAL.[1]

BY H. K. FOSTER, M.D., PEABODY,
Medical Examiner.

The two principal actors in the tragedy known as the Williams murder were, first, John Gallo, an Italian laborer, twenty-four years of age, who had lived in America only a few years, and who could speak English only to a very limited extent, and Alfred C. Williams, the supposed murderer of Gallo. The latter had been employed for about a year at the farm of W. W. Phillips, at Lynnfield Center, as a farm-hand, assisting at the barn in caring for the stock and doing the work of an ordinary farm-laborer in the fields. Williams was a native of Prince Edward's Island, a young man apparently about twenty-five years of age, of medium height, light complexion, athletic figure, clean shaven and altogether in appearance a neat and inoffensive young man, having a large full eye, and a face free from the ugly, dark, vindictive, quarrelsome look often seen on the faces of criminals. He was a man who would impress one as being vain about his personal appearance and achievements. He had been employed at a variety of places in Lynnfield and Wakefield during the year previous to his arrest, and a portion of the time had been employed at the Phillips Farm, and had worked with John Gallo doing work in the fields, and assisting at the stable in caring for the horses, and during the time that he worked on the farm had occupied a room in the upper part of the stable.

On the morning of July 28, 1897, it was reported to me by telephone from Lynnfield Center, that there had been a fire at the Phillips Farm and that a small house had been burned and a man had been burned in the house. I drove to Lynnfield as soon as I received the message, arriving there about 10.30 A. M. of the 28th, and while the ruins of the house were still smouldering.

The buildings on the Phillips Farm are situated near the road running from Lynnfield Center to Wakefield, and are not remote from other farm buildings scattered along the same frequented street. They are upon a nearly level tract of land, and consist of a large, old-fashioned, but remodelled farm-house occupied by Mr. Gray, the foreman of the farm, and his family, and members of the Phillips family whenever they choose to come there.

Back of the house there are two large barns, one used for the cattle, and the other barn or stable is used for the horses and carriages, and about ten or fifteen rods still farther back from the stable there was a small, two-room cottage, consisting of a one-story pitch-roof building about ten feet square, having a door opening into it on one side, and a window on the opposite side, and on the end of this building toward the stable there was a lean-to about eight feet by ten feet, having a door to enter it from the main room, and one window covered with wire-netting nailed upon the outside of the window-frame. This building was built close to a cart-path which ran back into the cultivated fields. This lane ran from the street at right angles, past the side of the house, straight along by the side of the stable, down past the hut which was burned, and then back into the fields. This lane was fenced upon both sides and the Italian's house formed a portion of the fencing upon one side, and was entered by a door opening directly into it from the lane.

The Italian, Gallo, occupied this hut alone, and did his own cooking, a part of the time upon the cooking-stove in the larger room of the cottage, and a part of the time near the stone wall upon the opposite side of the lane. He slept alone in the lean-to of the cottage and very seldom went away from the farm or had any one come to visit him, worked hard all day, was industrious, quiet and inoffensive in every way, without an enemy in the world, so far as appeared from the trial of the case. He was paid his wages every month at the rate of one dollar and a half per day for every working-day, and always in five-dollar bills as far as possible, Mr. Gray, his employer, drawing the money in five-dollar bills from a bank in Wakefield, upon a check sent him every month by Mr. Phillips. It also appeared during the course of the trial, that he had three twenty-dollar gold pieces in his possession when he came to work at the farm; these had been paid him by a contractor at Swampscott for work done while in his employ. These gold pieces and from seventy-five to one hundred dollars in five-dollar bills, he was supposed to have had in or about his cottage at the time of the fire.

When I arrived at the scene of the fire, there was not a single piece of wood belonging to the hut in sight; all the wooden parts of the building were entirely destroyed. There was no cellar to the building and the stones around the outside of the building, upon which the sills had rested, marked the outside of the ground-floor. The entire surface within these foundation-stones was strewn with hot ashes and about in the centre, from end to end, and on the side farthest away from the lane were the remains of a human being, but so charred, and so nearly consumed, that it required a second examination to satisfy one's self that they were human remains. The head and neck were gone, both arms and both legs were entirely consumed, bones and all. The spinal column and the shrivelled and charred muscles of the back and some of the viscera, charred and contracted beyond recognition, alone were seen.

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[1] Read before the Massachusetts Medico-Legal Society, June 7, 1898.

The remains were given in charge of a Wakefield undertaker and on the following day, Dr. J. W. Heath, of Wakefield, and myself, looked them over thoroughly. The dorsal and lumbar vertebra were intact, the deeper muscles of the back were still to be made out, although thoroughly cooked, and covered with charred flesh, and contracted so as to cause marked arching of the spine. The ribs were all gone, except about three inches on each side of the spinal column. The lungs could not be made out at all. The heart, very much charred, could be seen and the liver and kidneys could be made out; but the other viscera were consumed except the bladder, which contained a small amount of urine; the pelvic bones and sexual organs were entirely gone. All the medical evidence, therefore, that we could furnish in the case was, that it was the body of an adult human being.

To return to the scene of the fire, the foundation-stones indicated that there had been a building there, about eighteen or twenty feet long, by about eight or ten feet wide, extending parallel with the lane. The spiral springs of a bed were to be seen in the corner nearest the stable and nearest the lane, an iron water-pipe and iron sink were found a little farther along on the side next to the lane; and on the farther end, about half-way from side to side, was the small cooking-stove and the fallen bricks of a chimney. Beyond the bed-springs and near the remains of the body, was a tin can such as is generally used for kerosene oil.

At first sight, it would appear as if there was very little evidence in such a case, except of a fire in the night, which destroyed a house and its single occupant, but upon investigation, it appeared:

(1) That the body was consumed to a greater extent than we should expect from the burning of so small a building, the fleshy portions of the thighs, and the large bones, composing the hip-joints, being entirely consumed.

(2) That the occupant of the house was not burned in his bed, as his remains were some feet away from where the bed-springs were to be seen.

(3) That a kerosene oil can was in the middle of the floor of the bedroom and close beside the body.

(4) That the victim of the burning was not clothed at the time of the burning as the buckles and buttons of his clothes and some coins and the clasp of a pocket-book were found by the side of the bed-springs and none were found near where the body lay.

(5) That the body lay in the doorway leading out of the bedroom with the head back in the room toward the bed, and not falling forward as a person would naturally fall if trying to escape from a burning room or building, and it was shown by several witnesses, that the fire was first started in the sleeping-room near the bed.

There was quite a group of men standing near the scene of the fire, none of whom were known to me; but apparently they were known to each other, and as I was about to leave the place, after learning what I could about the fire, a young man, who, as I afterwards learned, was Alfred C. Williams, related to the group of men standing there, that he was "held up" the night before. He said that he was alone in his room where he was boarding at Wakefield and feeling rather uneasy, he lighted a cigar and walked out on the road, near the Wakefield Pond, and while standing there with one foot upon the rail fence, he was suddenly and without the least warning, struck upon the head from behind. He said he thought he had better be doing something to defend himself, so he struck his assailant, the first blow striking him upon the nose, causing it to bleed. The second blow knocked his assailant down, he sprang upon him and was getting the best of him, when he was struck upon the head, by some second person not seen by him before, and was then thrown down a bank several feet near the water's edge. He showed us the bruises upon his head, finger-marks upon the throat, and a great many blood-stains upon his clothing, especially upon the sleeves of his coat. There had evidently been an effort to wash or wipe away most of the blood-stains. One finger had a cut upon it, and he said his assailant chewed that; he had abrasions upon the hands, caused, he said, by striking his assailant. He said that he lay unconscious upon the shore of Wakefield Pond from about midnight until about four o'clock in the morning of July 28th when he found himself lying with one arm in the water. He then made his way alone to his boarding-place in Wakefield. [The fire in the shanty at Lynnfield was discovered about the same time that Williams said that he came to himself upon the shore of Wakefield Pond, about a mile away.] He went with a companion to the Chief-of-Police of Wakefield, getting him out of his bed, and told him the story of his hold-up, and showed him his bruises. He told the same story to several different persons during the morning, and then started for the scene of the fire at Lynnfield — making two or three calls upon the way. One of his acquaintances, after hearing his story of the hold-up, asked him if he had heard of the fire at Lynnfield, and he replied, "No." His acquaintance then told him that the Italian's hut at Phillip's Farm was burned, and that the Italian was burned in it, and he then asked if he was all burned up.

State-Officer Neal and the Chief-of-Police of Wakefield thought best, upon the evidence, to investigate the alleged "hold-up," and detained Williams at the Wakefield Police Station, and by searching his person, they found about seventy-five dollars in five-dollar bills upon his person, and it was shown during the trial, that he had spent several dollars that morning, paying back-pay upon his board bill, and making some purchases. It was also shown that upon the previous day, July 27th, he had not money enough to buy a meal, or pay a five-cent fare upon the cars. And upon searching his room at Wakefield, two twenty-dollar gold pieces were found under the carpet in a corner of the room, and a commode was placed over the spot where they were found. Upon being questioned where he obtained the money, he said at first, that he received it by registered letter, from his brother, but when he was told by the officer that his brother would not send bills in a registered letter, but would send a check, or post-office order, and that they could find out at the post-office if a registered letter was really sent, he then said that he found it wrapped up in a pocket-handkerchief, lying upon the sidewalk, near the place where he was assaulted.

It was shown during the course of the trial, that there were no signs of an encounter, no blood-marks, and no unusual tracks upon the sidewalk where Williams claimed he was assaulted and robbed, and there were no signs upon the shore of the lake, that a person had lain there in an unconscious and bleeding condition.

The attorneys for the prosecution argued, from the evidence presented, that Alfred C. Williams was entirely out of money, had no work and he was very anxious to get money to pay his bills and to go with some friends to the Klondike. And it appeared that he told his friends that he could get the money. The theory of the Commonwealth was that he left his room at Wakefield on the night of July 27th at about midnight, walked to the Italian's cottage to get the money which he believed was there, that he was discovered and perhaps recognized by Gallo, and in the fight in the dark, as he supposed, for his life, he killed Gallo, probably by stabbing. Then to cover the crime, after he had obtained the money, he saturated the body with kerosene oil, left the can beside the body, set fire to the room, and escaped by a back window, as the door was found locked on the inside. He then ran through the fields where the tracks of a man running could be traced and came out at the Wakefield Pond about four o'clock in the morning. Here he tried to remove the blood-stains from his clothing by washing. He then thought out the "hold-up" story, left his cap there, walked to his boarding-house where he appeared shortly after four o'clock, hot, flushed and sweaty, as a man would after such a lively run, and not weak, pale, haggard and sick, as a man would after lying unconscious by the roadside for four hours from a blow upon the head.

The principal arguments for the defence were:

(1) That it could not be proved that John Gallo was really dead or that the charred remains were not, or might not be, the remains of some other person.

(2) That there was no evidence to show that Gallo was killed before the burning occurred, granting that the remains found were actually his.

(3) That Williams was not located near the scene of the fire at any time during the night.

As a closing argument at the end of a trial which lasted four days, the Attorney-General drew a most vivid and convincing picture of the whole transaction and after a short conference, the jury brought in a verdict of murder in the first degree, which was, I believe, in accordance with the evidence, and with the almost unanimous opinion of those who heard the evidence.

The case was tried about the tenth of February and Williams is now in Salem Jail awaiting sentence, which has been deferred pending some decisions of the Supreme Court upon exceptions presented by the defence.

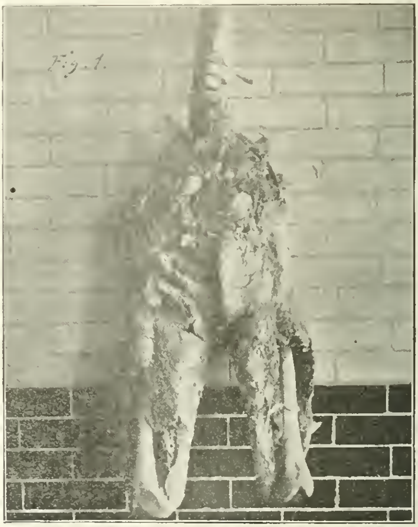
Many lawyers claimed that it would be very difficult to convict on account of the body being so nearly destroyed, that the manner and the cause of death could not be made out.

DR. ROSWELL PARK, of Buffalo, N. Y., has just been elected a member of the Italian Society of Surgery.

TWO CASES OF ADIPOCERE; ONE OCCURRING UNDER REMARKABLE CIRCUMSTANCES.

BY LOUIS J. MITCHELL, M.D.,
Late Coroner's Physician, Chicago, Ill.

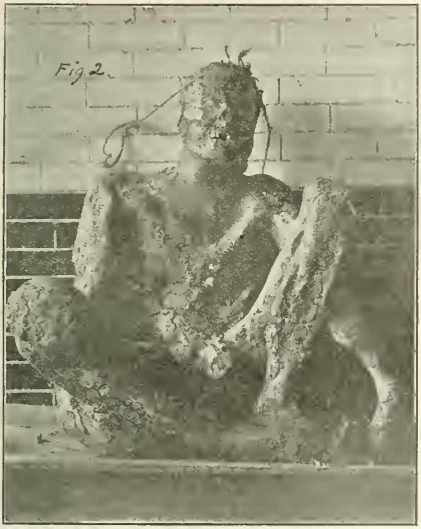
CASE I. In April, 1893, a Chicago policeman caused some excitement by announcing that he had found a petrified woman in the lake. The remains were taken to the morgue, and found to consist of the spinal column from the ninth thoracic vertebra, the pelvis and both femora partly covered with flesh which had been converted into adipocere. The remains were found on the lake shore and the lower end of each femur was very much eroded by the sand, as may be seen from the photograph. The external genitals had disappeared leaving an opening with a rough resemblance to a vulva; however, on opening the body no uterus was found and a prostate gland was present. The bladder contained urine and the bowels semi-solid feces.



The rest of the body was never found, which is not surprising, for the locality was desolate and only sparsely settled. The adipocere was much harder than in the next case, the best comparison which occurs to the writer is the rind of an Edam cheese. Of course, the length of time the body had remained in the water is unknown; Fourcroy's and Devergie's estimates have been shown to be too high, and Mackenzie in his "Medico-Legal Experience in Calcutta," states that he has seen saponification occur in from three to fifteen days.

CASE II. On February 16, 1893, a large box marked "Household Goods" arrived in Chicago from Salt Lake City. The address was 166 Jefferson St., but nobody there knew anything of the consignee. The box was kept in the company's freighthouse until June 25th, and then removed to a storage warehouse. Here it remained until March 25, 1896, when it was sold at auction with other unclaimed freight. Two men who made a business of buying unclaimed freight, secured the box for $14.50, thinking it held a stove on account of the weight. On taking their purchase home they were disconcerted to find the contents to be a dead body. The box and contents were removed to the morgue and examined.

The outer case was a pine packing box 30 by 30 by 44 inches, bound with strap iron. Inside this was a common zinc-covered trunk, with the trays and partitions removed. The space between the trunk and the packing box was filled with sawdust, and the box itself was lined with oil-cloth such as is used for covering tables. Inside the trunk, fitting snugly, was a zinc case 32 by 22 by 18 inches, and in this was the body. The edges of the zinc case had been soldered down, but in a bungling manner; instead of a continuous joint solder had been dropped on every inch or so, making a very poor job.



The body had the legs flexed strongly on the thighs and these on the trunk, and they had been kept thus so long that it was impossible to straighten them out. For the same reason the soft parts of the nose had been pushed into the nares as may be seen from the photograph. A one-half inch rope was fastened about the knees and neck, keeping them together; the head bent on the chest. The ammoniacal odor was simply intolerable, and the persons who first saw the body, believed it to be chloride of lime. Nothing else was found in the zinc box save a Turkish towel and a hard object, which, on being washed, proved to be part of a truss.

For the reason just mentioned the body could not be measured accurately, the approximate height was five feet and six inches, the weight 146 pounds. From the condition of the teeth and sutures the age was estimated at from thirty to thirty-five years. Two fractures of the skull were found, one in the left occipital region was round, one inch in diameter with the bone partly depressed; the other in left parietal region was one and one-quarter by one inch, the bone here was depressed one-half inch. The brain was semi-solid, the viscera were in a fair state of preservation though brittle, an epiplocele was found on the right side with the omentum still in place. The skin and subcutaneous tissue for nearly one-half inch were soft and slimy, the rest of the flesh was solid, cutting like firm cheese. The teeth were all sound and in good condition, no fillings (while moving the body the two upper incisors fell out and are not shown in the picture). The hair was dark brown, straight, and of medium length.

The humorous aspect of the case is furnished by the verdict of the coroner's jury. The remains were thought to be those of several persons, some of whom were found living, the choice finally narrowed to two — Prosper Chazal and Oliver Pike. The former was a saloon-keeper in Salt Lake City (whence the body came), was last seen alive February 1, 1893, he was nearly thirty-five years old, had a hernia on the right, his teeth were perfect and his hair corresponded with that found on the body. Oliver Pike disappeared from Seattle, Wash., he was twenty-nine years old, also had a hernia on the right, and his hair and teeth corresponded with those of the corpse.

At the inquest it was proven that Pike was seen alive after the trunk was shipped, yet the body was declared to be that of Oliver Pike, handed over to his relatives and is now buried at Fayette, O. Chazal's friends were of course unable to positively identify the remains, while Pike's relatives did so — a rather difficult thing to do as evinced by the photograph. It is scarcely necessary to add that Pike was discovered during the summer of 1897, living in Redlands, Cal.

Clinical Department.

A CASE OF PUERPERAL FEVER TREATED WITH ANTISTREPTOCOCCIC SERUM. RECOVERY.[1]

BY C. EARLE WILLIAMS, M.D., BOSTON.

Mrs. F. B. was a primipara twenty years of age. Was delivered March 8th of a large male child with instruments. Right occipito-posterior position. There was a laceration of the perineum reaching to the sphincter ani which was repaired at the time, also considerable post-partum hemorrhage. The strictest antiseptic precautions were used.

March 9th. Temperature and pulse normal.

March 10th. Temperature 100°, pulse 100.

March 11th. Had a rigor followed by a rise in temperature to 102.6°, with pulse 120. Mammæ soft and full of milk. Lochia slight but odorless. Gave an intrauterine douche of corrosive 1 to 4,000, followed by a weak creolin solution.

March 12th. Passed a sleepless night. Temperature 102.5°, pulse 130. Vagina hot and dry. Lochia very slight, although no odor, face looking pinched and anxious, sordid tongue and teeth. Was given corrosive douche followed by weak creolin twice in the day with acetanilide as an antipyretic. Temperature in evening 102.6°, pulse 130, very restless. Removed stitches from perineum. No pus or membrane.

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[1] Read before the Obstetrical Society of Boston, April 19, 1898.

March 13th. Passed bad night; symptoms exaggerated with hurried respiration. Temperature 104.6°, pulse 140. Corrosive douche in morning. Called Dr. C. W. Townsend in consultation the same evening, who very thoroughly curetted her without finding any placental tissue or *débris*. He then gave a very grave prognosis. Temperature four hours later 104.6°, pulse 140.

March 14th. Was called at 7 A. M., found patient very much worse. Temperature 105°, pulse 150. Respiration 48; vomiting, diarrhea; hectic and sweats; intense thirst. Was delirious with intervals of complete consciousness. Tympanites and jaundice present; decided to try the antistreptococcic serum. Obtained twenty cubic centimetres of John T. Milliken & Co., St. Louis make, Formula Fisch., which we injected into the buttocks at 11 P. M., the symptoms being slightly worse than the morning.

March 15th. Symptoms greatly ameliorated. Temperature 102°, pulse 130, respiration much easier, patient looking better; no delirium; vomiting, diarrhea and sweats diminished. Intrauterine douche. Evening, improvement still continued.

March 16th. Not so well as previous evening. Temperature 103.2°, pulse 130. Tympanites and jaundice increased, although diarrhea and vomiting were no worse. Respiration again hurried. Decided to use serum again. Found it impossible to obtain the same make of serum at this time, so injected twenty-five cubic centimetres of Gibier's at 9 P. M., with uterine douche.

March 17th, 11 A. M. Patient worse. Temperature 104°, pulse 140, respiration more rapid, sweats and hectic reappearing; diarrhea and vomiting worse; no delirium.

March 18th. Patient practically same as previous day, with symptoms slightly exaggerated. Injected twenty cubic centimetres of Milliken's serum at 9 P. M.

March 19th, 9 A. M. Patient greatly improved. Temperature 102°, pulse 132, respiration 26, vomiting has completely ceased; diarrhea diminished; no sweats; face not looking so pinched and anxious; tympanites and jaundice better.

March 20th. Temperature 102.5°, pulse 130. General condition same as on 19th. At 9 P. M., injected twenty cubic centimetres more of Milliken's serum.

March 21st. Temperature 100°, pulse 116. Symptoms much better. From this out the patient made an uninterrupted recovery.

In conclusion, I will state that there was no local trouble, the manifestation of the disease being entirely systemic. Following three of the injections, there was a remarkable improvement in the symptoms which was not noticeable after the second injection, which may possibly be due to its being of a different make. Different nourishment, together with stimulants, champagne and brandy, were pushed to the utmost from the first. Strychnine, strophanthus and quinine were also pushed to tolerance and she had excellent nursing throughout.

Death at the Age of 125 Years. — Pardo Lucero, whose age, as shown by the records of the missions of Los Angeles and Soleda, was 125 years, died at the county hospital, San Francisco, October 25th.

A CASE OF PUERPERAL SEPSIS SUCCESSFULLY TREATED BY ANTISTREPTOCOCCIC SERUM.[1]

BY T. H. O'CONNOR, M.D., BOSTON.

Mrs. H., age twenty-two years, previous history good, slight in stature, occupation housewife, primipara.

December 30th. After a tedious labor of thirty hours was delivered under anesthesia, by internal version, of a male child which occupied R. O. P. position. All secundines were removed and a two-per-cent. lysol intrauterine douche given. Perineum was ruptured to sphincter, immediately repaired. On the evening of December 31st (2d day) found patient restless, having severe headache, temperature 100° F. and pulse 120. Gave vaginal douche, bichloride 1–2,000.

January 1st (3d day). In morning temperature had reached 102° F., pulse remaining at 120. The night had been sleepless and disturbed by severe headache and pain below umbilicus. Milk flow beginning, but very slight. Urine shows albumin. Vaginal douche given as before, which afforded temporary relief. Condition continued thus, temperature and pulse remaining same, until morning of January 3d (5th day), when severe rigor occurred. A few hours later temperature had reached 102.5° F., there was anxious expression about face, profuse sweating, rapid respiration (38) and abdominal pain had ceased. The sutures in perineum were removed and small pocket of pus found in tracks of the tear. Vaginal douche given. In evening temperature had dropped to 101° F., pulse and other symptoms continued same as in the morning. In addition the lochia which remained free was offensive in odor and milk flow was retarded. Intrauterine douche, bichloride 1–4,000 given.

January 4th (6th day). Had violent vomiting during the night, milk flow stopped, temperature had risen to 103.5° F. Pulse remained at 120; there is a grayish deposit on surfaces of tear. General condition very bad. Improvement in temperature followed the use of intrauterine douche, it falling to 101° F., in evening.

January 5th (7th day). Lochia arrested, vomited incessantly during night and slight diarrhea set in during early morning. At 10 A. M., temperature at 102.5° and pulse 120, injected 20 c. c. Mamorek's Pasteur Institute serum in right side of abdomen. At 9 P. M. temperature had risen to 103° F. and pulse to 132; patient complaining of faintness for the first time during her illness.

January 6th (8th day). Ten A. M., temperature has dropped to 100.6° F., pulse to 96, no vomiting during the night and retained beef-juice and claret and slept from 5 to 8 A. M. the first time for a week. Temperature returned to 102° F. and pulse to 120 in evening.

January 7th (9th day). The diarrhea became very severe as day progressed, being almost continuous. At evening the temperature had increased to 104° F. and pulse to 132. All through the day she had been able to take claret and milk.

January 8th (10th day). Ten A. M., temperature 103° F., pulse 120, again injected 20 c. c. of the serum as before. This was followed again by rise in temperature to 104° F. and pulse to 132 in the evening, faintness associated as before; diarrhea continued, but less frequent.

January 9th (11th day). Ten A. M., temperature 100° F., pulse 90; grayish deposit upon torn surface of perineum has disappeared, headache and vomiting have ceased, respiration has decreased to 24, diarrhea slight, anxious expression has disappeared from face. In evening temperature and pulse were same as in the morning. She has been able to take milk, egg and claret during the day.

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[1] Read before the Obstetrical Society of Boston, April 19, 1898.

January 10th (12th day). Temperature normal, pulse 80, for the first time since the second day and one hundred and twenty hours since the first injection of serum, during which time 40 c.c. had been given. The temperature continued to fluctuate between normal and 100.5° F. until January 15th, after which date it remained at normal and the patient made a rapid convalescence. In addition to the serum injections, the treatment consisted of intrauterine douches of bichloride 1–4,000 twice daily, quinia sulph. two grains every two hours, and peptomangan one-half ounce in milk every four hours. The claret was given because of patient's objection to stronger stimulants. No local effect followed the injections of serum, but a depressed feeling and a marked rise in temperature occurred twelve hours after, followed by buoyancy of spirits and a decided drop in temperature in twenty-four hours. While regretting that a microscopic examination had not been made, yet I think the course and symptoms warrant the diagnosis of streptococcus infection.

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Medical Progress.

REPORT ON MENTAL DISEASES.

BY HENRY R. STEDMAN, M.D., BOSTON.

(Concluded from No. 18, p. 446.)

Muratow[12] has studied the pathogenesis of the focal symptoms of general paralysis in 123 cases, with autopsies. In all his cases he found a diffuse periencephalitis, with atrophy of the cortex and changes in the archnoid and ependyma. In addition, he found other changes, which may be classed as follows:

(1) Focal lesions due to atheroma (hemorrhage, softening, etc.)

(2) Inflammation of the dura with hemorrhage (pachymeningitis, interna hemorrhagica.)

(3) Chance complications, such as atrophy of the cerebellum.

Under the first group he found four cases where the focal lesion had preceded the general paralysis, and the apoplectic seizures noted in the whole series of cases had no relation to the changes found in these four cases. Eight cases showed inflammation of the dura, but in these the epileptiform attacks were no commoner than in the other cases. He concludes that every diseased region of the cortex acts as a circumscribed focus, causing symptoms of deficit and exerting distant action through secondary degenerations. The focal symptoms and general symptoms, weakness of association, delusions and dementia may be thus explained. He agrees with Nissl and Weigert that the primary process is a parenchymatous change in the nerve cells, but disease of the connective tissue, the membranes, or the ependyma and disturbances of the circulation may favor the progress of degenerative processes. Neuritis and tabes may also complicate the conditions.

KATATONIA.

The question whether katatonia is to be regarded as a group of symptoms or an independent disease has recently been the subject of much discussion. Schüle[13] recognizes six forms:

(1) Status attonitus — a state of generalized muscular rigidity with a fixed aspect of the face and sialorrhea.

(2) Slight degrees of the same state with stereotyped attitudes which may be influenced by suggestion. These spasms may be general or localized.

(3) Gesticulations of insistent form.

(4) Combined tonic and clonic spasms.

(5) Alternating forms where the stereotyped expressions of anxiety, pleasure, etc., succeed each other.

(6) Apparently voluntary irresponsible movements and paradoxical movements.

He notes the frequency of verbigeration and mutism. These various motor symptoms may be the consequence of hallucinations and troubles of sensibility. The motor neurosis may be absolutely spontaneous, especially in certain states of stupor. Status attonitus belongs to a third type, where the nature of the disturbance of innervation is still obscure, for we cannot discover whether there is a simple neurotic trouble, an organic muscular contracture or an attitude having a psychical motive. The various motor symptoms are very often combined. The troubles of consciousness are also variable, multiform and changing and may exist in all degrees. The physical symptoms consist of elevation of temperature in the periods of excitement, sub-paresis, vasomotor troubles, ocular troubles, ptyalism, sweating, hyperesthesia, lack of nutrition and sitophobia. He thinks that these states may be met with in the course of acute or sub-acute paranoia, especially in the hysterical and at the menstrual period, in chronic paranoia, in cases accompanied by sexual disturbances, in the states of stupor and in certain forms of mania with profound physical disturbance, in circular stupor and in true melancholia. He cannot admit that there is a true katatonia as an independent disease. The grave form, ending in dementia, is closely akin to primary dementia, the milder form to hysterical insanity.

Aschaffenberg[14] has also studied the question and thinks that katatonia and hebephrenia should be classed together under the term of "dementia precox," an affection developing most frequently in youth and which immediately, or after more or less complete remissions, terminates fatally by a characteristic intellectual enfeeblement. He dwells especially upon the diagnosis of dementia precox. We note at the beginning of the disease the remains of a previous intelligence which distinguishes it from imbecility. The katatonic symptoms may eliminate imbecility and idiocy. The diagnosis from general paralysis may be difficult. The ocular symptoms are characteristic of general paralysis. The disturbances of memory begin earlier in paralysis than in dementia precox. The diagnosis from periodical insanity is important. The two affections may begin at the same age. In dementia the handwriting is irregular, differing from the slow and ill-traced handwriting of melancholia. The immobility of melancholia is due to inhibition, in dementia to negativism. The flow of ideas and special language of mania differ in variety, rapidity and tendency to rhyme and pun from the stereotyped verbigeration of dementia.

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[12] Monatschrift für Psych. und Neurol., January, 1898.

[13] Allgem. Zeitschrift für Psych., liv, 516.

[14] Loc. cit., liv, 1004.

Peterson and Langdon[15] have, in this country, discussed these conditions and have concluded that katatonia is not a distinct form of insanity, a clinical entity; that there is no true cyclical character in its manifestations, hence it cannot properly be classed as a form of circular insanity, but that it is simply a type of melancholia. It is not desirable, therefore, to retain the name, but we may use the term katatonic melancholia or the katatonic syndrome, as descriptive of melancholy, with cataleptic symptoms, verbigeration and rhythmical movements. The prognosis of such forms of melancholia is graver than the other forms. The treatment is the same. Their classification with melancholia, however, seems open to criticism since dementia is the more common mental state.

CONFUSION IN PARANOIA.

Krause,[16] studying the conditions of confusion and excitement or stupor in the beginning and course of paranoia, thinks that paranoia may, in all its stages, show conditions of confusion with excitement or stupor which may often appear and disappear without materially influencing the whole state or the course of the main disease. Exhaustion seems to contribute to produce these conditions. Confusion may come on so early in paranoia as to form almost the beginning of the disease in cases of acute development and in some cases it may actually introduce the disease. Confusional conditions, coming on as exacerbations of paranoia, sometimes cannot be distinguished from acute confusional insanity. Such conditions are not rare, and they are of practical significance in arriving at a correct diagnosis and prognosis.

SENILE DEMENTIA.

Alzheimer[17] has made an exhaustive review of the recent works upon senile dementia and diseases of the brain, based upon the atheromatous disease of the vessels. Kraepelin[18] regards melancholia as a disease standing in casual relation to beginning senile decline; and, apart from this, he recognizes in melancholic conditions only the depressive states of periodical insanity and a constitutional disposition. Although some cases occurring in about the fourth decade of life may be possibly melancholic, Alzheimer has seen cases, perhaps following exhaustion, coming on in the period of full development. Such patients were perhaps more subject to a second attack at the climacteric period. Ziehen[19] also thinks that periodical melancholia develops in the period of decline, but some cases, after a long interval of sanity, have a second attack with marked mental failure and rapidly progressing dementia. There is no sharp distinction between these and the curable cases of melancholia in the period of decline. Melancholia develops when the brain has become weak and has lost its working capacity, senile dementia develops after the brain has lost distinctly in weight and signs of senility have appeared. Weigert has shown that there is an increase of glia in the cortex of the cerebrum and cerebellum. There is also an increase of pigment and degeneration of the ganglion cells and atheroma of the vessels. Where these changes are marked we may get the quiet forms of dementia which are very common, although not often seen in asylums; in other cases we may note excitement with depression, mania, delusions of persecution or delirious excitement. Noetzli[20] thinks that the quiet type may attack any one, but that the excited type requires a neurotic predisposition. Alzheimer questions this. The statistics of heredity are all defective and are especially hard to obtain in old persons. The statistics vary as to heredity and there is no proof either way. Febrile diseases often act as an exciting cause of senile dementia. The symptoms vary. Noetzli distinguishes dementia, mania, melancholia, hypochondria, persecutory delusions and alcoholic dementia. Mental weakness is common to all, but it would be better to speak of agitated, depressed, hypochondriacal and paranoical forms of senile dementia. The delirious forms in senility are marked by an acute onset, complete confusion, great excitement and terrifying hallucinations. Remissions are common, but there is often complete loss of strength and a fatal termination. Some cases go on to lachrymose anxious states. They are indicative of senile degeneration of the brain similar to collapse, delirium and paralytic delirium. Binswanger[21] distinguishes a presenile dementia of persons in the forties, whose judgment and memory fail, who become weak, dull, excitable, tremulous in speech and movement and who may do improper things requiring them to be sent to an asylum. The pupils may be sluggish, the speech nasal without stumbling or hesitancy. In these cases there may be a marked atrophy of the ganglion cells due, perhaps, to an acquired weakness of the central nervous system, with very slight atheroma. Most writers think atheroma of essential significance in senile dementia, but Alzheimer thinks that the changes are not due solely to the disturbance of the vessels but that the disturbance in the vessels may give rise to disturbance in other organs, causing changes in the blood, the nutrition, etc., and thus affect the nutrition of the brain cells.

THE PUPILS IN INSANITY.

Stefani and Morpurgo[22] have studied the pupils in forty insane patients compared with thirteen normal persons. They find that the pupils in the insane are never larger than in the normal but the variations are greater and the general average is lower. In the forms of insanity of brief duration there is a tendency to dilatation as the remission begins until the pupils reach the normal. In stuporous forms the pupils do not dilate until they reach the normal. In most chronic cases the pupils are smaller than the normal, contracting more during exacerbations. The degree of pupillary contraction is essentially in accord with the intensity and the more or less recent development of the mental disturbance.

SITOPHOBIA.

Cristiani[23] has studied seven cases of sitophobia, all ending fatally. In all cases changes were found in the brain. The mucous membrane of the stomach was swollen, the epithelium was destroyed, the vessels dilated, the glands atrophied, the connective tissue increased and, in the worst cases, the parenchyma was almost gone and the submucosa had begun to be involved. The changes varied with the duration of the sitophobia. That such changes were not due to simple fasting he proved by starving rabbits. Then by starving rabbits and cauterizing the brain cortex he found that changes occurred in the stomach similar to those found in his patients. He therefore concludes that the gastric changes are dependent upon the changes in the brain and that, in these cases, both the brain and the stomach should be treated.

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[15] Medical Record, October 2, 1897.
[16] Monatsch. für Psych. und Neurol., May, 1897.
[17] Loc. cit., January, 1898.
[18] Psychiatrie, 5te Aufe.
[19] Neurol. Centralbl., No. 19, 1898.
[20] Mittheil. aus klin. u. med. Instituten der Schweig., iii, 46.
[21] Berlin klin. Wochenschr., December, 1894.
[22] Rivista Sperimentale di Frenatria, xxiii, 350, 1897.
[23] Annali di Neurologia, xv, 433, 1897.

OPIUM TREATMENT OF MELANCHOLIA.

Ziehen[24] emphasizes the value of the opium treatment in severe melancholia. After dwelling upon the importance of rest in bed, he states that *the opium treatment is demanded in every case.* It directly counteracts the suicidal tendency by lessening the anxiety; but, above all, by its early employment and methodical administration it assures an essentially shorter and milder course of the disease. He gives a grain of powdered opium in powder or pill four times a day, or ten drops of the tincture. For patients who are very weak, very old, or very young, and for those with heart trouble, the dose must be smaller. The best hours for giving opium are 7 A. M., 3, 8 and 10 P. M. The dose is to be increased one grain daily. It is better to give the larger dose in the evening, so as to procure more rest during the night, but when the morning anxiety is intense, the larger dose may be given in the morning. If toxic symptoms, myosis or marked somnolency appear, the dose should not be increased; if the patient be quieter, however, the dose should be increased as anxiety may recur. The subcutaneous use of opium is less suitable and should be limited to cases in which there are severe gastric and intestinal disorders, cases in which there are very severe attacks of anxiety, when it is essential to quiet the patient very quickly, and cases in which the patient refuses to take medicine. Morphine does not seem to him nearly so suitable as the aqueous extract of opium. The highest dose to be given outside of a hospital is three to four grains; the highest daily dose twelve to fifteen grains. By admission to the hospital, the physician is usually spared such high doses. Hydropathic treatment materially supports the rest in bed and the opium; wet packs are most advisable at a temperature of eighty-eight, continued for one hour, best given in the evening. Prolonged baths, at a slightly higher temperature, for one hour, often have a favorable effect, but they must be used with caution. Constipation is due to the melancholia, not to the opium. Under opium treatment the constipation may often yield as the anxiety becomes less.

FAMILY CARE OF THE INSANE.

At a Conference held at Larbert in the Stirling Lunacy District, in England, the question of boarding out of harmless lunatics was urged by Dr. Macpherson,[25] who presented a *résumé* of the practice of boarding out in Scotland and urged its introduction in the Stirling District. This, we believe, is the beginning of the attempt to board out the chronic insane in England.

Alt, at Uchtspringe,[26] in his efforts to improve the service of the attendants in his hospital, has introduced a modification of family care which seems to be of considerable value; in his efforts to obtain efficient service from male attendants he recognizes the necessity of giving them an opportunity for marriage and independent family life. He therefore established near his asylum small settlements in which attendants might live and in which a small number of patients could be boarded out in these attendants' families. The houses in these settlements were provided with a moderate sized garden, and in this way, by the money received from the patients' board and by the work done by the patients, the attendants receive a considerable increase in their income. The close proximity to the asylum renders it easy for the patients to return to the asylum at stated intervals for inspection, to attend religious service at the asylum and to take part in the social features of asylum life.

AFTER-CARE OF THE INSANE.

The discussion of after-care of the insane at the National Conference of Charities in New York was of much interest.[27] Mr. Wines presented the idea that insane patients, leaving the hospital, should be cared for by ex-hospital attendants of good record. Mr. Sanborn advocated boarding out as a solution of after-care. Both these gentlemen and others, advocated the taking up of after-care by the State. Dr. Cutter wished to combine prevention of insanity by the care of incipient cases with after-care. These gentlemen lost sight in a greater or less degree of the strict subject of after-care as understood and practised by the various Continental societies and as advocated by the men who have labored to popularize it. After-care is provided for cured or convalescent patients, without resources or friends, who cannot or should not remain longer in institutions and who are not yet in condition to take up any work which will give them support. After-care effort is made to restore the cured insane, who are needy, to the world and thus to promote independence and prevent relapses. This is the work of which there is a crying need. Those who have studied the problem think it is useless for the State to assume it since the State has more than it can do in providing for those who are actually insane in institutions, and it is believed that the problem will work itself out by the formation of societies through private benevolence, which eventually may be supplemented by the State. If interest be enlisted and information disseminated the subject will be better understood and practical benefit will result.

Falret,[28] president of the Administrative Committee in the work of aiding the indigent insane discharged from the public asylums, reports that sixty-nine patients have been helped to positions in Paris, which represents a considerable number who had returned to ordinary life and shows the utility of the work, but the pecuniary resources and the increasing number of the convalescent and recovered insane unfortunately limit the work.

RECEPTION HOUSES.

The retirement of Dr. Norton Manning from the inspector-generalship of the insane in New South Wales recalls his efforts in the establishment of reception houses, which have met with great success.[29] The advantages of well-organized institutions to receive, treat and distribute mental cases from the existing system is so obvious and has been so often insisted upon that little new need be said in regard to it. The unfitness of the police cell as a place for the treatment of an early phase of insanity is clear even to the most legal-minded, but many of the workhouse "lunatic wards" have also been, to say the least, most unsatisfactory. Reception houses properly equipped and with a competent medical and nursing staff are assuredly of the greatest advantage in caring for the early stages of mental disease and many cases could thus be arrested in their development and escape the need of asylum treatment. Early treatment would probably be facilitated since there would be less reluctance on the part of patients and their friends to go to such an institution. This reluctance at present leads to delay, so that illnesses which might have been abbreviated become protracted and incurable or the sufferer is permitted to commit some overt act of insanity. Economy, in the long run, should result from the diminution of the number of cases going to asylums, and indirectly by a more systematic distribution of the cases most appropriate to their mental state.

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[24] American Journal of Insanity, April, 1898.
[25] Journal of Mental Science, July, 1898.
[26] Monatschrlt. für Psych. und Neurol., June, 1897.
[27] American Journal of Insanity, July, 1898.
[28] Annales Medio-psychologique, July, 1898.
[29] Journal of Mental Sciences, July, 1898.

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

(Concluded from No. 18, p. 450.)

Twelfth Annual Meeting, held at Cranston's Hotel, West Point, N. Y., June 7 and 8, 1898.

SECOND DAY. — WEDNESDAY.

Dr. Samuel Alexander, of New York, read a paper entitled

A STUDY INTO THE NATURE OF ENLARGEMENT OF THE PROSTATE.

He gave a lantern-slide exhibition demonstrating a method of studying the anatomy of the normal prostate and of obstructive enlargement of the prostate. The study was based upon observations made on 106 cases of enlargement of the prostate and over 100 cases of normal prostate.

Dr. Alexander said that one could form no idea of the form of prostatic obstruction by rectal examination, and the usual methods of studying the prostate gave very imperfect results. It was due to the defects in these methods of study that such great differences of opinion existed in regard to important points in the pathological anatomy of enlargement of the prostate. In order to get an adequate idea, it was necessary not only to study the gross specimens of enlargement of the prostate, but also to study them microscopically by means of large sections made through the entire gland and the adjoining portion of the bladder. In this way alone the true relations of the obstructing portions to the vesical muscle can be ascertained.

Dr. Arthur T. Cabot, of Boston, read a paper on

PERSONAL EXPERIENCE IN THE OPERATIVE TREATMENT OF PROSTATIC OBSTRUCTION,

in which he reported in detail the results of five cases of orchidectomy, four cases of orchidectomy followed later by prostatectomy, and six cases of prostatectomy — all for the relief of obstruction due to hypertrophy of the prostate. The speaker said that when he came to consider the question of permanence of results, which next to that of immediate mortality was the most important, the data were not sufficient for definite conclusions. In order to hasten the final correct solution of this question he thought it very desirable that surgeons dealing with this class of cases should put on record all observations coming within their opportunity both of patients operated upon by them and of those seen by them after operation by others. In this way only can we speedily accumulate the facts necessary for a correct judgment.

Dr. Cabot said it was not his intention to attempt to draw any conclusions from cases so few in number as he had thus far accumulated. He wished, however, to point out the fact that in five cases orchidectomy failed to relieve the obstruction and the mechanical reason for this was afterwards investigated either by operation or autopsy. In every one of these cases the obstruction was found to be due to the outgrowth into the bladder of prostatic tissue which was not removed by the shrinkage that followed orchidectomy.

The speaker said that in those cases where there was very much enlargement of the prostate, with symptoms of obstruction which gradually grew more pronounced, he had rather favored orchidectomy, while in another class of cases where early and marked obstruction was associated with only slight or moderate enlargement of the gland, leading him to believe that the condition was a valvular one due to a prostatic outgrowth into the bladder, he preferred prostatectomy. In one case where he had resorted to orchidectomy he had been at first much encouraged by the marked improvement shown by the patient, but recently the patient had again appeared with seventeen ounces of residual urine.

In conclusion, Dr. Cabot said that the present success attending the use of our modern soft catheters in cases of prostatic obstruction has reduced the number of cases in which he had found it necessary to resort to operation.

Dr. J. William White said that a comparison of the results of the two operations (orchidectomy and prostatectomy) in the series of cases quoted by Dr. Cabot would not redound so very strongly against castration. The speaker said he did not wish to convey the idea that castration should be resorted to in all cases of prostatic hypertrophy. He frequently declined to resort to the operation himself in cases which he regarded as unsuitable for it. At the same time in every case he thought it worthy of receiving fair consideration.

SOME OBSERVATIONS CONCERNING THE PROSTATE.

Dr. R. H. Greene, of New York, read a paper on this subject, which consisted of a preliminary report of his observations in a series of 214 cases of urethritis. The observations were undertaken in order to determine (1) the relative frequency of involvement of the posterior urethra in acute urethritis; (2) the condition of the prostate, and (3) the nature of the prostatic secretions. The series was made up of cases which represented the ordinary run of dispensary patients, no attempt being made to select those who complained of subjective symptoms pointing to the prostate.

The posterior urethra was found to be involved in 142 cases, or 66 per cent. The anterior urethra alone was involved in 72 cases, or 34 per cent. The prostate was found to be swollen in 102 cases, or 47 per cent. of the total number of cases examined. In 73 of these cases the enlargement was most marked in the left lobe 71 per cent.; it was most marked in the right lobe in 19 cases, 19 per cent., and in 10 cases, about 10 per cent., the enlargement seemed to be general.

Secretions from the prostate were obtained as follows: After thoroughly washing the bladder and urethra the prostate was massaged through the rectum. The patient was then instructed to pass his water as soon as he was able to do so; this urine contained the secretion massaged from the prostate, which was put in bottles and examined microscopically. The complete results of these pathological examinations, Dr. Greene said, would be withheld for a later paper; briefly, the reports were interesting from a negative rather than from a positive standpoint. In the last series of 20 cases, pus was found in 14; diplococci were found in three specimens of 29 examined.

Dr. Greene said that one of the most interesting facts disclosed by these investigations was the frequency with which congestive inflammations, causing swelling of the prostate, accompanied urethritis. It would be interesting to learn whether these swellings eventually disappeared entirely or not. The writer believed that in some cases at least they did not, and suggested that his statistics might afford a little comfort to those who believed that an earlier urethritis was sometimes a predisposing cause to the prostatic hypertrophy of later life.

CHRONIC CATARRHAL PROSTATITIS.

Dr. H. M. Christian, of Philadelphia, read a paper on this subject. He stated that in the vast majority of cases, catarrhal prostatitis occurs as a result of chronic posterior urethritis, the acini or follicles of the prostate becoming involved in a chronic catarrhal inflammation from extension of the same process from the mucous membrane of the deep urethra.

Among the more prominent clinical features of this affection the speaker mentioned, (1) Prostatic discharge at the meatus upon waking in the morning. (2) Prostatorrhea: this condition is brought about by the over-distention of the glandular tubules with prostatic secretion. (3) Constant urethral pain, located either at the glans penis or in the perineum, relieved temporarily by urination.

Another group of symptoms, causing much mental pertubation to these patients, is increased frequency of urination, associated with a forked or sprinkling stream, with perhaps some little dribbling. A rectal examination is essential in all cases where we are led to suspect the presence of catarrhal prostatitis. If the prostate be the seat of a chronic catarrhal inflammation, it will be found to be somewhat larger than normal, and soft to the touch; stripping the gland causes much pain, and is invariably followed by the appearance at the meatus of an abundant prostatic discharge, which upon microscopic examination is found to be made up of granular phosphates containing pus.

Our main reliance in the management of this affection must be in some of the various forms of local treatment. Of these, regular and thorough massage of the prostate, at least once a week, is of the first importance. Irrigations of the deep urethra with silver-nitrate solution are very important. The regular passage of full-sized cold sounds is also of considerable value in the majority of cases, but great care should be taken to see that the sound does not give rise to urethral irritation. Ichthyol suppositories, introduced into the rectum at bedtime and followed in the morning by a hot rectal douche give very beneficial results.

Dr. Christian said he had frequently been asked what effect bicycle riding had upon patients with chronic prostatitis. He expressed the opinion that this form of exercise, so far as his experience went, exerted no injurious effects either upon cases of chronic prostatitis or upon the normal prostate.

Dr. Glenn said he indorsed the remarks made by Dr. Christian regarding the treatment of this affection. Cold applications he considered beneficial, especially when applied through the rectum. Thorough and regular massage of the prostate with the finger should also be carried out.

Dr. Keyes said he was very chary of passing a sound in cases of prostatitis, as he thought it frequently did harm rather than good. Massaging the prostate with the finger he disliked from an esthetic standpoint. The speaker said the jolting incident to bicycle riding was no doubt injurious to patients with prostatitis; the same was true of horseback riding.

Dr. G. K. Swinburne, of New York, referred to the value of hot rectal douches through some form of recurrent tube, like the Kemp tube. The speaker said he was opposed to passing sounds in these cases.

Dr. J. William White, in reply to a question, said that he had yet to see a single case where bicycle riding had exerted an injurious effect on the normal prostate, the perineum, or any portion of the male genito-urinary tract.

REPORT OF A CASE OF SCLEROTIC NARROWING OF MEATUS,

by **Dr. G. K. Swinburne**, of New York.

ARE COMPLETE CASTRATES CAPABLE OF PROCREATION?

Dr. Frederick R. Sturgis, of New York, read a paper with this title. His conclusions were as follows:

(1) In animals, for a varying period after complete castration, normal spermatozoa are found in the contents of the seminal vesicles.

(2) This period varies in different animals, being six days for the dog, seven days for the cat and fourteen for the guinea-pig.

(3) In man, clinical cases are recorded where fecundation of the female has occurred after coitus with a male who has been completely castrated, but in accepting the correctness of such statements we must remember the adage that "accidents may happen in the best regulated families." Still, Princeteau's case (if correct), proves that spermatozoa do exist for a certain time in the seminal vesicles of a eunuch, and arguing from analogy of what occurs in animals, this is quite probable.

(4) Still pursuing the analogy, in man, as in the dog and cat, a complete castrate may be capable of procreation providing the coitus occurs within the first seven days after the castration.

Dr. Glenn said he saw no reason why impregnation was not possible after castration if healthy spermatozoa in their normal pabulum remained.

Dr. F. Tilden Brown said he had found live spermatozoa in a man's seminal vesicles fourteen hours after death.

A GENERAL CONSIDERATION OF THE CONTRIBUTING FACTORS IN HEMATURIA.

DR. WILLIAM K. OTIS, of New York, read a paper with this title. He stated that every hemorrhage of the urinary apparatus results from the extravasation of blood, either as a whole, or of blood corpuscles, or of the blood pigment alone. The cause of the blood extravasation lies in increased blood pressure, or in changes in the vessels, or in a combination of both. Hemorrhages of the urinary apparatus result, therefore, in inflammatory processes, in traumatic injuries, in diseases of the vessels, in the exanthemata, in scurvy and thorough erosion of the vessels in ulcerative processes and neoplasms. Among the rarer forms of hematuria or hemoglobinuria might be mentioned those caused by general diseases or by parasites, as filaria, or those due to traumata.

The causes of hematuria which we most frequently encounter and which possess the greatest importance have their origin in either the bladder or the kidney, and are due directly to (1) stone (including gravel and acid crystals); (2) tumors; (3) tuberculosis; (4) inflammatory conditions, cystitis and nephritis.

Stone in the bladder causes hemorrhage either by directly injuring the mucous membrane by its movements, or, as Guyon has shown, by the presence of the stone alone, which induces a chronic congestion of the mucous membrane, frequently causing profuse and intractable bleeding which is neither increased nor abated by either movement or repose on the part of the patient and which usually persists until the foreign body is removed. Stone in the kidney causes hematuria either by its passage through the ureter or by its retention in the pelvis of the kidney.

Tumors of the bladder may cause hemorrhage even though they are benign, and in these cases the hemorrhage is due to the presence of the foreign body in the bladder. When the tumor is malignant, the hemorrhage is caused by the ulceration of the vessels; for the most part, however, such hemorrhages are not severe. As a rule, renal hemorrhage from a neoplasm begins spontaneously, is unaccompanied by pain and is uninfluenced by either movement or rest, ceasing suddenly without apparent cause, just as it began. It is apt to be more abundant than when caused by stone, and clots frequently form in the bladder. Its duration and the intervals between the hemorrhages are irregular. In some cases the bleeding may be occasioned by exercise and cease when the patient remains quiet.

When the hemorrhage is due to tubercular ulceration it can only be differentiated from that caused by neoplasms, by bacteriological examination of the urine for bacilli, by the discovery of tubercular foci in other parts of the body, or by the tuberculin test.

Hemorrhages may occur in either acute or chronic cystitis or nephritis, but these are rarely of much severity. The clinical features of these cases will readily determine the cause of the bleeding.

A certain number of cases of renal hematuria have been reported in which no lesion was found, but as most of these have lacked the corroboration of a microscopical examination or from some other reason have been imperfect, Dr. Otis said he was inclined to believe there could be no hemorrhage from any portion of the genito-urinary tract without some lesion being present, though undoubtedly this may be so small as to entirely escape notice but at the same time be capable of giving rise to profuse hemorrhage.

SOME OBSERVATIONS ON THE USE OF UROTROPIN IN PYURIA.

DR. GEORGE E. BREWER, of New York, read a paper on this subject. He stated that in the *Deutsche Medicinische Wochenschrift* of November, 1897, Dr. Leopold Casper calls attention to the antiseptic value of urotropin in diseases of the urinary passages; in the article referred to, the author claimed that clinical observation had convinced him that in this agent we possessed a remedy of great value in the various suppurative inflammations of the pelvis of the kidney and the bladder, as well as in the septic intoxications which so frequently follow the absorption of the toxins generated by these conditions. Attention was also called by Dr. Casper to the value of this agent in phosphaturia, and by other writers in conditions associated with the formation of uric-acid concretions.

Citron, in speaking of the chemistry of urotropin, states that its antiseptic action in the urinary passages is due to its decomposition in the economy, giving rise to formaldehyde, which is excreted in the urine.

Dr. Brewer then reported three cases of pyuria which were apparently benefited by the use of urotropin. Two of these were cases of acute prostatitis, and the third was a case of pyelitis following gonorrhea.

Dr. Brewer said that while he was aware that the three cases he had reported proved absolutely nothing regarding the value of urotropin in pyelitic pyuria, he was of the opinion that the favorable result in these cases was probably directly due to the influence of the drug.

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THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

REGULAR Meeting, April 19, 1898, the President, DR. F. H. DAVENPORT, in the chair.

DR. C. E. WILLIAMS, by invitation, reported

A CASE OF PUERPERAL SEPSIS SUCCESSFULLY TREATED BY ANTISTREPTOCOCCIC SERUM.[1]

DR. T. H. O'CONNOR, by invitation, reported

A CASE OF PUERPERAL SEPSIS SUCCESSFULLY TREATED BY ANTISTREPTOCOCCIC SERUM.[2]

DR. A. WORCESTER: I am struck with the excellence of the general treatment of these cases as reported. While in Dr. Williams's case, at least, the most alarming prognosis was justified, those of us who have been brought up on sepsis, so to speak, know what striking remissions in the disease sometimes occur and what seem apparently hopeless cases recover. As I remember the cases I used to see fourteen years ago in the Boston Lying-in Hospital it seems to me that they were not much more prolonged than those reported to-night. If the antistreptococcic serum is to accomplish all that is claimed for it, it seems to me that it should produce an effect even more marked than in these two cases.

DR. A. D. SINCLAIR: In the epidemic of 1879–80, to which Dr. Worcester has referred, in which at one time the conditions were so bad that 45 per cent. of all patients were affected, we were very much in the dark as to the proper treatment to be pursued, but the course of the disease under our then treatment went on much as in the two cases reported to-night. I introduced the use of carbolic intrauterine douches with some success.

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[1] See page 467 of the Journal.
[2] See page 468 of the Journal.

Dr. F. B. Harrington: I see quite a number of cases of septicemia following septic peritonitis and, of course, with every other surgeon hope that a serum will be found that will prove ot real value. The more of these cases I see the more I feel that it is the sepsis that kills and not the peritonitis and the paralysis of the intestine and distention as is often taught. Such cases often die with the bowels moving freely. While the reports on serum at the Moscow Congress were not especially favorable, cases like the two reported to-night warrant further experiments.

Dr. G. J. Engelmann: I have followed the use of the serum with care and much interest. It is to be noted that in these cases there were no untoward symptoms from its use; sometimes very unfavorable results are seen, depending apparently upon the make. I have been anxious to try the serum in the less serious class of cases — phlegmon, for instance. These cases certainly point to further trial.

Dr. J. G. Blake: My experience corresponds with that of Dr. Sinclair. Twenty years ago, before the days of antisepsis, treatment was most unsatisfactory. The antiseptic treatment is, however, most satisfactory in the early cases, while at the hospitals at present we seldom see cases until the disease is well advanced. To me this serum treatment seems most rational. The question of the make is an important one. In the first case, at any rate, the cure seems directly due to the serum. I feel encouraged to try it further.

Dr. C. W. Townsend: Dr. Williams's case was certainly a very striking one. When I saw the woman I gave a most grave prognosis — in fact, a quite hopeless one. Of course, we are often mistaken and apparently hopeless cases recover under the stimulant treatment, but I do not think I ever saw recovery before in quite so desperate a case. When the serum was suggested in this case I confess I was very sceptical as to its value. While this case is a striking example of its value under certain conditions we must not rely entirely upon it and neglect local treatment, for the vast majority of cases can be handled by local treatment if seen in the early stages.

Dr. W. L. Burrage: I have tried the serum in two cases. The first, in 1896, was a case of late sepsis under my care at the Carney Hospital. The uterus was empty and contracted, with no focus of infection. The patient entered with a high temperature and diarrhea. The Marmorek serum was used for several days with little effect, and the patient died ultimately. The second case was one of septicemia following post-opertive fecal fistula. The patient was in bad condition when she came into my hands. Here, also, Marmorek's serum was used in large doses, but after a time was abandoned. Here, also, the patient ultimately died.

A Memorial to Dr. John Blair Gibbs. — By direction of the President, the general field hospital at Camp Hamilton, Lexington, Ky., has been designated as John Blair Gibbs General Hospital, in honor of Assistant Surgeon John Blair Gibbs, of New York, who died on June 12, 1898, from wounds received in an engagement with Spanish infantry at Guantanamo.

Recent Literature.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students Based on the Most Recent Methods of Examination. By Oswald Vierordt, M.D., Professor of Medicine at the University of Heidelberg. Authorized Translation with Additions. By Francis H. Stuart, A.M., M.D. Fourth American Edition, from the Fifth German. Revised and Enlarged, with 194 Illustrations. Philadelphia: W. B. Saunders. 1898.

In notices of previous editions of this book we have expressed our appreciation of its inherent excellence and practical value. It is hardly necessary to say more in regard to this new edition, than that it brings the work in the same satisfactory way up to a more recent date.

A Manual of Venereal Diseases. By James R. Hayden, M.D. New York and Philadelphia: Lea Brothers & Co. 1898.

In this work we find a compendium in which are briefly summarized the more essential points of symptomatology and treatment of the three venereal diseases — gonorrhea, chancroid and syphilis.

It may be questionable whether this species of work does not tempt students from making the thorough study of the subjects which they should undertake, and which, it goes without saying, it does not give the opportunity of doing. Apart from this the work serves very well the purpose for which it is intended and may be recommended to the general practitioner and the student as a safe guide in the treatment of venereal diseases, and as giving in a readily accessible form a good deal of practical information.

Notes on Disinfectants and Disinfections. By A. G. Young, M.D., Secretary of the State Board of Health of Maine. Pp. 218. Augusta, 1898.

The able Secretary of the State Board of Health of Maine has performed an excellent and useful service in compiling this *résumé* of the subject of disinfectants, in which he has quoted the most recent authorities which treat of the subject experimentally.

Carbolic acid with its derivatives, the more recent experiments with formaldehyde, the effect of heat, light, freezing and electricity, the disinfection of rooms, clothing, bedding, books, instruments, hands, etc., are all considered.

The book should be in the hands of every health officer and general practitioner.

Introduction to Chemical Methods of Clinical Diagnosis. By H. Tappeiner, M.D., Professor of Pharmacology, University of Munich. Translated from the German Edition with an Appendix on Micro-Biological Methods of Diagnosis. By Edmond I. McWeeney, M.A., M.D., Professor of Pathology and Bacteriology, C. U. Medical School. London, New York and Bombay: Longmans, Green & Co. 1898.

In this book the author and translator have attempted to crowd into one hundred and fifty pages a description of the methods of chemical, bacteriological and micro-biological examination which are applicable to clinical work in medicine. In spite of the fact that the work is well done we cannot but question whether the authors have worked to any great purpose. It is certain that if a student would learn these processes in the manner least suited to benefit him in his work, he would learn them from just such a book as this. Methods and reactions should be studied in connection with the theory of the subjects to which they are applied. Much that is essential to the proper understanding of the results is left out in a review so restricted as this, however correct the restrictions. While these compends may serve for reference, we think that medical literature is upon the whole better without them. They are apt to prove a cross-cut, which takes men off the proper road to knowledge.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics and Toxicology in the Medical Department, Cornell University. Fourth Edition. New York: William Wood & Co. 1898.

This book is, as its name implies, simply a manual for reference in the pursuit of laboratory work. The section on qualitative analysis includes simply a list of the test reactions of the acids and bases, with an outline of the method of separation and determination to be used in the work in Inorganic Chemistry.

The section upon the analysis of urine is a very concise statement of the methods employed in the analyses for clinical work. It seems to us that the author has not always chosen the methods most applicable to clinical work in his choice of methods of quantitative determination.

The introduction of the process of fusion into the test for chlorine makes this test difficult for the ordinary clinician. The method of simple titration without previous fusion is sufficiently accurate for practical purposes.

The quantitative test for urea used by the author is much more laborious than the simple Squibbs method with sodium hypobromate and no more satisfactory.

The book will serve as an admirable reference book for those who work in Professor Witthaus's laboratory; we doubt if its sale in other quarters will be very great.

The Office Treatment of Hemorrhoids, Fistulæ, etc., Without Operation. By CHAS. B. KELSEY, A. M., M.D., Late Professor of Surgery at the New York Post-Graduate School, Medical School and Hospital, etc. New York: E. K. Pelton. 1898.

This little book of sixty-eight pages is a reprint of three lectures of the writer. The *First* is an argument that hemorrhoids, fistulæ and fissures do not always require radical routine operative treatment. The *Second* treats of the causative relation of the pelvic diseases in women to affections of the rectum. The *Third* advocates extirpation of the rectum as the preferable treatment of chronic inflammation with obstruction in place of inguinal colotomy. The lectures are printed as delivered. The style is colloquial. The subjects are treated in a rather general way, the reader being referred to the author's more extensive work on rectal diseases for details. The lectures *may* have been interesting to Dr. Kelsey's class of students, when delivered as part of a course devoted to the clinical study and operative treatment of rectal diseases, but, as printed, they contain so frequent allusions to clinical demonstrations as to furnish little information not general in character to the reader.

Spalteholz's Atlas of Anatomy. [Handatlas der Anatomie des Menschen in 750 Theils; farbigen Abbildungen mit Text. Mit Unterstützung von WILHELM HIS, bearbeitet von WERNER SPALTEHOLZ. Zweiter Band, 2 Abtheilung. Leipzig: S. Hirzel. 1898.]

The part before us completes the second volume of this very attractive work. It deals with the heart and the blood-vessels. The views of the heart are numerous and very good. Some of the dissections of this organ please us particularly. It is impossible to show much originality in the presentation of the blood-vessels, especially of the arteries. We will only say that the work is well done. The arteries are in red and the veins in blue. In some few cases both colors are used in the same plate; a method that might have been used with advantage in a few others. The description of the arteries of the small intestine is inadequate, but no more so than that of far more pretentious works. Indeed one would think that the real plan is not generally known.

One volume is still to come, which will treat of the brain, nerves, organs of sense, and the viscera. We hope to welcome it before long.

Twentieth Century Practice, an International Encyclopædia of Modern Medical Science. By leading authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume XV. Infectious Diseases. New York: William Wood & Co. 1898.

This is an interesting and important volume of this series. It treats of influenza, typhus fever, plague, glanders, anthrax, foot-and-mouth disease, actinomycosis, rabies, pyemia and septicemia — diseases upon which the modern study and development of parasitism have thrown much light. Prof. Ditmar Finkler, of Bonn, devotes 250 pages to influenza and furnishes a very thorough treatment of this important disorder. Prof. Edward Licéaga, of Mexico, who is well and most favorably known in this country in connection with problems of sanitation, was judiciously selected for the article on typhus fever, to which seventy pages are given.

Professor Kitasato, now director of the Institute for Infectious Diseases at Tokio, and Dr. Nakagama, his assistant, provide the article on plague, a short but admirable paper of less than thirty pages. Professor Kitasato's fitness for this authorship will be generally recognized. Glanders and anthrax are dealt with by Dr. Frank S. Billings, formerly of Nebraska and Chicago. Dr. Boas, of Berlin, and Professor Ponfick, of Breslau, furnish short papers on foot-and-mouth disease and actinomycosis respectively. Dr. Keirle, of Baltimore, writes on rabies, and Drs. McFadden Gaston, Senior and Junior, of Georgia, on pyemia and septicemia.

Taken as a whole, the volume is a distinct addition to the series.

THE BEAUTIES OF THE GERMAN LANGUAGE. — The *New York Times* publishes in a letter apropos of the German language, the following sentence taken from a German book on rhetoric: "Beides enhält den Begriff der Einhert, der doch mit dem der Zweiheit combinirt ist"; and of the American student's translation of it: "Both contains the idea of singularity combined with that of duplicity or deucedness."

THE BOSTON

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ABDOMINAL INCISIONS.

THE multiplication of the indications for incision of the abdominal wall, and the frequency of its performance, together with the great tendency to hernia in wrongly placed or carelessly sutured incisions, have led surgeons to pay great attention of late years not only to the careful closure, but the proper location and direction of abdominal incisions, and it has been found that the prevention of hernia is as much aided by the latter precautions as by the former.

The technique of the suture of the layers of the abdominal wall as perfected in the many ingenious operations for the radical cure of hernia has been applied to the immediate suture of the abdominal wound, so that the conscientious surgeon nowadays, when he has made an aseptic incision in the abdominal wall, on closing it performs, so to speak, "radical prevention," or radical cure of the hernia which, with improper or careless suturing, might be expected to follow as a result of an otherwise successful operation. Many ingenious methods of suture which have been devised for the radical cure of hernia may be employed to great advantage in the primary closure of an abdominal incision. But it is not so much to the methods of suturing incisions, as to their skilful placing, and adaptation to the region and to the muscular walls of the abdomen that we wish to allude in these brief remarks.

In the earlier laparotomies, which were all made in the linea alba, and which were almost all done for the removal of ovarian tumors, the incision was a long one, five or six inches, and the operators not infrequently found that their patients sooner or later came to consult them for ventral hernias through the laparotomy wounds. The first modification of the incision which suggested itself as likely to prevent hernia was to make it as short as possible, for it was obvious that the shorter the incision the less the weakening of the abdominal wall. A great improvement followed efforts on the part of operators to work through incisions as short as possible, and remarkable skill in carrying on extensive intra-abdominal manipulations through a very short incision has been developed by many abdominal surgeons, and is an important requisite to success in this department of surgery.

Another point which soon became obvious was that efficient suture could best be performed not on incisions made through thin portions of the abdominal wall, such as the linea alba, but through several layers which could be accurately apposed in suturing. Incisions for aseptic pelvic surgery, for instance, are with advantage made to one side of the linea alba, so that the sheath of the rectus is divided both in front of and behind that muscle, and may be accurately sutured afterwards. At first it was thought best to go through the muscle, but now many surgeons apply with success to the median abdominal incision a method first devised for an incision along the outer border of the rectus for appendicitis, namely, incision of the anterior sheath, displacement of the belly of the muscle, followed by incision of the posterior sheath and peritoneum. This method, when the separate layers of sheath are sutured after operation, allows the interposition of the intact muscular belly, which is allowed to fall back directly across the line of incision, and cannot help strengthening it greatly.

The appendicitis incision also, which in the old days so frequently resulted in hernia, has been recently so modified as to result in the frequent avoidance of this untoward result. The short oblique incision was the first refinement on the old long cut and many surgeons perfected themselves so that they frequently were able to perform interval appendectomy through an incision an inch long.

There remained, however, a certain number of cases in which a long incision was necessary for safety in searching for a hidden or deeply placed adherent appendix, and for this class of cases the method devised by McBurney, the criss-cross incision, which separates without dividing transversely the fibres of the external oblique aponeurosis, and again separates the fibres of the internal oblique and transversalis, has made possible an accurate layer suture of a wound which is brought together instead of stretched apart by muscular contractions, thus almost certainly preventing post-operative hernia.

A similar method has been applied with success in the lumbar region for operations on the kidney. Another important point in regard to lumbar incisions is the now recognized advisability of placing them obliquely and parallel to the lower intercostal nerves which supply the rectus muscles.

Extensive ventral herniæ from paralyses of the rectus muscles, due to division of their nerves in vertical incisions in the lumbar region of the abdomen, have come under the observation of many surgeons, and led to the adoption of the oblique incision.

In the upper part of the abdomen, which is concerned in operations upon the gall-bladder, stomach and spleen, although there is less danger of hernia from faulty incisions, it has in certain cases resulted, and ingenious incisions have been planned for its avoidance.

This brief and very incomplete outline of some of the refinements which have been brought about in the recent development of abdominal surgery, refinements which are of great importance to the subsequent comfort of patients who are subjected to such operations, is only intended to give an elementary idea of the progress which is being made in this important branch of surgery.

It will be seen that the fundamental principles on which the most important advances have been made are the following:

(1) The employment of the shortest possible incision.

(2) The division of muscle and aponeurosis in a direction parallel with and not transverse to the course of their fibres.

(3) The division of structures, when possible, in such a manner that undivided muscle or fascial planes may come between the lines of division above and below them. (Displacement of the rectus.)

(4) The placing of incisions so as to avoid division of the nerves which supply the abdominal muscles.

(5) The application to the immediate section of abdominal wounds of the methods which have been found to give the best results in the radical cure of hernia.

Although a great deal has already been accomplished in the technique of abdominal incisions, there is still room for the exercise of ingenuity in further perfecting our present methods and in the devising of other and better ways of avoiding the unpleasant results which may follow abdominal incisions.

GENUINE AND SENTIMENTAL GRIEVANCES.

We all know how numerous and varied the complaints have been against the administration of the War Department, the management of the camps and the inefficiency of the medical service during the recent war with Spain. Time and more careful investigation is showing that some of these animadversions were well founded and were not exaggerated. On the other hand, there was another class of fault-finding which was so fantastical that it tends to throw discredit upon the really just and proper criticisms made upon the Department. As typical of this sort of grievance, we were struck during the occupancy of Camp Wikoff by a statement from an undoubtedly sincere and well-meaning missionary detailed by his church to minister to the sick and dying at that camp. In his statement this clergyman complains that the treatment of the dead soldiers at that camp was "simply outrageous." They were not "embalmed," not buried in uniforms, the coffins were of pine wood, there were no pillows in the coffins, the coffins were not lined, the American flag was not wrapped round each coffin; each dead body did not have the burial service read over it separately; there were no taps for each individual dead soldier.

This want of "decent respect" was compared with the arrangements which await the deceased paupers at Hempstead, L. I., of which this complainant had personal knowledge and experience. It appears the dead paupers at Hempstead are provided with handsome, well-lined "caskets," have pillows under their heads, and a separate burial service; whether they are "embalmed" or not we are not told!

Having been somewhat impressed by the extravagances of this statement we took occasion lately, as it presented itself, to ask a surgeon, who saw much service at Camp Wikoff in connection with a Volunteer Aid Association, not with the Army Medical Service, what his observations had been in regard to the burial of the dead at that camp. He acknowledged that conditions fell short of the ideal or the esthetic, but many of these conditions in justice to the living were unavoidable. He pointed out that the distance from the graveyard to the hospital was not very great, and taps at the cemetery could be distinctly heard through the hospital. On one day he recalled the fact that there were seventeen interments. Taps consume about fifteen minutes; separate military honors for each of these dead soldiers would have occupied about four hours, and the burial services much more in addition. At that time there were among the sick soldiers in the hospital forty or fifty still alive but hovering between life and death. In the opinion of this experienced observer, taps over the dead at that time would have turned the scale against many of these grieviously sick and depressed but still living men!

As to embalming, and as to handsome, well-lined caskets with pillows, etc., it is perhaps needless to say that our colleague shared our sentiment that these things need not even be characterized as non-essentials!

War is a grevious thing. We were warned of that fact before we went into this one. It was unavoidable, and is perhaps not altogether to be regretted, that we should have practically realized that abstract statement. If we push ourselves or allow others to push us into more wars, the rank and file of the voters and of the intending volunteers will not be tempted thereto by visions of the picnics to be provided by the commissariat during life and by rosewood caskets, embalming, and ornate services after death.

MEDICAL NOTES.

Around the World in One Hundred and Twenty-eight Days. — We note, in the *Philadelphia Medical Journal* for October 29th, the publication of some verses, entitled the "Foramen's Lament," together with our introductory remarks, which appeared in our issue of June 23, 1898. The *Philadelphia Journal* credits it to the *Indian Medical Gazette*, which is interesting as showing that a good thing finally penetrates as far as Philadelphia. Even if it has to go around the world to get there, this is pleasing. The only damage sustained in the long journey has been the shaking up of a Greek word in a rather unsuccessful attempt to put it into English type. This has so changed our gentle facetiousness, that no one would recognize the name of the distinguished discoverer of the foramen of Winslow.

Yellow Fever in Mexico. — The officials of the State of Nuevo Leon, Mex., report the occurrence of several cases of yellow fever at Monterey.

Disastrous Floods in China. — Reports from Shan-Tung Province, China, state that the Hoang-Ho has left its bed near the city of Tsi-Nan-Fu, capital of Shan-Tung Province, and flooded two thousand square miles of territory. Hundreds of villages have been destroyed, a million people are suffering and famine is imminent.

A Miscarriage of Justice. — A physician in Peoria recently brought suit, to recover fees, before the magistrate's court. A jury was summoned, and, after hearing the testimony, not only disallowed the account, but, upon the mother's plea that her daughter was not benefited, actually assessed against the attending physician the sum of some $30, to reimburse the mother for services as nurse in the case. — *Peoria Medical Journal.*

Yellow Fever in the South. — Although yellow fever in the South has almost ceased, on account of frosts in the Mississippi Valley, the Marine-Hospital Service has decided, for the sake of safety, to continue all quarantine stations till November 15th, on account of the possibility of the fever being brought to our ports by troops returning from Cuba on the transports. By November 15th, the disease should be practically over in Cuba. The following are the latest reports received by the Service:

		Cases.	Deaths.
Mississippi: Harriston,	Oct. 28–Nov. 5,	2	1
Jackson,	“ “	17	2
Madison,	“ “	12	0
Natchez,	“ “	7	2
Orwood,	“ “	1	0

The Mississippi Valley Medical Association. — At the Nashville Meeting of the Mississippi Valley Medical Association, the following officers were elected: President, Dr. Duncan Eve, Nashville, Tenn.; First Vice-President, Dr. A. J. Ochsner, Chicago, Ill.; Second Vice-President, Dr. J. C. Morfit, St. Louis, Mo.; Secretary, Dr. Henry E. Tuley, Louisville, Ky. (111 West Kentucky Street); Treasurer, Dr. Dudley S. Reynolds, Louisville, Ky. Next place of meeting, Chicago. Chairman of Committee of Arrangements, Dr. Harold N. Moyer. Time of meeting, October, 1899, date to be determined by the Executive Officers and the Chairman of the Committee of Arrangements.

The Danger of Disease from Bacteriological Laboratories. — The fact that several cases of plague have recently resulted in Vienna from the contraction of the disease by a servant in Professor Nothnagel's laboratory from the inoculated animals of which he had the care has raised the question, to which we previously adverted, of how much of the alleged danger, if any, is inherent in the presence of a laboratory, and how much may be avoided by care and proper discipline. It has been brought out in regard to the case of Barisch, the servant in question, that, not only had long familiarity bred carelessness in the handling of the animals, but this carelessness at the particular time of his infection had been increased by an over-indulgence which, though never praiseworthy, was in connection with his especial work and surroundings particularly reprehensible.

Alvarenga Prize of the College of Physicians of Philadelphia. — The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about one hundred and eighty dollars, will be made on July 14, 1898, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition must be received by the Secretary of the College, Thomas R. Neilson, on or before May 1, 1899. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The Alvarenga Prize for 1898 has been awarded to Dr. S. A. Knopf, of New York City, for an Essay entitled: "Modern Prophylaxis of Pulmonary Tuberculosis and its Treatment in Special Institutions and at Home."

BOSTON AND NEW ENGLAND.

Death of Dr. A. H. Robinson. — Abraham H. Robinson, A.M., M.D., died in Concord, N. H., November 10th. He was born in Concord in 1813. He was graduated at Yale in 1835. He pursued his medical course at Yale and Dartmouth. He had been President of the Centre District and New Hampshire Medical Societies, and twice represented the town of Salisbury in the House of Representatives. During the War of the Rebellion he was a surgeon in the army.

A Uniform and Efficient Quarantine System. — A convention has been called, to meet in Memphis next week, to evolve a plan for a uniform and more efficient quarantine system. Dr. H. P. Walcott, Chairman of the State Board of Health, and Dr. S. H. Durgin, Chairman of the Boston Board, have been appointed by the Governor to represent the State of Massachusetts.

Death of D. R. Dewey, M.D., Assistant-Surgeon, United States Volunteers. — Dr. D. R. Dewey died at his home in North Adams, Mass., November 6th, from typhoid fever, contracted at Camp Chickamauga last August. He was Assistant-Surgeon of the Fourteenth New York, and after some service with his regiment, returned ill with typhoid, from which he apparently recovered, when a relapse ensued, which caused his death. Dr. Dewey was born at Whitehall, N. Y. His father was a surgeon in the Civil War, served with the Fourteenth New York too, and came home from service to die when his son was three years old. He attended Williams College, and was graduated in medicine from Columbia University.

Suffolk District Medical Society. — The stated meeting of the Suffolk District Medical Society took place at 19 Boylston Place on October 29th, President Francis H. Brown in the chair. The first paper was by Dr. Mark W. Richardson on "The Value of Urotropin as a Urinary Antiseptic, with especial reference to its Use in Typhoid Fever." It was discussed briefly by Dr. H. F. Vickery and Dr. Paul Thorndike. Second paper, "The Remote Effects by Sprains," by Dr. R. W. Lovett. Dr. Vietor spoke shortly from the floor on "Some other Effects of Sprains." The President nominated the following Secretaries of Sections. Section in Clinical Medicine and Hygiene, Dr. J. B. Ogden; Section in Obstetrics and Diseases of Women, Dr. C. H. Hare; Section in Anatomy and Surgery, Dr. Paul Thorndike. Dr. E. A. Crockett then read a paper entitled "With the Hospital Ship *Bay State* in Porto Rico," after which Dr. E. G. Brackett gave a few personal reminiscences of Santiago. Supper was served after the meeting.

NEW YORK.

Quarantine against Hamburg and Vienna. — On November 2d, the Commissioner of Immigration received orders from Washington to quarantine passengers from Hamburg and Vienna on their arrival at the port of New York, on account of the appearance of the bubonic plague at Vienna.

Annual Appropriation for Health Department. — The city's "Budget," for the year 1899, as finally revised, was passed by the Board of Estimate and Apportionment on October 31st, and the appropriation fixed for the expenses of the Health Department was $1,110,538. This is an increase of $119,480 over the allowance granted for 1898, but is $162,539 less than the estimate presented by the Board of Health.

The New Building of Kings County Medical Society. — The corner-stone of the new building of the Medical Society of the County of Kings in Brooklyn, N. Y., is to be laid, with appropriate exercises, on November 10th. The Society is now in its seventy-sixth year.

Dr. Bulkley's Lectures on Diseases of the Skin. — The Governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a series of clinical conferences on "Diseases of the Skin," on Wednesday afternoons, in the Out-Patient Hall of the hospital. For many years Dr. Bulkley has given his valuable courses of clinical lectures, which are always free to members of the profession and medical students, at the New York Hospital.

The New City Morgue. — The fine new city morgue, which has for some time past been in process of construction at the foot of East 26th Street, was opened without formalities on November 4th. The twenty-seven bodies in the old morgue were removed to it, and one of the first additional ones to be brought in was that of Margaret Corley, aged one hundred and seven years, who died of dementia the day before at the Manhattan State Hospital for the Insane on Blackwell's Island. The new morgue is far more commodious than any the city has ever possessed, and among its modern appliances is an extensive refrigerating plant.

Memorial to Dr. Fordyce Barker. — By the will of Mrs. Elizabeth L. Barker, widow of Dr. Fordyce Barker, of New York, who died last week in Connecticut, $5,000 is left to St. Luke's Hospital for a free bed in memory of her husband and her son Fordyce Dwight Barker, to be known as the "Fordyce Barker Memorial Bed."

Ugly vs. Pretty Sick-Nurses. — At the conference of the State Federation of Woman's Clubs recently held in New York one of the subjects under discussion was the comparative merits of plain and pretty sick-nurses, and it was decided "by a large majority" that the former were vastly superior.

Amenities. — On November 5th Commissioner William T. Jenkins, chairman of the department's Sanitary Committee, submitted to the Board of Health a full history of the case of Colonel Waring, together with the report of the Chief Inspector of the First Division. In it he criticises the Quarantine officials as not showing a proper regard for the public safety in failing to detain the Colonel under observation. In a subsequent part of his report Dr. Jenkins upholds the City Health Department in assuming the responsibility of allowing Colonel Waring to remain at his residence, stating that the justification of this policy is ample by reason of the excellent sanitary condition, not only of the house, but also of the immediate surroundings, and the measures taken for the isolation of himself and those attending him. Dr. Jenkins is a Tammany Democrat and Croker's brother-in-law; Dr. Doty, at the head of the Quarantine Service, is a (Platt?) Republican!

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Miscellany.

THE INFLUENCE OF COITUS WITH WHITE MEN IN INDUCING STERILITY IN ABORIGINAL WOMEN.

Dr. Sarsfield Cassidy, of New South Wales (*Medical Council*, October), quoted in the *New York Medical Journal*, November 5th, says that it is well known in that country and established beyond doubt that an aboriginal native woman of Australia will never bear children to an aboriginal man after she has once had offspring by a white man. It has been tried in vain to find an instance where the aboriginal woman, having returned to the black man's camp, though sound in mind and body and absolutely free from any disease whatever, and having lived there with black men whose power of reproduction was beyond dispute, did not nevertheless remain absolutely barren.

If, says Dr. Cassidy, the diseases of civilized life were communicated to the woman before her return to the gunyah of the black man, thereby placing her *hors de combat* in the work of reproduction, the problem might be easily susceptible of solution; but it has been proved, he says, over and over again that the woman being absolutely sound and the man entirely able, no results follow their union even under the most favorable circumstances. Should she, however, return among white folks, she conceives with evident ease. The black man does not taboo her during her stay with him, but, on the contrary, on account of her mixing with the whites, he treats her with special friendship and ardent affection.

We may add that such is also the case on the west coast of Africa, where the black woman who has lived with a white man is especially favored by the native males.

CASES OF PLAGUE FOLLOWING ACCIDENTAL INOCULATION.

The *Indian Medical Gazette*, October, 1898, reports three cases of plague following accidental inoculation:

A medical officer made a post-mortem on a plague case in Madras one hour after death on October 7th. He was assisted by a native, who pricked his finger in sewing up the body. The medical officer felt ill on October 9th, was very ill on October 10th, temperature being 103°, and continued so until the night of October 16th, when the temperature became normal and he convalesced. The native, who pricked his finger, absented himself from work on October 10th, and died on October 15th. The autopsy showed that he had died of plague.

A hospital assistant made a post-mortem examination on March 14th, at 3 P. M., on the body of a patient who had died of pneumonic plague thirteen hours before, in the Parel Hospital, Bombay. During the examination he pricked one of the fingers of his left hand. On the evening of March 16th he felt ill. He was reported sick on March 18th, and had then high fever with enlargement of the left supratrochlea gland. On March 19th, there was a bubo in the left axilla, and he died on the morning of March 20th.

The period of incubation in these cases seems to have been from two to three days.

PLAGUE AT SAMARCAND.

The acknowledgment by the Russian Government of the presence of plague at Samarcand emphasizes the fact that for the last fifty-five years, with the exception of the epidemic outbreak at Vetljanka in 1878–79, Russia and Europe have been free from this disease. The outbreak at Vetljanka, a small Cossack village on the right bank of the river Volga, about one hundred and fifty miles from Astrachan, though pretty well localized was, considering the small population involved, a serious one. About four hundred and fifty deaths occurred during the epidemic.

Samarcand, in Asiatic Russia, is now a town of 30,000 inhabitants, and about 130 miles east of Bokhara. It is the capital of the province of Zerafshan, but is best known as the former capital of the great empire of Tamerlane, and it still contains his tomb.

The continued presence of plague in India, its appearance at Samarcand, the unfortunate laboratory experience at Vienna, have directed renewed attention to the disease.

"BOO-HOO" FEVER.

Walter F. Robinson, M.D., U. S. Medical Inspector at Honolulu; Lecturer on Electro-Therapeutics, Albany Medical College, gives the following account of a disease which it would seem, might be termed nostalgia, by a new name:

> Shortly after the troops were settled in Honolulu there appeared among them a peculiar complaint somewhat resembling the grip. There were pains in all the bones, especially in the small of the back; generally severe headache, coated tongue, loss of appetite and some little fever.
>
> It might be thought that these were mild attacks of malaria, more especially as there is malaria on the island. There were seldom chills with the attack, however, nor anything typical about the fever. It would be here to-day and gone to-morrow. The attacks would not last, as a rule, more than two or three days, and then the patient would feel as well as ever.
>
> One symptom, however, was almost constant, namely, that of general depression and discouragement. The soldier would lose all his courage and interest in his duties and in the army in general.
>
> All his good spirits would desert him, and he would only mope and wish to be sent home.
>
> This condition is so peculiar and characteristic that it has received the name of the "boo-hoo" fever, and as such is known all over the island. Strangers are very apt to be attacked with it, and its cause is undoubtedly the new climatic conditions in which the system of the patient finds itself.
>
> On this account the disease is sometimes called climatic fever. The bowels are generally bound up, and it is altogether a different disease from the diarrhea which is so common in hot climates.
>
> Both quinine and phenacetin are of value in this disease, and as already stated, it is of short duration and yields readily to treatment. It may fairly be compared to the distemper which affects horses when they are taken from one climate to another.
>
> The cases seemed to occur entirely in the first two weeks of our stay, and they are now seldom seen.

MUNYON'S "DOCTORS."

At Clerkenwell Sessions, James Edward Deane, forty-four, described as a medical practitioner, surrendered to his bail on an indictment charging him with stealing three small sums of money — 3*s.*, 3*s.*, and 4*s.* — belonging to his master, James Monroe Munyon, of "Munyon's Homeopathic Remedies," 121 and 123 Shaftesbury Avenue.

The allegation against the accused was that, whilst employed as a "consulting physician" at the establishment named, he sold "cures" taken from the stock before they were stamped, and failed to account for the money in some cases. This, the prosecution said, he had no authority to do, and he knew full well it was an illegal act to sell a patent medicine without the government stamp. There were properly-stamped "cures" for him to dispose of. Three witnesses proved going to the premises and representing that they suffered from fictitious ailments, for which they purchased remedies. Deane was supposed to have pocketed the money.

Hawley Harvey Crippen, London manager for Professor Munyon, in whose absence he had full control, said Mr. Munyon engaged "Dr." Deane.

The Judge: You call him "doctor." What are his qualifications? — I don't know. (Laughter.)

Witness added that the accused was under him, and commenced with a weekly wage of £4, increased subsequently first to £5 and then to £6. What instructions Mr. Munyon gave prisoner he did not know.

When did the professor last leave for America? — In May.

At that time did you know that the Medical Council were taking a special interest in Munyon? — They were taking a special interest in Dr. H——.

What university has the honor of Professor Munyon? He has an honorary degree from the University of Tennessee.

You are called "doctor." You are not qualified? — I don't pretend to be.

You can't get a qualified man to take on the position in London? — I beg your pardon; I can get half-a-dozen reputable doctors.

One has been struck off for occupying that position? — He has, sir.

Have you said, "I have heard customers coming and complaining that the medicines were swindles?" — I don't think I said swindles. (Laughter.) I might have.

Did you say also, "I have given instructions to fill the 4*s.* bottles with the 1*s.* pilules and sell them to the public at the 4*s.* price, representing them to be the stronger medicine?" — I did, sir.

The 4*s.* and the 1*s.* "cures" are identical, aren't they? — No.

You advertise twenty-four remedies. Aren't they all the same? — No.

Can you tell me any other ingredient than sugar and water in these "cures?" — I don't think I need answer that question.

Mr. McConnell: We need not inquire too deeply into this.

Do you know Mr. Dixon, of Toronto? — Yes.

And that he swallowed two dozen of Munyon's stuff to show what he thought of it? (Laughter.) Was there a strong article about Munyon in a certain medical paper? — Doctors are always jealous of one another. (Laughter.)

But Munyon is not a doctor? — True; but his medicines are such a success that they don't like their patients being taken away. (Laughter.)

The Judge: You advertised to give away 10,000 samples. Did the public rush for those? — Rather; we distributed 20,000.

The defence was that Munyon instructed Deane to act as he thought best, and to recoup himself out of the sales for any expense he was put to in his position.

The jury returned a verdict of not guilty. — *Food and Sanitation*, London, October 1, 1898.

THERAPEUTIC NOTE.

Antistreptococcic Serum. — At a recent meeting of the Obstetrical Society of London, Dr. J. Walters and Mr. A. Walters [1] presented notes of a case of septicemia of puerperal nature, which was successfully treated by the antistreptococcic serum. The case seems to have been one of moderate severity, although strongly pronounced. Before the administration of the serum (ten cubic centimetres of antistreptococcic serum of a local preparation, injected subcutaneously), patient had a temperature of 103° F., pulse 120; there was intense headache, offensive local discharge and an urticarial rash. A few hours after the injection patient appeared bright and cheerful and the temperature had fallen to 98° F. There was, however, another, though insignificant, rise of temperature on the next day to 100.4° F., and another ten cubic centimetres was again injected with similar good results. After this the patient continued improved, but this second injection seems to have been followed by great depression of several days' duration and by albuminuria of a transient nature. The authors have no doubt that the recovery was due to the employment of the serum.

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Correspondence.

EXPERT MEDICAL TESTIMONY.

Boston, October 3, 1898.

Mr. Editor: — From the *Century Dictionary* we learn that an expert is: "In *law*, a person who by virtue of special acquired knowledge or experience on a subject, presumably not within the knowledge of men generally, may testify in a court of justice to matters of opinion thereon, as distinguished from ordinary witnesses, who can in general testify only to facts."

We doubt if ever before we have discovered a definition more completely satisfactory in every respect. Many times we have sat in a court of justice and listened to the outpouring by medical experts of knowledge, so marvellously "special," that mere "statements of facts" have seemed to us, by contrast, uncommonly dull and out of place. We have gained, moreover, from these experts, ideas of anatomy, physiology and pathology so foreign to the knowledge of physicians generally, that we wondered if the court and jury fully appreciated the splendid opportunities afforded them for acquiring an almost superhuman insight into the workings of the human mechanism, both in its normal condition and in the blighting clutch of disease.

We used to think, for instance, when a person received a blow upon the head, of sufficient violence to bring about temporary unconsciousness, that the nervous phenomena which followed were due to perverted function of the traumatized cranial contents. In the light of expert or special acquired knowledge, we now see our error. If the victim of the injury is a woman, we know that her nervous symptoms are but the manifestation of an anteflexed or retroverted uterus and a criminal lust for gain. In the male, such traumatisms are almost invariably followed by a disturbance in the delicate mechanism of the truth-telling centres of the cortex, which results in a condition designated by certain experts, "traumatic mendacity." This, like most other nervous perturbations due to injury, runs a very *bizarre* course and invariably terminates by *restitutio ad integram*, immediately after the award of damages. Its genesis is little short of marvellous. Given the case of a street laborer who receives an injury through the carelessness of the servant of some corporation. Little does the ordinary medical man dream of the power of that injury to cause a complete moral overthrow and evoke a fund of intuitive knowledge regarding neurology! Within twenty-four hours we find this supposedly grossly ignorant laborer thoroughly conversant with hysterical stigmata of every kind, and as the elasticity of his conscience is equalled only by that of his field of vision, we find him expanding the former and contracting the latter as circumstances demand. This is but one of the many possibilities afforded by the trauma. We have discovered that persons thus suddenly benighted by injury mendaciously conceal at times all evidence of sensibility in a limb, even under the test of strong electrical stimulation.

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[1] The Medical Press, October 12, 1898.

From the same expert sources we have gained such a fund of knowledge concerning the structure and function of the nervous system in general as to make even the French or romantic school of neurologists green with envy. Many of the diagnostic signs, upon which we formerly laid great stress, have entirely lost their significance, and all our old ideas as to prognosis are completely overthrown, for we now fully realize that most of the traumatic nervous conditions which we were wont to regard as next to hopeless will yield to the curative influence of gold, if only it be exhibited in sufficient amount.

In the old days we were so misguided as to look with some apprehension for the future of an injured joint in a person past middle life, and, with our vague notions of pathology, used to be on the lookout for a complicating condition of chronic rheumatoid arthritis. It is now as plain as day to us that the stiffness and limitation of motion which we observe in such cases is simply and solely the result of willful disuse.

The heart is an organ about which our antiquated absurd notions have been reduced to the vanishing point, and we can hardly find words to express the surprise we felt when brought to the realization of our simply awful ignorance concerning the lack of danger attendant upon violent exercise or emotion in persons afflicted with organic cardiac disease. Only now do we fully appreciate the power for good in such cases, which underlies the excitement of railway accidents and other catastrophes, and we hope soon to be able to induce all our cardiac cases, especially those with diseased myocardium, to institute a regular course of exercise, such as being dragged along by a rapidly moving trolley car or making daily ascents in boiler explosions.

In the Cimmerian darkness of ignorance in which we formerly blindly wallowed, we were wont to consider that the edema of cardiac and renal disease usually followed perfectly definite pathways, but in the guiding light of expert testimony we are brought face to face with its vagaries and are no longer betrayed into neglecting both heart and kidney as the source of those limited forms of edema which are frequently observed in the victims of so-called traumatic affections.

It is our hope that we have sufficiently demonstrated the superior value of expert medical testimony, of "special acquired knowledge, presumably not within the knowledge of men generally," as distinguished from that of the ordinary witness who must in general limit himself to the statement of bald fact, and we gratefully acknowledge our indebtedness to the expert for forcing upon our attention matters relating to the theory and practice of medical science which seem little short of revelation. We have often sought to discover the source whence comes this knowledge so far beyond the scope of the average human mind, but always in vain. No institution of medical learning within the ken of mortal man seems wholly adequate to the production of such prodigies. Regarding the genus analytically we find that it is commonly subdivided into two species, the peculiarity of the one being to magnify, and of the other to minimize, all matters coming under its observation. Let us take our Gulliver and investigate the medical schools of Brobdingnag and Lilliput.

Very truly yours,

Justitia.

METEOROLOGICAL RECORD

For the week ending October 29th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...23	29.90	54	60	47	69	60	64	W.	W.	18	14	C.	C.	
M..24	30.36	56	66	45	69	73	71	S.W.	S.W.	9	16	C.	O.	
T...25	30.32	58	68	48	90	77	84	S.W.	S.	11	12	C.	C.	
W..26	29 88	62	68	55	89	93	91	S.E.	S.	6	24	O.	LR.	1.43
T...27	29.97	52	66	39	78	62	70	S.W.	W.	17	9	O.	C.	.40
F...28	30.43	40	46	34	71	74	72	N.	E.	9	9	O.	O.	
S...29	30.34	42	46	38	94	96	95	N.	N.	9	9	H.	LR.	.06
☞	30.03	52	60	44	80	76	78			11	13			.27

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, October 29, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1133	370	8.56	12.32	3.12	1.84	2.16
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	182	72	10.45	10.45	3.30	4.40	1.65
Baltimore . .	506,389	185	58	15.12	10.80	2.70	5.40	6.48
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	120	39	16.15	10.20	3.40	5.10	.85
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	46	15	13.02	6.51	2.17	2.17	2.17
Nashville . .	87,754	40	11	15.00	12.50	2.50	—	12.50
Charleston . .	65,165	38	10	5.26	15.78	5.26	—	—
Worcester . .	108,240	22	4	8.30	8.30	8.30	—	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	22	8	8.30	16.60	8 30	—	—
Lowell . . .	88,641	41	14	7.32	19.52	2.44	2.44	2.44
Lynn	66,703	15	6	—	6.66	—	—	—
New Bedford .	66,340	20	11	20.00	10.00	15.00	5.00	—
Somerville . .	61,101	14	2	21.42	14.28	14.28	—	7.14
Lawrence . .	57,263	18	11	27.77	—	5.55	—	22.22
Springfield . .	56,501	21	7	8.32	12.48	—	—	8.32
Holyoke . . .	43,424	9	3	33.33	—	—	—	11.11
Brockton . .	37,278	10	0	—	10.00	—	—	—
Salem. . . .	36,883	12	4	—	—	—	—	—
Malden . . .	34,613	9	4	—	—	—	—	—
Chelsea . . .	33,468	10	5	30.00	20.00	—	10.00	—
Haverhill . .	32,022	12	2	25.00	8.33	25.00	—	—
Gloucester . .	30,589	—	—	—	—	—	—	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	4	0	25.00	50.00	—	25.00	—
Taunton . . .	28,167	9	2	11.11	22.22	—	11.11	—
Everett . . .	25,338	7	3	42.84	—	—	—	14.28
Quincy . . .	23,549	2	0	—	—	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	2	—	—	—	—	—
North Adams .	20,971	4	1	25.00	—	—	—	—
Chicopee . .	17,842	1	1	—	—	—	—	—
Medford . . .	16,511	4	0	—	—	—	—	—
Newburyport .	14,915	3	1	—	—	—	—	—
Melrose . . .	14,032	5	1	—	—	—	—	—

Deaths reported 2,031: under five years of age 669; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 225, consumption 250, acute lung diseases 230, diarrheal diseases 71, diphtheria and croup 57, typhoid fever 53, whooping-cough 16, scarlet fever 11, cerebro-spinal meningitis 10, malarial fever 2, erysipelas 2.

From whooping-cough Washington 7, New York 4, Boston 3, Providence and Haverhill 1 each. From scarlet fever New York 6, Boston 2, Providence, Worcester and Everett 1 each.

From cerebro-spinal meningitis New York 6, Holyoke 2, Washington and Providence 1 each. From erysipelas New York and Baltimore 1 each. From measles New York 1.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending October 22d, the death-rate was 18.8. Deaths reported 4,043; acute diseases of the respiratory organs (London) 263, diarrhea 250, fever 100, diphtheria 72, measles 48, whooping-cough 36, scarlet fever 32.

The death-rates ranged from 11.4 in Cardiff to 30.2 in Salford; Birmingham 21.4, Bradford 14.3, Gateshead 22.6, Hull 20 9, Leeds 19.4, Liverpool 24.4, London 17.3, Manchester 23.5, Newcastle-on-Tyne 26.4, Nottingham 20.5, Sheffield 23.7, Swansea 18.4, West Ham 15.1.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, November 16, 1898, at 8 P. M.

At 8 o'clock. Dr. G. G. Sears: "A Case of Sarcoma of the Mediastinum."

At 8.15 o'clock. Dr. J. H. Wright will show pathological specimens of unusual interest.

At 8.30 o'clock. Dr. J. H. Morse: "The Frequency of Rickets in Infancy in Boston and Vicinity." Discussion by Drs. T. M. Rotch, E. M. Buckingham, A. H. Wentworth and J. W. Bartol.

J. B. OGDEN, M.D., *Secretary*,
Harvard Medical School, Boston.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION. — The annual meeting of this Association will be held in the City of New York, on Tuesday, Wednesday, Thursday and Friday, May 23 to 26, 1899.

C. B. BURR, M.D., *Secretary*.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.— The eighth annual meeting of this Association will be held in the Academy of Medicine, No. 17 West Forty-third Street, New York City, Thursday, November 17, 1898. The officers of this Society are:

C. B. HERRICK, M.D., *President*, Troy.
GEO. CHAFFEE, M.D., *Secretary*, Brooklyn.

RECENT DEATH.

DAVID ROBERT DEWEY, M.D., M.M.S.S., died in North Adams, November 5, 1898, aged thirty-four years.

BOOKS AND PAMPHLETS RECEIVED.

Brain: A Journal of Neurology. Edited for the Neurological Society of London by A. de Watteville. London. 1898.

Intravenous Injection of Normal Saline Solution. By Horace Tracy Hanks, M.D., LL.D., New York. Reprint. 1898.

Histology: Normal and Morbid. By Edward K. Dunham, Ph.B., M.D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. Illustrated with 363 engravings. New York and Philadelphia: Lea Brothers & Co. 1898.

Clinical Lectures on Mental Diseases. By T. S. Clouston, M.D., Edin , F.R.C.P.E., Physician-Superintendent of the Royal Edinburgh Asylum for the Insane; Lecturer on Mental Diseases in the University of Edinburgh, etc. Fifth edition. Philadelphia and New York: Lea Brothers & Co. 1898.

Affections Chirurgicales du Tronc, Statistique et Observations. Par le Dr. Pollaillon, Chirurgien de l'Hôtel Dieu; Professeur agregé à la Faculté de médecine de Paris; Chargé de cours de Clinique annexe; Membre de l'Académie de Médecine. Paris: Librairie Octave Doin, Editeur. 1898.

Elements of Histology. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology, and J. S. Edkins, M.A., M.B., Joint Lecturer and Demonstrator of Physiology in the Medical School of St. Bartholomew's Hospital, London. Revised and enlarged edition. Philadelphia and New York: Lea Brothers & Co. 1898.

A Laboratory Guide to Urinalysis and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in the Medical Department, University of Vermont; Member of the American Chemical Society and of the Chemical Societies of Paris and Berlin, etc. Fourth edition. New York: William Wood & Co. 1898.

Affections Chirurgicales du Tronc, Region Ano-Rectale, Maladies Urinaires Commune aux Deux Sexes, Maladies des Organes Genitaux de l'Homme. Par le Dr. Pollaillon, Chirurgien de l'Hotel-Dieu; Professeur agrégé à la Faculté de médecine de Paris; Chargé de cours de clinique annexe; Membre de l'Academie de Médecine. Paris: Librairie Octave Doin, Editeur. 1898.

A Text-Book of Pathology. By Alfred Stengel, M.D., Instructor in Clinical Medicine in the University of Pennsylvania; Professor of Clinical Medicine in the Woman's Medical College; Physician to the Philadelphia Hospital; Physician to the Children's Hospital, Philadelphia, etc. With 372 illustrations. Philadelphia: W. B. Saunders. 1898.

The Pocket Formulary for the Treatment of Disease in Children. By Ludwig Freyberger, M.D., Vienna, M.R.C.P., Lond., M.R.C.S., Eng., Clinical Assistant, Hospital for Sick Children, Great Ormond St.; Curator of the Museum, Pathologist and Registrar, Great Northern Central Hospital. London: The Rebman Publishing Co. 1898.

Memoirs of Pliny Earle, M.D , with Extracts from his Diary and Letters (1830–1892) and Selections from his Professional Writings (1839–1891). Edited, with a General Introduction, by F. B. Sanborn, of Concord, former Chairman of the Board of State Charities of Massachusetts and Inspector of Charities. Boston: Damrell & Upham. 1898.

A Treatise on the Science and Practice of Midwifery. By W. S. Playfair, M.D., LL.D., F.R C.P., Emeritus Professor of Obstetric Medicine in King's College, London; Examiner in Midwifery to the Universities of Cambridge and London. Seventh American from the ninth English edition. Philadelphia and New York: Lea Brothers & Co. 1898.

Diseases of Women: a Manual of Gynecology, designed Especially for the Use of Students and General Practitioners. By F. H. Davenport, A B., M.D., Assistant Professor in Gynecology, Harvard Medical School; Assistant Surgeon to the Free Hospital for Women, Boston. Third edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co. 1898.

The Principles and Practice of Hydrotherapy, a Guide to the Application of Water in Disease, for Students and Practitioners of Medicine. By Simon Baruch, M.D., Visiting Physician to the J. Hood Wright Memorial (formerly Manhattan General) Hospital; Member of the New York Academy of Medicine, etc. With numerous illustrations. New York: William Wood & Co. 1898.

Diet and Food Considered in Relation to Strength and Power of Endurance, Training and Athletics. By Alexander Haig, M.A., M.D., Oxon., F.R.C.P., Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women; Author of "Uric Acid as a Factor in the Causation of Disease." With five illustrations. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1898.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students. By Oswald Vierordt, Professor of Medicine at the University of Heidelberg, etc. Authorized translation with additions. By Francis H. Stuart, A.M., M.D., Member of the Medical Society of the County of Kings, New York, etc. Fourth American edition from the fifth German, revised and enlarged. Philadelphia: W. B. Saunders. 1898.

The Principles and Practice of Medicine, designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., Fellow of the Royal Society; Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to Johns Hopkins Hospital, Baltimore. Third edition, entirely revised and enlarged. New York: D. Appleton & Co. 1898.

The Refraction of the Eye, a Manual for Students. By Gustavus Hartridge, F.R.C.S , Senior Surgeon to the Royal Westminster Ophthalmic Hospital; Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery to the Westminster Hospital; Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With 104 illustrations. Ninth edition. London: J. & A. Churchill. Philadelphia: P. Blakiston, Son & Co. 1898.

Ear Records; a Method of Recording Ear Cures. Arranged by John C. Lester, M.D., Fellow of the American Academy of Medicine; Fellow of the American Laryngological, Rhinological and Otological Societies; Assistant Surgeon, New York Eye and Ear Infirmary, etc.; and Vincent Gomez, M.D., Ophthalmologist to the Almshouse, Workhouse and Incurable Hospitals; Assistant Surgeon, New York Eye and Ear Infirmary; Instructor in Diseases of the Ear, New York Polyclinic, etc. New York: J. W. & Geo. H. Hahn. 1898.

Manual of Chemistry, a Guide to Lectures and Laboratory Work for Beginners in Chemistry, a Text-Book Specially Adapted for Students of Medicine, Pharmacy and Dentistry. W. Simon, Ph.D., M.D., Professor of Surgery in the College of Physicians and Surgeons of Baltimore, in the Maryland College of Pharmacy and in the Baltimore College of Dental Surgery. Sixth edition, thoroughly revised, with 46 illustrations and eight colored plates, representing 64 chemical reactions. Philadelphia and New York: Lea Brothers & Co. 1898.

An American Text-Book of the Diseases of Children, Including Special Chapters on Essential Surgical Subjects: Orthopedics; Diseases of the Eye, Ear, Nose and Throat; Diseases of the Skin, and on the Diet, Hygiene and General Management of Children. By American Teachers. Edited by Louis Starr, M.D., Consulting Pedriatist to the Maternity Hospital, Philadelphia, etc., assisted by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania, etc. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

Original Articles.

COMMON ERRORS OF GENERAL PRACTITIONERS IN DEALING WITH CASES OF PULMONARY TUBERCULOSIS.[1]

BY FREDERICK I. KNIGHT, M.D., BOSTON.

The errors of which I shall speak are well known to the members of this Association and encountered by many of them daily, and it would be an improper use of the time of the Association to weary it with a long discourse upon them, but I thought that they might be diminished by briefly calling attention to them here, if my remarks should be endorsed in the discussion by members of the Association.

(1) The first error to which I shall call attention is the failure to make an early diagnosis. An early diagnosis is not usually difficult since the discovery of the tubercle bacillus. Failure to make it, however, may be very serious, as it is especially true of this disease that the earlier its presence is discovered, the more amenable it is to treatment; whereas, if there is delay till the disease is self-evident and perhaps secondary infections have taken place, there is not much chance of restoring the patient to health. The most striking results of treatment of pulmonary tuberculosis in the great open health-resorts and also in sanitaria are in patients who present all the outward aspects of health from the start, who have never appeared as invalids.

Why is it that there is so often a failure to make the diagnosis early in those cases most promising of cure if taken in hand promptly, namely, those with morning cough and expectoration, but no fever or other general symptoms? The reason is that the patient naturally makes light of it, and perhaps contents himself with asking the doctor on the street for a prescription for a little cough, and this may be repeated several times without any suggestion of examination on the part of the physician, or until the patient looks and feels sick.

Another reason is that the physician may be the personal friend as well as medical adviser of the patient and shrinks from a knowledge of the results of a physical examination. This is also sometimes true in cases of a physician and a member of his own family.

The patient naturally considers a slight dry cough as due to some throat irritation, and a little hemoptysis as coming from the same region, but he should not be encouraged in this idea, as is too often the case, by the physician. Any cough should necessitate frequent examination of the chest, until the soundness of the lungs is proven by long acquaintance. Hemoptysis very rarely comes from any lesion of the throat, but usually from the bronchi. Another mistake is neglect to pay proper attention to fever, the physician very likely coinciding again with the patient that he has a "touch of malaria." Time and again have I seen patients with dry cough, chills and fever, not at all of malarial type, however, allowed to go on for weeks and months taking quinine, and no physical examination suggested.

(2) A second error is the failure to admit the gravity of the situation the moment it is discovered, and to put the patient at once in the best possible condition for recovery. Niemeyer used to say that the danger of a consumptive patient was "that he become tuberculous." In the light of modern pathology, I should say that the danger of a tuberculous patient is "that he become consumptive," that is, subject to secondary infections.

Unfortunately, too many physicians wait till the patient is consumptive, and then perhaps recommend expensive treatment, which is almost surely useless.

It is better, as a rule, that the patient also should be fully informed of the gravity of the situation, as in this way only will he give thorough co-operation in the effort for his recovery. Of course he should be fully impressed with the hope of recovery if the proper course is pursued.

(3) A third error is, while temporizing, in recommending treatment not only useless, but positively injurious. Giving medicines which take away the appetite and interfere otherwise with digestion does a great deal of mischief. Cough syrups, cod-liver oil and creosote do a large share in hastening the decline of patients. If any sedative is required it should be given in as simple a form as possible, and without syrup. I do not mean to say that cod-liver oil never does good, for there are patients who can take and assimilate it with ease, and greatly to their benefit, but it is cruel to prescribe it in a routine way without selecting cases and watching effects. Who has not many times seen patients with thickly coated tongues swallowing large doses of oil faithfully three times a day, eructating it all the time, and capable of assimilating neither that, nor any other food. Neither do I deny that creosote does good in some cases in modifying the bronchial secretion and improving digestion, but I believe that large doses as a rule take away the appetite and do more harm than good. It, like cod-liver oil, should be administered tentatively.

Another unfortunate mistake is often made in giving a general unrestricted order to "drink whiskey" as a preventive of consumption. The injudicious use of alcoholic stimulants, by depressing the vital forces, not only makes the patient irritable and dissatisfied with himself and everybody else, but very seriously interferes with his recovery.

Many patients also are seriously injured by being told to exercise when they should be kept quiet. This pertains especially to patients in a febrile condition.

(4) A grievous error is often committed in the matter of sending patients away from home. Sometimes those are sent away who have only a few weeks or months to live. Such patients in almost every case would naturally be better off at home.

Others are advised to change climate who cannot possibly afford to remain away from home long enough to do any good. They go away, live in miserable quarters, on poor food, and having spent all their money, in a short time are obliged to return. They naturally would have spent their little money to much better advantage at home.

Insufficient care is exercised in advising patients who *are* able and fit to make a change, as to the selection of a climate. Too often the advice is simply to "go South" or "go West." In such cases the patient often flits about from one climatic condition to another, without staying long enough to fully experience the modifying effect of any one, perhaps till the chance for beneficial action is past.

(5) The last error, a very grave one also, to which I shall call attention, is allowing the patient to go

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[1] Read at the annual meeting of the American Climatological Association at Bethlehem, N. H., August 31, 1898.

without sufficient medical supervision. This disease, like any formidable enemy, requires constant watchfulness — to help gains promptly, and as promptly to stay relapses. The general practitioner himself is apt to fail in this because his attention is absorbed in critical acute cases; but he also fails to place his patients in proper medical care when he sends them away, whereas the presence of a physician skilled in treating such cases should often determine the selection of a residence for the patient.

These are a few of the more serious of the errors in dealing with cases of pulmonary tuberculosis, by means of which hundreds of lives are sacrificed which might have been saved.

Therefore it becomes us to iterate and reiterate our warnings as long as they continue to exist.

SUGGESTIONS: THE RESULT OF RECENT EXPERIENCE WITH PHTHISICAL PATIENTS.[1]

BY VINCENT Y. BOWDITCH, M.D., BOSTON.

MR. PRESIDENT AND MEMBERS OF THE CLIMATOLOGICAL ASSOCIATION: — Even at the risk of being accused of "bringing coals to Newcastle" I venture to give you a few thoughts which have occurred to me of late; the result of experiences which I deem worthy of record.

Not only in my private practice but in my connection of late years with the Sharon Sanitarium for Pulmonary Diseases, at which place the express stipulation for entrance is that the cases shall be strictly in the "incipient" form in which the tubercular symptoms are *just beginning* to show themselves, I have been frequently impressed with the fact when patients have been sent for examination that one or two of what I believe to be the most important features in diagnosis, or rather prognosis, have apparently been overlooked by the physician in attendance. It has therefore seemed to me worth while to lay special emphasis upon these points at one of our meetings, hoping thereby to give that additional weight which comes from the utterances of an Association whose work is known to be in special directions.

It is a comparatively easy task to make the diagnosis of pulmonary tubercular disease even in the early stages, where the physical signs are definitely marked and the general symptoms are those so familiar to us all, but in those cases in which the signs, such as dulness upon percussion, changes in the respiratory murmur and even râles, are lacking, our powers of diagnosis and prognosis are often taxed to the utmost. It is in these latter cases that I have frequently found that the general practitioner has not paid sufficient attention to what I deem the most important symptoms, namely, the quality of the pulse, the temperature and condition of the digestive organs. Very often I have had cases sent to me as suitable for treatment with a hope of arrest of disease because of a lack of definite physical signs in the chest beyond possibly a few sparse râles or slight change in the respiratory murmur. I have been obliged, however, in these cases to give a very grave prognosis and have been unable to receive them as patients at the Sanitarium, simply because a weak, rapid pulse, more or less elevated temperature and poor condition of the stomach tell me that there is without doubt disseminated tubercular disease, even in the lungs, which renders the case a most unfavorable one for treatment, usually showing after death the almost universal dissemination of tubercle without perhaps marked breaking down of tissue.

It has been said by some one that he would prefer to treat a patient with two bad lungs and a good stomach, than one with one bad lung and a poor stomach.

While making due allowance for the more or less sweeping character of all such epigrammatic statements it has the very element of truth which I am endeavoring to emphasize. The importance of recognizing the unfavorable character of the cases I have mentioned cannot be overestimated, for it may make all the difference in the world to the poor patient as to whether he shall under such conditions be advised to go, for instance, to Colorado or other distant health resorts, with the chance of aggravating some of his most distressing symptoms, or, better, advised to make a less radical change and remain nearer home and friends.

I feel confident that those of our members here who live in the more noted health resorts will, from their experience, support me in emphasizing the importance of recognizing these facts which affect the whole future welfare of the patient.

In a word then; a rapid, feeble pulse, fluctuating temperature, dyspnea, a pasty or dusky complexion and poor digestion are symptoms very frequently if not usually entirely inconsistent with a truly *incipient* form of pulmonary disease even when the physical signs in the chest are very few or even entirely lacking under the ordinary method of examination by auscultation and percussion.

Such symptoms moreover should militate strongly against the advice usually given for cases of true incipient phthisis, more especially against those forms of treatment which involve radical changes of climate away from home and friends.

I now wish to refer to a subject upon which I have already written a short paper, prepared for, but not read, at the meeting of this Association two years ago at Lakewood.[2]

A short time previous to that meeting I had been so astounded and stirred by statements made not only by laymen but by some physicians at the State House in Boston concerning the proposed abolition of two most useful institutions for consumptives in the suburbs of the city, that I felt I must protest against what seemed to me the extravagance of what was said and done at that time.

What I dwelt upon then was chiefly the fact that in our enthusiasm for the results of recent bacteriological work we are in danger sometimes of forgetting the patient's position, and in our desire to prevent spread of disease are oblivious of the fact that by sweeping, unguarded assertions, we are not only creating a spirit almost of terrorism among the friends, but are causing mental anguish to the phthisical patient himself, who feels himself a leper, a constant menace to the health and comfort of those he loves.

I cannot think, in fact know I am not alone in having instances of the unreasonable, sometimes brutal, behavior among friends of patients, founded upon an exaggerated fear, as I deem it, of the infectious nature of tubercular disease which, we have been taught, loses its chief source of danger when moderate measures are used for the prevention of infection.

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[1] Read at the annual meeting of American Climatological Association at Bethlehem, N. H., August 31, 1898.

[2] A Plea for Moderation in Our Statements Concerning the Contagiousness of Phthisis. Boston Medical and Surgical Journal, 1896.

Let me cite an instance: A young, sensitive girl who had undoubted symptoms of tubercular disease, enlarged glands, cough, slight expectoration containing bacilli, etc., after a prolonged stay at Sharon was enabled to return to her home and take up some light occupation. Soon after, the mother came to me in distress with the following history. She had found her daughter sitting at a table alone, very pale, with a letter upon the floor at her side. Upon asking her what was troubling her, she finally only said, "Mamma, I am a leper," and handed her the letter from a member of the family, who had formerly been very kind to her, and to whom the girl had written that she was so well now that she should soon go to see her. The mother showed me the letter and I read, "On no account whatever must you ever enter my house again; you are a source of danger to everybody." I can let you imagine the effect of such brutal words to a young, delicate girl. A subsequent letter in answer to the mother's indignant reply, said, "The highest authorities tell us this is a very infectious disease, and I must think of my child."

This is only one of many similar instances in my own practice and that of others. It may be said that the physician's function is merely to point out the truth as far as he knows it, and that he cannot control the selfishness and brutality of those with whom he comes in contact. Very true, to a certain extent, but I maintain that we are losing sight of one of the highest and noblest functions of the ideal physician if in giving our rules for the protection of the well we do not use caution in our statements founded upon recent comparatively experimental work, and fail to inculcate at the same time that spirit of kindness and thoughtfulness for the feelings of the sick which humanity demands.

I trust that I shall not be misunderstood, as I stated in my previous paper on this subject. No one could possibly feel a greater respect than I for what bacteriology has brought us already and for what is still in store for us from that source; no one could possibly feel the importance more than myself of teaching patients and their friends the paramount importance of absolute cleanliness about the phthisical patient, of the careful disposal of the sputa, and attending to the general health of those in attendance, but I maintain that this can all be wisely and kindly done without causing, as a rule, this spirit of terrorism of which I have spoken and without making such sweeping and unjustifiable statements as "all homes for consumptives are a source of danger to the surrounding community" however regulated, and other, equally to my mind, false assertions. Let us keep in mind, moreover, that in getting the "juste milieu" of every question the pendulum swings far in both directions, and the history of medicine shows us plainly that in no other profession or walk in life do we have to proceed so cautiously as in ours before finally accepting new theories, enthusiasm for which carries us at first into extreme statements which afterwards often have to be greatly modified if not entirely retracted.

Of late, we are confronted with another statement made by Flügge, of Berlin,[3] regarding the possibility or probability of bacilli being carried in small droplets of mouth fluid into the air during the act of coughing. He maintains, moreover, that the chief danger of infection comes from these suspended droplets with bacilli in them and not from the dried sputa, as we have been taught hitherto by Cornet and many others.

Up to a comparatively recent period, owing to numberless experiments by competent men, our belief has been that the expired breath has no danger unless as in violent coughing, small particles of sputa happen to be expelled, but this statement would carry us still farther and make us believe that even with the destruction of the sputa we are still exposed to what Flügge believes to be the chief source of danger.

We are in search of truth at whatever cost, and if it can be proven that Flügge's statements are based on facts, we may be obliged to change our present views, but we are justified in waiting for further proof before accepting this extreme theory.

It would seem probable, too, with the now well-known experiments of Cornet and others in Europe, and of Hance, Gardner and many others in this country upon the dust taken from rooms in Sanitaria, hotels, hospitals, etc., that the danger from spread of bacilli by these droplets in the expired breath alone must be extremely small, when it has been shown many times that in those rooms where spitting upon the floor was prohibited, and proper cleanliness enforced, the number of bacilli found in the dust was practically nothing, and again I ask for caution in accepting, still more in promulgating, this later idea with undue haste.

I ask this especially from the following fact; another illustration of the rapidity with which many of the laity seize upon a statement made by physicians, and of the state of nervous apprehension into which many are thrown thereby. Several months ago my attention was first called to Flügge's statement by a patient who came to inquire if I felt there was danger to his daughter from the *cough* of a young lady living not very far from his own house in the country, and of whom his daughter saw little or nothing. Except for his evident nervous anxiety it was hard to be serious in my reply that I thought that the danger amounted practically to nothing, but upon asking him why he had entertained this idea, he said he had read in one of the Board of Health Reports of a neighboring State a remark or quotation which led him to believe that there was ground for his apprehension. Later, upon reading the quotation to which he referred I found it to be the statement of Flügge which apparently the Board of Health of his State had immediately accepted and stated as a fact, a position which with our present knowledge is to my mind unjustifiable.

To hide plain, proven facts for the sake of temporary comfort I regard as wrong absolutely, but that these facts may be made known wisely and without creating terrorism and with a minimum of mental suffering to the one most concerned I believe to be perfectly possible in most cases. I speak now from the point of view of the practitioner who naturally comes in contact with these different forms of human nature more than those whose work lies in the laboratory. The practising physician can note better than any one else the dire effect of the state of nervous apprehension into which so many are thrown by fear of disease. He also sees the mental suffering given to many a poor consumptive who by the exaggeration of others has been made to feel himself an outcast, and he learns in both instances the wisdom of guarded speech.

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[3] Deutsch. med. Woch., October 15, 1897.

In closing, let me recall Koch's own words quoted in that most admirable essay on the "Prevention of Tuberculosis," by James B. Russell, of Glasgow, and reprinted for general circulation by the Massachusetts State Board of Health; an essay that should be read by every medical man. In fully recognizing the utterly different elements which enter into cases of phthisis as compared with other infectious diseases, he says, in the closing words of his famous treatise, "It seems to me the time has now come to adopt prophylactic measures against tuberculosis. But owing to the wide distribution of the disease, all steps taken against it have to deal with social relations, and it must be, therefore, carefully considered in what way and how far we may proceed without neutralizing, by unavoidable disturbances and other disadvantages, the benefit obtained."

To the courtesy of Dr. J. J. Curry, U. S. A., late of the Boston City Hospital Pathological Department, I am indebted for the manuscript of his paper read before the Suffolk District Society in Boston last spring, and soon to be published in the *Boston Medical and Surgical Journal*.[4] In this he gives the results of some experiments made while associated with Prof. Edwin Klebs at Citronelle, Ala., last winter. Although granting that the number of the experiments is small, he judges from his experience thus far that although very probably bacilli are found in a certain number of the small droplets expelled from the mouth during hard coughing and that hence certain precautions are wise, yet he believes that the dangers spoken of by Flügge are greatly overestimated.

Let us be careful then in promulgating the theories of those whose work hitherto has gained our confidence and whom we regard as teachers and leaders in our profession, lest in our zeal we go much farther than they themselves intend, and in so doing injure rather than aid the object we have in view.

Clinical Department.

SCORBUTUS IN A BABY WITH HEMORRHAGIC DIATHESIS.

BY JOSHUA C. HUBBARD, A.B., M.D., BOSTON.

Through the kindness of the Boston Lying-in Hospital and the Infants' Hospital I am able to report almost the whole life history of the following case:

Eva McK. was born about half-past ten in the evening of March 9, 1898. Although there was nothing remarkable about the labor the baby was cyanotic and required stimulation. The next morning at four o'clock there was oozing from the cord and right conjunctiva. A fresh ligature stopped the bleeding from the cord though only temporarily, as it began again in a few hours. Another ligature was applied. The baby was cyanotic, breathing with difficulty and appearing almost lifeless. In the evening the bleeding from the cord again started and was again checked by a fresh ligature.

March 11th. Last night the baby vomited some blood. To-day some cerebral irritation shown by twitching of the eyelids, rolling of the eyes and convulsive movements of the arms. Hands and arms are of a yellowish tinge. In the evening convulsive movements of the head.

March 12th. During last night convulsive movements of the arms. During these attacks internal strabismus of both eyes. Baby lies with thumbs turned in, arms tightly flexed, legs crossed and whole body rigid. At times there is some retraction of the head.

March 18th. Blood appeared last night in both the vomitus and the dejections.

The baby was then transferred to the Infants' Hospital where she had no more hemorrhages. On March 30th she was transferred to the South Department as Klebs-Löffler bacilli were found in her throat on routine examination. I will quote nearly the physical examination made on entrance.

Rather emaciated. Desquamation on hands and feet especially, also on some other parts of the body. Cry not very strong. Skin of yellowish tinge mixed with red. Considerable rigidity of the extremities, especially of the arms. Elbows flexed. Impossible to fully extend them. Attempts to do so make the biceps muscle hard and its tendon prominent and rigid. The fingers are clenched tight, the thumbs in the palms. The feet cannot be extended beyond a right angle, the anterior tendons then becoming tense and showing under the skin as though they were shortened. Legs cannot be fully extended at the knees. Eyes are not abnormal externally. No rigidity of the neck. Left frontal region flattened on the vertex as compared to the right. Heart and lungs normal. Spine normal. Abdomen not examined because of dressing about cord. Excoriation about anus. No evidences of hemorrhage in the skin or mucous membranes.

Sometime in the latter part of August the baby was brought to the Out-patient Department of the Infants' Hospital with the following history:

Her food had been malted milk two drachms, water four ounces, lime-water one drachm, the water being warmed but not boiled. The baby had been doing well until two weeks previous when she began to grow sore all over, the ankles, wrists, shoulders and, a few days later, the knees swelling. Some bleeding from the bowels for the last two or three days and from the mouth on one day. No eruption had been noticed. The urine was scanty but not red. The baby was referred to the Summer Hospital where I saw her, and on August 30th made the following physical examination.

Well developed and nourished baby. Pale. Cries when moved. When quiet seems free from pain. Knees and thighs held flexed. Arms held thrown back with hands by head. Fingers and thumbs flexed. Cannot be fully extended, apparently held by the palmar fascia. Fontanelle small, not depressed. Slight umbilical hernia. Heart, lungs, liver and abdomen negative. Pupils equal. No stomatitis. Hard, nonfluctuating, tender swellings at distal ends of radii and ulnæ, sternal ends of clavicles, distal ends of femora and tibiæ. Large swelling on outer posterior aspect of left leg just below the knee-joint. Marked swellings at the junctions of the ribs with their cartilages, many of them of more even form than the ordinary rosary of rickets. No enlarged glands. No increased temperature.

The baby was given modified milk, orange juice one-half ounce three times a day, and later some brandy every two hours. The dejections were of fairly good character. There was some vomiting.

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[4] October 13, 1898.

By September 2d the swellings had already begun to decrease.

September 13th. Baby can now be handled without causing pain. Swellings above knees all gone, leaving now more evident the enlargements just below the heads of the fibulæ. Swellings by right wrist and ankles still present though much smaller than at entrance.

September 22d. Swellings at sternal ends of clavicles gone. Shape of rosary has changed so that now like that of rickets. No enlargements at knees. Distal ends of leg and forearm bones still swollen. Some anterior bowing of bones just above left wrist and a suspicion of motion at the epiphysis.

After the first few days the orange juice had been decreased as the baby did not like it. Her improvement continued on the smaller amounts.

Unfortunately, the hospital closed at this time and the baby had to be sent home. Although she had improved a great deal as regards the scurvy she had steadily lost weight, dropping from six pounds six ounces at entrance, to five pounds eleven ounces, and on October 8th she was reported to the hospital as dead.

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MASSACHUSETTS GENERAL HOSPITAL.

Regular Clinical Meeting of the Medical Board, Friday, April 8, 1898, Dr. C. B. Porter in the chair.

Dr. H. H. A. Beach reported the following cases:

I. CHYLOUS CYST OF THE MESENTERY. LAPAROTOMY. RECOVERY.

II. INTESTINAL PERFORATION BY A FISH-BONE. INFLAMMATORY TUMOR. LAPAROTOMY. RECOVERY.

These cases are reported not alone for their rarity but for the interesting experiences they supplied in diagnosis and treatment. The first patient, a man fifty-six years of age, entered the medical side of the hospital under the care of Dr. R. H. Fitz on June 10 h, having enjoyed good health until the year 1892, when he had an attack of pleurisy. Family history negative. Six months before admission he had soreness and pain in the epigastrium after eating, with eructations of gas, constipation, but no vomiting or headache. Appetite fair. Between four and five months after, during an attack of colic and vomiting, he noticed a movable lump in the abdomen. He had been obliged to give up work on account of abdominal pain and had slept poorly for a month. At times after waiting a long while passed a large gush of urine. Arcus senilis. Emphysema of lungs. Pulse regular and of fair strength. Radial arteries atheromatous. Above the pubes was found a softish dull mass the size of a clenched fist. On catheterization only a little urine was obtained and no diminution of the mass. By rectum a slight enlargement of the prostate but no connection with the mass was detected bimanually. The glands of the groins were slightly enlarged. Superficial varicose veins in both legs. Urine was normal and acid. Specific gravity 1.026. It contained no albumin nor sugar.

June 12th. The mass could be moved from just above the symphysis pubis to a position in the right loin corresponding to that of the right kidney. Resonance in the right loin over the position of the kidney when the mass was displaced toward the pubes. The mass could be moved only a slight distance to the left of the median line. Second catheterization showed no difference in the mass. The daily amount of urine was normal. At times he had considerable pain in the tumor and could lie comfortably on the right side only.

Patient examined by Drs. Fitz and Beach, who did not think that the tumor was a floating kidney and advised transfer to the surgical service for exploration. Under ether the mass was found dull, firm, resistant, kidney-shaped and easily displaced from the right lumbar region to the pubes; its excursion limited by what seemed to be a pedicle springing from the right lumbar region. The solidity, shape and easily movable nature of the mass from the lumbar region to the pubes impressed me strongly as it did others who saw the case. with the belief that it was a kidney; but the unusual freedom of movement, which appeared to be greater than what I had ever observed in other cases of floating kidney, and its association with gastric symptoms raised doubts as to its renal origin.

An incision of four inches was made on the outside of the semilunar line and the omentum pushed to the left side. A coil of small intestine presented with a bulging mesentery that proved to be the mass felt from the outside. This was drawn into the wound and aspirated through a puncture of the mesentery. The contents were eight ounces of milky-looking fluid, on the surface of which oil globules appeared.

The cyst of retro-peritoneal origin developed between the mesenteric folds that connected it with the upper part of the small intestine. The mesentery was divided by an incision at right angles to the intestine and through that opening the sac was carefully dissected from its attachments. The mesenteric opening was then closed by a continuous silk suture and the abdominal wound closed with silver-wire sutures. Recovery was uneventful and the patient was discharged well in three weeks.

REPORT OF DR. F. B. MALLORY.

Cyst size of a large orange filled with white opaque fluid, like cream, microscope showed large fatty cells, numerous large and small drops of fat and irregular fat crystals, also cholestrine crystals. Microscopic examination of wall of cyst showed inner surface composed of vascular connective tissue; outer layer made up of fat and fibrous tissues containing many lymph follicles; the cyst probably arising from a dilated lacteal vessel.

The second case was that of a man who entered the hospital December 19, 1895, with a negative family history. Fifteen years ago while employed indoors was supposed to have had consumption; he coughed and raised blood. Has been well ever since with out-of-door employment. No specific history. Five weeks ago, without known cause, was seized in the night with chills. Has not felt quite well since, though he has continued his work (that of a stone-mason) to within a week.

One week after the chill he had pain localized in the left iliac region and would find it hard to stand erect. Has been feeling miserably, had chilly sensations and pain always in the left iliac region, worse at night and increased by retaining urine. Three weeks ago first noticed a bunch there of the size of his thumb that has increased rapidly. Up to three days ago had a movement of the bowels every day.

Examination: A tall man with nothing peculiar about his attitude. Back and spine negative. Tongue moist, good color. Pulse regular but not of good quality, 85. Respiration 20. Temperature 99.6°. Chest negative. Urine 1.022, albumin and sugar absent. Abdomen soft, with no distension. In the left iliac region, not attached to the skin, is a mass six by three inches, slightly tender, not movable to any extent, somewhat elastic; no pulsation; no bruit. Dull tympany over whole mass. Large rectal enema readily retained. Inflation of colon, etc., per rectum does not change characteristics of the mass. Rectal temperature negative. No glands in the groin. No tenderness on pressing together iliac bones. Leucocytosis 16,200. Patient has a deep urethral stricture.

December 24th. Bowels moved after two compound cathartic pills and two ounces epsom salts. Copious dark fluid movements containing blood.

December 25th. Stricture dilated.

December 26th. Temperature 99.4°. Mass now extends from the median line to the anterior superior spinous process of the ilium, and from the line of the umbilicus above to Poupart's ligament below. On deep palpation the mass seems to project to the right of the median line.

December 27th. Bowels moved by enema; no blood. Running slight temperature 99° to 99.6°. Pulse normal. Believing that the rapid development of the tumor was due to inflammatory deposit I decided to make an exploration with the view of settling that point and removing enough of the growth to determine its character, though I must confess that the outlook in favor of malignancy was most discouraging.

January 2d. Incision of four inches over the centre of the mass; the muscles and fascia were adherent to each other and to the peritoneum. The tumor was was not movable, and although fairly firm, the finger could be pushed through the most prominent part of it down to the iliac vessels lying beneath it. As the finger was withdrawn a few drops of pus were observed, and a fish-bone one and a quarter inches long, blackened at one end, followed. A piece of the tumor was removed for microscopical examination. A gauze drain was inserted and the wound partially closed with sutures.

January 3d. Temperature 101°.

January 4th. Temperature 99°. No abdominal disturbances.

January 5th. Temperature normal — gauze removed.

January 10th. House diet; the mass is diminishing; wound closing.

January 18th. Mass hard but is smaller. Very little discharge from the sinus.

January 30th. Up and about the ward.

February 2d. Discharged to attend as an out-patient.

The tumor continued to diminish. An abscess finally developed at the outer third of the groin, which opened spontaneously and discharged for a few weeks. It then closed and he has remained well ever since, resuming his occupation as a stonemason. Patient exhibited. Only a small scar indicates the seat of exploration. Upon careful examination of the abdomen no induration can be detected.

Dr. Whitney's report — A fragment of tissue showing simple fibrous tissue with round-celled infiltration. The foreign body removed proved to be a fish-bone.

DR. A. COOLIDGE, JR., reported a case of

CEREBRO-SPINAL FLUID FROM THE NOSE.

This case is interesting perhaps more from a neurological than from a laryngological standpoint. But it is in line with a class of cases which have been reported under the head of nasal hydrorrhea, which is described as the periodic flow of a large quantity of a serous fluid from the nose, almost always from one side only, and brought on sometimes by mental tire or similar strain, sometimes without cause and often only when the head is bent forward. Some cases seem to be merely an excessive degree of the flow of a vasomotor rhinitis, but in many the essential features of this neurosis are absent, and vague attempts have been made to explain it as due to some local trouble of the fifth nerve, and the fluid is supposed to be the normal nasal serum. On the other hand, Tilleau describes cases in which after trauma with what has been proved to be a fracture of the cribriform plate, cerebro-spinal fluid has escaped through the nose when the head is bent in a certain position. The history of this case is as follows:

O. M., boy, aged thirteen. Health always good. In June, 1893, he had a violent "cold" which laid him up for a week. His mother thinks he had lacrymation from both eyes for a few days, and a watery discharge from the right nostril only, no pus, no cerebral symptoms. Since that time the dropping of watery fluid has been constant from the right nostril whenever the head is bent well forward; none with the head erect and no sense of dropping into the throat. I first saw him on January 18, 1897. He was apparently in robust health. There was absolutely nothing abnormal to be seen in his nasal cavities or pharynx, and no evidence of anything in the sinuses. Within twenty seconds after his head is bent forward a clear, watery fluid begins to drop from his right nostril, and continues steadily while his head is in this position at the rate of one drop every five seconds. The same is true if he lies on his face. I made careful experiments to find if the flow went back into his pharynx when his head was erect or when he lay on his back, and concluded that it did not. Neither could I see accurately where the fluid came from, but I thought that it came from the upper part of the nasal cavity, rather than from the whole mucous membrane. If the fluid were allowed to flow for half an hour he complained of headache. I collected three ounces, which Dr. E. S. Wood kindly examined, and sent the following report:

Pale, slightly alkaline.
Specific gravity 1 010.
Chlorine 0.046 in 10 c. c.
Albumin, very slight trace.

"This is exactly the composition which I have found in specimens of cerebro-spinal fluid."

The patient was also seen by Dr. Walton, who found nothing abnormal in the eyes or sensations of the face. I tried different medication locally and generally, including atropine, but produced no results. Since that time there has been no change. The dropping has now been constant for nearly five years, and the boy does not seem to have suffered in the least. I cannot find anything abnormal in the nose itself, and must leave to others the explanation of how this fluid gets into it.

TUMORS OF THE NASO-PHARYNX.

The two cases which I briefly report show types of tumors which are not very uncommon, but which are sometimes mistaken for other growths. They are either fibromata or fibro-sarcomata, hard and vascular, and attached by a broad base to the basilar process of the occipital and sphenoid bones. They do not tend to become adherent to surrounding structures nor to increase their base of attachment, but in growing they follow the lines of least resistance, and consequently present two lobes, one round, filling the naso-pharynx, the other long and finger-shaped, filling one nasal cavity, even appearing through the external nostril. They are sometimes mistaken for adenoids or for simple mucous polypi and sometimes for a malignant sarcoma with a grave prognosis, after a microscopical report of a specimen removed for the purpose.

These tumors are not malignant, although some of them, especially the fibro-sarcomata, require years and sometimes repeated operations before they entirely disappear. They are found most frequently in young adults, from puberty to twenty years of age, but we have seen in the clinic three or four cases in children from eight to twelve. They occasionally give rise to spontaneous bleeding, which may be enough to be serious. The symptom which first attracts attention is obstruction to nasal breathing; complete on the side containing the nasal lobe, and partial on the other from the growth in the post-nasal space. A diagnosis can be made by the finger in the naso-pharynx. The best operation for their removal I will describe under the cases which I now show.

These two cases have so much in common that I will begin by combining their histories.

A. G. D. and W. G., boys, sixteen years of age, entered the hospital in the autumn of 1895, two and a half years ago, in the services of Dr. Porter and Dr. Warren, who kindly turned them over to me for operation. The patients had noticed increasing obstruction to nasal breathing for over a year, until finally they breathed entirely through the mouth. The naso-pharynx was nearly filled with a hard, smooth tumor attached to the basilar process, and a nasal prolongation was visible though the external nostril, in A. G. D. on the right, in W. G. on the left side. Under ether in the sitting position, a cord was first passed through the unobstructed side and brought out of the mouth and a post-nasal sponge attached, which was held to one side out of the way, so that the vault could be immediately plugged in case of bleeding after removal of the growth. The nasal projection of the tumor was then seized with a clamp through the nostril, and a loop of stout piano wire in an ecraseur passed around it and through the obstructed nostril into the pharynx, where with the finger it was placed as close as possible to the attachment of the tumor. The wire was then drawn around it and slowly tightened until in spite of this considerable blood began to appear. It was then cut through quickly, and in one case, the simple fibroma, the post-nasal plug drawn in and left for thirty-six hours. A slow cutting with the cold wire will sometimes succeed without any bleeding. The tumor is so hard that the ordinary snare ecraseur and finer piano wire used in operations in the nasal cavity are altogether too weak for the work. Rose position for this operation for one accustomed to it has decided advantages over the erect one.

Of these two cases one, A. G. D., was a hard, vascular fibroma. A year later all trace of the pedicle had disappeared, and now not only is he free from all symptoms, but inspection does not show anything abnormal except that we can see directly into the sphenoidal cavity on the right side through an enlarged opening.

The other case, W. G., was a fibro-sarcoma, a drawing of a section of which, made by Dr. Goodale at the time, I pass around. This pedicle did not shrivel up, but slowly increased in size, so that a year later I again removed a piece with an ecraseur. I have in the past attacked this and similar stumps with cutting instruments and cautery, but I have concluded that this does more harm than good. The less it is irritated the better. If it is possible it should be snared off, but it finally stops growing and slowly disappears. In this case for more than a year nothing has been done, it is steadily decreasing, and now no longer causes obstruction, although the stump is still plainly visible. I have seen other growths of this kind with the same microscopical appearance entirely disappear, and I have so far not seen any which have acted malignantly.

Dr. J. J. Putnam reported the following

CASE OF SPLANCHNOPTOSIS AND ACHYLIA GASTRICA WITH MELANCHOLIA.

I wish to present the following as a joint contribution from Dr. Joslin and myself and in so doing I desire to express my full appreciation of Dr. Joslin's skilful assistance in this and kindred investigations, without which my own part would have been impossible.

The case to be presented is one of almost universal splanchnoptosis, which is of peculiar interest because of the absence of some of the causes to which that condition has been referred by other observers.

The patient is, as will be seen, a tall spare man of seventy-one, who for the greater part of his life has been a captain of a coasting vessel. Although he shows at present marked symptoms of neuropathic character, this temperament did not come to him by inheritance, since he belongs to a large family of strong men and women, above the average size and weight. He has himself been the slenderest of ten or eleven children, his weight never exceeding 168 pounds, but he has led the reverse of a sedentary life, and until three years ago the only distinctly unfavorable influences to which he had been exposed have been the monotony and hard fare of a seaman's life and, perhaps in consequence of this, a persistent constipation. He has not been immoderate in the use of food or drink. His own children enjoy good health.

In December, 1894, he had what was supposed to be an attack of the grippe, lasting some three weeks. About four months later he began to suffer from lassitude and depression, and these symptoms have rendered his life miserable ever since, so that he dreads to go to sleep, because of the overwhelming and intolerable sense of misery and melancholy which he knows will come with the awakening, and will almost drive him to suicide. It was this state of depression, against which he has struggled in vain, which led him to seek my advice, and the existence of the symptom is the more striking from the fact that, as any one can see on talking with him, he is not a natural weakling, but a man of strong character and will.

In connection with the above symptoms and beginning with them has been a complete loss of appetite. This holds for all varieties of food, so that he eats only from a sense of duty. After meals there is a band-like feeling about the abdomen. Pain, nausea, vomiting, belching and diarrhea are absent. He has always had a little dyspepsia chiefly manifested by slight constipation. No headache or dizziness. In the last three years he has lost twenty pounds.

The patient is a tall, thin, cachectic-looking man, weight 137 pounds. The pupils are equal and react to light; the tongue is covered with a thick whitish coat which he daily scrapes off. This condition of the tongue has existed for ten years. Pharyngeal reflex present. Teeth poor. Heart not enlarged and no murmurs heard, but the radial arteries are markedly atheromatous. The abdomen is flat, the costal angle sharp and the aorta and common iliacs are plainly felt pulsating. The upper border of the stomach when distended with air is two to three finger-breadths above the umbilicus when the patient is in the horizontal position; when he is upright, it is at the umbilicus; the lower border reaches to the pubes. Liver duluess begins in sixth space, mammillary line, and ends in the same line, two finger-breadths above the umbilicus. The edge is readily felt and appears normal. Both kidneys are to be palpated, the right shows a considerable descent. Stiller's sign (movable tenth rib) is absent.

Examination of stomach contents. — Ewald test breakfast, March 13, 1898. By aspiration and expression one fluid ounce only was obtained. To make sure that the stomach was empty siphonage was employed and perhaps one-half fluid ounce more was secured. The contents, diluted with about ten ounces of water (used in siphoning) did not show any acid reaction to litmus paper. No free HCl was found, either by Congo paper or by Günzburg's reagent. The contents were not finely minced and looked undigested. Microscopically by the iodine test, but few of the starch granules showed concentric rings. No blood, mucous-membrane fragments, sarcinæ or lactic-acid bacilli were seen.

Second examination, March 16, 1898. Amount obtained after test breakfast, one and one-half ounces to two ounces. This was very slightly acid to litmus. Free HCl was shown to be absent by Congo and Günzburg's tests. Combined HCl was found absent by Ewald's modification of Sjoqvist's method. Lactic acid was present in considerable amount, but this test unfortunately was made some hours after the contents had been removed. Peptones were absent by Biuret test.

Third examination, March 30, 1898. Amount of gastric contents obtained one hour after test breakfast, one ounce, very slightly acid. Free HCl absent. Lactic acid absent. Odor very slightly sour. Peptones absent. A small clot of blood was found, and a good many cells suggestive of gastric origin, but no mucous-membrane fragments.

Examination of stools showed no excess of muscle or fat. No starch granules seen. No blood or pus.

Urine. — 1.032, color high, slightly acid; no albumin, no sugar. Rosenbach's reaction for indoxyl products showed them to be absent. Acidity in terms of one-tenth normal KOH solution before dinner = 22 c. c. Acidity in terms of one-tenth normal KOH solution one hour after dinner = 18 c. c.

Blood. — Reds 4,720,000. Whites 3,450. Hemoglobin about 87 per cent. It will be seen from all these tests that while the gastric digestion was absent, in striking contrast to it the motility of the stomach was normal or even above the normal average.

It is thus, obvious that the patient has two distinct affections so far as the gastric conditions are concerned, each of which is capable of existing entirely without the other, namely, the absence of gastric juice and the presence of a gastroptosis of marked degree. Associated with the latter we have also a prolapse of the liver and kidneys and possibly other abdominal organs.

The subject of enteroptosis has been much studied of late, and amongst others has called out two valuable papers from members of our own circle, Drs. A. K. Stone [1] and F. B. Lund.[2]

The subject of achylia has also been recently treated with great thoroughness by Martius and Lubarsch, of Rostock.[3] Both these conditions are capable of existing independently and either of them as prominent signs of a condition of which neuropathic states are also a feature. The conclusions arrived at by Martius, after his very able discussion, are that achylia, while it may of course be secondary to atrophy of the stomach, may occur primarily as a peculiarity of the secretory and nervous functions, a peculiarity either congenital or at least resting on a congenital tendency. This condition may continue for years or for a lifetime without giving rise to well-marked symptoms, so long as the motility of the stomach is such as to enable it to pass its contents rapidly onward, and the intestinal organs remain competent for the whole task of digestion. When these fail severe anemias are apt to result. As a matter of fact it is found that the gastric mucous membrane, even in these cases of achylia simplex, soon becomes more or less altered, so that gastric atrophy is apt to result. In cases of achylia, gastroptosis is apt to be present in some degree, if one can judge from ten observations of Eichorn,[4] but on the other hand, the abnormal position of the stomach in gastroptosis, which must sometimes make the process of emptying itself a very difficult one, is apt to lead to acid fermentation, and also in some cases to a true hyperchlorhydria.

As regards the causes of gastroptosis, I will only refer to the fact that some of those which are frequently present and which seem to account for the greater prevalence of this misplacement in the opposite sex (tight lacing, pregnancy, lack of exercise) are here absent. Nor was the patient a gormand. If the affection was due to any physical cause, the only ones to be discovered are constipation, constant standing, a long frame and perhaps some muscular weakness attending on advancing years.

I should not have ventured to bring so distinctly an abdominal a subject before so many experts in medicine were it not that the study of this disease has from the very first, or at least since the original publication of Glénard (1885), been one which has commanded the strong interest of neurologists. Achylia occurs mainly among neuropathics, gastroptosis and movable kidney are found mainly among neuropathics. What is the connection between the two states and what further instruction can we draw from the present case?

I cannot rehearse the controversy which has accused first one and then the other of these conditions as being the cause of the associated state. A vicious circle doubtless exists, but beyond and apart from this fact it is also obvious that in the abdominal condition and in the neuropathic condition we have to deal with twin signs, or rather with parallel signs out of a large number which could be enumerated, which stand to each other in no distinct relation of dependence. It has long been realized that peculiarities of the skeleton, of the skin, of the mucous membranes and of the vascular systems and the like, are apt to accompany feebleness of the nervous system, and Stiller[5] has pointed out that with gastroptosis and nephroptosis and neurasthenia of the "slender type," a movable tenth rib is usually associated. Retroversion of the uterus is common in cases of the same class and future investigations are sure to discover many more such signs. On the other hand, the remarkable immunity presented by patients with displaced uterus, stomachs and kidneys from nervous symptoms is equally noteworthy and points to a therapeutic inference of great importance.

Whether these disorders cause symptoms or not must depend in a great measure on the power of resistance of the individual nervous system and the form which the nervous symptoms will assume if they do occur in a given cause is determined in a considerable extent by chance. Just as the proverbial omnibus horse goes on dragging his weary load until he is taken out of the shafts and then collapses, so the nervous system is capable of bearing an almost infinite number of slight strains so long as other interests keep the machine as a whole tolerably in motion and maintain a sort of balance. Let this balance be disturbed, however, by some special illness, shock or strain, or by the attention being turned in one or another direction so that one disorder becomes more or less predominant for the time and this will form the centre of a sort of vortex, the force of which will be accentuated by the inflowing of the other morbid tendencies, which, formerly latent, now become manifest.

It need not, of course, be the case that the patient's conscious attention acts to break down the dam at one point; the whole process may occur below the threshold of consciousness and may simply concern the interplay of the vital functions as made possible through the lower nervous centres. But we see the working of the principle more easily when we are able to recognize that it is the patient's morbid attention which is accentuating one or another symptom. And conversely, it must often happen that although abdominal supporters and muscular exercise may do something, it is often with the higher functions of the nervous system that we must deal first if we would re-establish the old order of things, under which life was endurable even though not wholly satisfactory.

The following treatment was prescribed in the first instance to maintain the motility of the gastro-intestinal tract: (*a*) tinct. nucis vomicæ ten drops, three times a day, to be increased gradually to 30 drops, three times a day; (*b*) massage; (*c*) a laxative pill (Aloin Casc. Co.). In the second place attention was directed to the diet (*a*) to secure foods which, notwithstanding the lack of digestion in the stomach, would not irritate the alimentary canal further along. So all meat taken was previously minced and this rule applied in general to all the food. (*b*) Peptonized milk and prepared foods were given to help out the intestinal indigestion. The value of these artificial peptones has risen immeasurably in scientific medicine since it has been shown that they are capable of supplanting the foods from which they are derived. (c) It could be of no advantage to give pepsin to our patient because of the absence of HCl in the stomach. And it would be equally without result to give acidum hydrochloricum dilutum even in considerable doses as is plain when one considers that two or three eggs will combine with some one hundred and fifty drops of the dilute acid without showing a trace of free HCl. The vegetable ferment[6] derived from pineapple juice might be of value in this case since this ferment (Bromelin) acts best in neutral solutions, but will also act in faintly acid or alkaline ones. The popular prejudice regarding the indigestibility of pineapples should be confined to the cellulose.

The third indication for treatment was to raise the nutrition of the body, so as to enable the patient to cast off his melancholia. This was attempted (*a*) by giving five daily meals with alcohol in tonic doses and Mist. Glyconin. Co.— a preparation of obvious nutritive value. (*b*) By two daily rests, alternating with exercise and recreation, the body metabolism of the patient was spared and the mental symptoms combated. (*c*) Perhaps the greatest aid to recovery came from the encouragement given the patient which was markedly enhanced by his steady gain of weight.

REFERENCES.

1. Stone. Enteroptosis as a Clinical Factor in the Diseases of Women. Boston Medical and Surgical Journal, vol. cxxxvii, p. 332.
2. Lund. Movable Kidney and Enteroptosis. Boston Medical and Surgical Journal, vol. cxxxvii, p. 335.
3. Martius and Lubarsch. Achylia Gastrica. Leipzig und Wien, 1897.
4. Einhorn. Zur Achylia Gastrica. Arch. f. Verdauungskrank., i, 158.
5. Stiller. Ueber Enteroptose im Lichte eines neuen Stigma neurasthenicum. Arch. f. Verdauungskrank., 1896.
6. Chittenden, Joslin and Meara. On the Ferments contained in the Juice of the Pineapple, etc. Transactions Connecticut Academy, vol. viii, December, 1891.

(*To be continued.*)

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D. AND W. D. HALL, M.D.

BACTERIOLOGY.

In a paper by Uhthoff[1] read at the International Congress at Moscow, August, 1897, the bacteriology of corneal and conjunctival inflammations is very well presented. Insomuch as a bacteriological classification is not yet possible, clinical appearances must still be relied upon. The Frænkel-Weichselbaum diplococcus may be considered as the cause of the serpiginous ulcer, but it must not be forgotten that the atypical appearing cases are frequently due to the staphylo-streptococcic infection. The typical ulcer has not yet resulted from pneumococcus inoculation. The hypopion is sterile unless perforation has taken place. The keratitis of gonorrhea and diphtheria is due to accidental infection with other bacteria of suppuration. Of the conjunctival inflammations that caused by the gonoccoccus is well-marked in character. Gram's method is negative. The Frænkel-Weichselbaum diplococcus gives rise to a moderate, contagious, self-limited conjunctivitis, chiefly in children with catarrh and not uncommonly the formation of false membrane. This micro-organism stains by Gram's method. That form set up by the Week's bacillus is contagious, often epidemic and accompanied by great swelling. Corneal involvement is rare. This bacillus is frequently met with in granular suppurating conjunctivitis. Gram's method negative. The streptococci which are not stained by Gram set up a violent inflammation possibly accompanied with involvement of the deeper parts and false membranes. The Löffler bacillus which is stained by Gram may cause superficial false membranes as well as deep necrosing conjunctivitis without being able beforehand to decide as to the cause of such different behavior. The Ernst-Neisser staining method offers a means of differentiating the xerosis bacillus. The serum treatment is a powerful and active therapeutic measure to be employed in doubtful cases, but is not so potent in secondary corneal inflammation. The diplo-bacilli of Morax and Axenfeld, which is not stained by the Gram method, causes an inflammation chronic in course without decided appearances of irritation or corneal involvement. The pathogenesis of trachoma is not yet known, nor are the micro-organisms of follicular catarrh which are perhaps pseudo-gonoccocci. The bacilli of tuberculosis, lepra, rhinoscleroma, xerosis and actinomycosis need not be considered as causes of conjunctivitis nor can a specific form of infection be attributed to the staphylococci. The toxins may be considered as having a powerful influence upon the nutrition of the cornea.

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[1] Archives of Ophthalmology, xxvii, p. 91.

THE BACTERIOLOGY OF TRACHOMA.

Arnold Lawson [2] prefaces some observations of his own with a short historical review of the published researches into the bacteriology of this disease. Hirschberg and Kraus in 1881 claimed to have found a club-shaped micro-organism during the acute stage, but fail to find it during the chronic. Sattler the same year isolated micrococci which were circular in shape, grouped in threes and fours, but never in chains or masses. Koch, while in Egypt in 1884, found a bacillus resembling that of mouse septicemia, which was also afterwards described by Weeks who considered it to be the cause of acute catarrhal conjunctivitis or "Pink-eye." Raehlman and Poncet in 1885 announced that they had found a small micrococcus, and the following year Michel described a small biscuit-shaped diplococcus. Koucherski in 1887 found small diplococci resembling the gonococcus of Neisser. Schmidt considers Michel's coccus as causing acute blenorrhea and describes one of his own resembling the staphylococcus pyogenes, but larger and probably identical with Sattler's. In 1888 Staderini described a diplococcus smaller than the gonococcus and soon after Petresco described a micrococcus differing from Michel's in liquifying gelatin, from Neisser's by its staining by the Gram method, and from Poncet's by being found in the follicle as well as in the discharge. In 1889 Reid declared himself unable to find any special micro-organism and in the opinion of the Berlin Congress in 1890 the disease should be considered as an infective process, but no particular micro-organism could be considered as bearing a causal relation to it. In the following year Noisewski advocated the claims of a bacterium closely allied to the microsporon furfur of Kaposi. In 1893 Muttermilch expressed himself as being very much in doubt as to trachoma being caused by a specific organism, and Fuchs about that time stated that he believed trachoma to be due to the transference of infective gonorrheal material that had become chronic. Uhthoff believes in the existence of some specific organism at present unknown.

REMEDIES. — SCOPOLAMIN AND ATROSIN.

Otto Meyer,[3] of Breslau, as result of his comparative experiments upon the two drugs in pathological cases expresses himself as follows: One-per-cent. solutions of atrosin acted more strongly in iritis than an atropine solution of the same strength and in two cases synechiæ yielded to it which had previously been treated with scopolomin without effect. Both drugs cause an increased tension and slight irritation, and the effect on the accommodation is about the same in both. Occasionally after use of either drug, slight toxic symptoms such as vertigo, flushing of the face, disturbance of the pulse-rate, dryness of the fauces and an uncertain action on the accommodation were noticed. They are practically allied drugs and under the same conditions in which hyoscyamin is converted into atropine active, scopolamin is converted into inactive scopolamin or atrosin.

PROTARGOL IN OPHTHALMOLOGY.

Darier,[4] in a paper read before the Paris Academy of Medicine, advises the substitution of protargol for silver nitrate in all cases because it causes no pain or irritation, its solution keeps well and its bactericidal action is remarkable. It is not precipitated by chlorides, alkalies, sulphur compounds or albumin and it may be combined with cocain solutions. In catarrh, blepharitis, granular conjunctivitis and dacryocystitis he consider it even the superior of argentimine. A five-per-cent. solution as a collyrium can be put into the hands of the patient for use at home. A twenty-per-cent. solution can be applied directly to the averted lid by means of a brush in treating catarrhal conjunctivitis, while in the purulent form the strength may be increased to fifty per cent. A ten or fifteen per cent. solution may be used to replace the solution of silver nitrate in the method of Crede. Its effect upon corneal processes does not seem to exceed that of the actual cautery.

Euphthalmine [5] is the hydrochloric acid salt of the mandelic acid derivative of n-methyl-vinyldiacetonalkamine. The formula is Cl_7, H_{25}, NO_3, HCl. It is a white crystalline powder readily soluble in water. It bears the same relation to Eucaine "B" that homatropine does to tropacocaine. It may be employed in two, five and ten per cent. solution. The instillation of a solution causes but slight burning sensations. As a mydriatic a five or ten per cent. solution is about equal in effect to one per cent. homatropine, but it affects the accommodation less and both disappear much more quickly. It is more powerful, but slower than cocaine and does not similarly affect the corneal epithelium. A two-per-cent. solution will give moderate mydriasis in half an hour without disturbing the accommodation which will disappear entirely in two or three hours. Thus far no unpleasant constitutional effects have been noticed.

SUBCONJUNCTIVAL INJECTIONS.

Donders [6] was the first to call attention to the value of subconjunctival injections and others have used them successfully. Strong solutions should be avoided. The substances most used are cyanide of mercury, salicylic acid, iodine trichloride, sodium salicylate and chloride of sodium. The greatest influence seems to be exerted on infectious processes in the eye or cornea. The chloride and cyanide of mercury have a marked antiseptic and resolvent power as shown by their prompt action in macular choroiditis. Pflueger uses a 1–2,000 solution of trichloride of iodine in acute processes and a two-per-cent. solution of the iodide or chloride of sodium in chronic cases. He, however, makes a simultaneous paracentesis by which he claims that the action of the injection is increased. In serous iritis he advises caution, but he has seen benefit from the use of the iodine-sodium compound in acute and chronic choroiditis with turbidity of the vitreous; he considers sublimate injections only indicated in sympathetic iridocyclitis. Darier's formula is mercury cyanide 0.1, sodium chloride 10.0, water 500.0, of which one-fourth to one syringeful is injected at a distance from the cornea.

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[2] Royal Ophthalmic Hospital Reports, December, 1897.

[3] Klin. Mon. f. Augenbl., January, 1898.

[4] Wiener klinische Rundschau, February 6, 1898.

[5] Treutler: Klin. Monatsbl. f. Augenheilk., September, 1897.

Archives of Ophthalmology, xxvii, p. 106.

AMBLYOPIA FOLLOWING AN EXTENSIVE BURN TREATED BY IODOFORM.

Terson[7] of Paris, reports a partial atrophy of the optic nerves following an extensive burn of the thigh, abdomen and arms of a women forty-eight years old, which after the first fortnight was treated with iodoform gauze, although previous to that time moist dressings of boric acid had been used. About three weeks after the change in treatment, the patient, who up to this time had shown no head symptoms except headache nor any signs of iodoform poisoning, noticed a rapid falling off in the vision which has remained unchanged for four years. She could get about with some difficulty, but could not read very fine print. The treatment had been injections of strychnia, mercury, artificial serum, iodide of potash, milk cure and electricity, but without avail. The disks were pale, especially in the temporal region, but there were no other changes noticed in the fundus. The macular bundles were evidently involved. $Vod = \frac{1}{8}$, $Vos = \frac{1}{6}$. The fields were not contracted peripherally, there was a central scotoma, not absolute, as the colors could be made out although they had a faded appearance. The condition seemed to have been caused by a toxic neuritis similar to tobacco. Mooren in 1858 described eye symptoms following an extensive burn, as including retinal hemorrhages, neuritis, retinitis, and chorio-retinitis without hemorrhage or albumin. Horner has recorded similar occurrences and Wagenmann mentions an hemorrhagic retinitis following a fall into boiling sugar. After a time the blood absorbed, but the disks became and remained white. This case had been treated with iodoform. Hirschberg had a patient, a girl of sixteen, who developed a central scotoma after treatment of hip-joint disease with iodoform and Valude in 1893 reported a case of white atrophy following a burn and iodoform treatment. Terson believes that the appearances in the lighter cases indicate merely functional changes in the macular bundle, while in the severer cases actual atrophy of the macular fibres may take place. It is known that pure iodoform intoxication acts largely upon the nerve centres and may produce a delirium resembling meningitis. The optic nerve is histologically and embryologically a part of the cerebral tissue. Simple congestion could not produce hemorrhages or neuro-retinitis. The blood of a person injured by burning is in a toxic condition by reason of diminished area of excretion from the skin and the kidneys. Although the changes in the eye are often of the nature of a true inflammation still some of the changes are very suggestive of the atrophy arising from abuse of alcohol, tobacco or some other toxic substance.

AMBLYOPIA AND AMAUROSIS IN PREGNANCY, LABOR AND CHILDBED.

Silex[8] has never seen pure amblyopia caused by pregnancy. The amaurosis of pregnancy is most commonly due to uremia following acute nephritis or diseases of pregnancy due to kidney trouble and is a toxic symptom. Albumin alone is seldom found. Amaurosis of an hysterical, epileptiform and apoplectic nature is likewise rare. Pupillary reaction is usually present. The arteries were not narrowed, which was contrary to the angio-spastic theory of eclampsia. The prognosis of pupillary paralysis is favorable. If the visual acuity does not return soon to the normal after an uremic attack with amaurosis there is apt to be a complicating retinitis which may return during a later pregnancy. The treatment is that of eclampsia and retinitis.

METASTATIC CARCINOMA OF THE EYEBALL.

Devereux Marshall,[9] Curator of the Museum of the Royal Ophthalmic Hospital, has recently examined two cases of carcinoma of the eyeball due to metastasis and has collected from other sources twenty-two other cases, and submits the following as resulting from his analysis: Eighteen out of twenty-three were females and most of the cases occurred in middle-aged persons, the extreme age limits being twenty-eight and fifty-seven. The tension was normal in eleven, increased in seven, diminished in four and not recorded in eight. In this respect there is a difference between cases of this and sarcoma of the choroid in which the tension is usually increased. The author refers to a recent publication in which is mentioned the fact that the tension in intraocular tumors without involvement of the ciliary body is increased in 67 per cent. and normal in 30 per cent. of the cases. This is due to the nature of the growth, which is flat and thin and does not push the ciliary body forward. In a very large proportion of the cases, seventeen, the primary growth was located in the breast. The duration of life after the appearance of the first signs of the growth in the eye varied between one month and two years, but in most cases it did not exceed a few months. It has been established that metastasis in the eye occurs through the agency of the vascular system which consequently is much slower than elsewhere by the more useful course of the lymphatic channels. This would lead one to look for a general dissemination of the disease through the internal organs of the body before anything became especially noticeable as regards the eye. It is therefore hopeless to imagine the internal organs unaffected if the eye has become involved, so therefore the treatment becomes only palliative, with enucleation to fall back upon in case of pain that cannot be relieved in any other way.

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[7] Archives d'Ophthalmologie, October, 1897.

[8] Monatssch. f. Geburtshilfe u. Gynekologie, p. 373, 1897.

[9] The Royal London Ophthalmic Hospital Reports, December, 1897.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE FRONTAL SINUS.

Fehleisen [10] insists on radical measures in operating upon the frontal sinus and describes a technique which in the main agrees with Nebinger and Kuhnt. As regards the point of chiselling, most operators recommend a point corresponding to the inner end of the eyebrow which is at the intersection of two lines, one of which connects the two incisuræ supra-orbitales, the other being drawn perpendicular to the first from the crista lacrymalis anterior. The point lies at the margo supra-orbitalis perpendicularly over the ligamentum palpebræ. Nebinger advises to begin chiselling at the os nasæ. The frontal bone consists of an external and an internal table with spongy bone between and the anterior sinus wall consists solely of external table, so if one chisels carefully the cranial cavity cannot be entered as the spongy bone will give sufficient warning. The mucous membrane lining the sinus wall will appear as a dark red or dirty yellow or black cyst if it has not sloughed. Pulsation of the sinus does not denote absence of the posterior wall. After removing sufficiently the anterior and possibly a portion of the lower wall the edges are so bevelled as to admit good coaptation of the skin, avoiding a pouch formation. The mucous membrane, even that of the upper part of the ductus naso lacrymalis, is thoroughly removed. If this is closed it is harmful to open it, for if the cavity is obliterated as described the ductus naso frontalis not only becomes superfluous, but its artificial opening may do harm by allowing inflammatory products from the nose to come in contact with the wound. The after-treatment is to be in accordance with modern surgical methods.

GLANDERS.[11]

According to the author this is the first description of glanders primarily affecting the lachrymal passages and the conjunctiva and strictly limited to them. The patient, a boy aged twelve years, had a lachrymal fistula of the right side which the father ascribed to a blow received twelve days before. Up to that time he had never had any trouble with either his eyes or tear passages. The fistula was extensive with thickened edges, everted and spread over with fine granulations and grayish-yellow pus. No history of syphilis or tuberculosis, and with the exception of measles and scarlatina he had always enjoyed excellent health until the appearance of the fistula. At present, although well grown, he is pale and thin and he possesses old cicatrices on the neck. The submaxillary gland is as large as a pigeon's egg and was noticed before the appearance of the fistula. The right pre-auricular is also enlarged but neither are painful. Thoracic organs are normal. Aside from the fistula the eyeball and lids are normal and the canal is permeable to the passage of a probe. Although he improved somewhat under treatment, in three months the condition was found to have extended to the lower cul-de-sac which was filled with a grayish-yellow mass resembling the fistula. Excision and cauterization were then done. The bacteriological work which had been carried on in the meantime suggested glanders although the most careful physical examination failed to disclose signs of chronic glanders or farcy. The submaxillary gland healed readily after being incised and the pre-auricular did not change in appearances. The lid condition improved for a time then it invaded the upper lid and conjunctiva of the bulb. A guinea-pig inoculated with pus from the fistula died in thirteen days, having miliary granulations in the viscera and a degenerating focus at the point of inoculation. A guinea-pig inoculated with pulp from the spleen of the first, died in twelve days, with an abscess at the point of inoculation, a hypertrophy of the inguinal glands, swelling of the testicles and miliary granulations of the internal organs. Examination of the spleen showed tubercle bacilli to be absent. There was present a slender bacillus not stained by Gram and forming on potato characteristic colonies. Notwithstanding careful inquiry it was impossible to determine the source of the infection.

(To be continued.)

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Reports of Societies.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

FIFTEENTH ANNUAL MEETING HELD AT MAPLEWOOD IN THE WHITE MOUNTAINS, NEW HAMPSHIRE, AUGUST 31 AND SEPTEMBER 1, 1898.

SKETCHES of the lives of the late Drs. W. D. Bratton, U. S. Marine-Hospital Service, and J. Carey Thomas were given by **DR. OTIS**.

A sketch of the life of Dr. Harrison Allen was given by **DR. R. G. CURTIN**.

A sketch of the life of Dr. William Pepper was given by **DR. J. H. MUSSER**.

The President, **DR. E. O. OTIS**, of Boston, gave the opening address on

AUENBRUGGER AND LÆNNEC, THE DISCOVERERS OF AUSCULTATION AND PERCUSSION.[1]

DR. F. I. KNIGHT, of Boston, read a paper on

COMMON ERRORS OF GENERAL PRACTIONERS IN DEALING WITH CASES OF PULMONARY TUBERCULOSIS.[2]

DR. VINCENT Y. BOWDITCH, of Boston, read a paper entitled

THE RESULT OF RECENT EXPERIENCE WITH PHTHISICAL PATIENTS.[3]

DR. DIDAMA, of Syracuse, in discussing the papers of Drs. Knight and Bowditch, deprecated the sending away of advanced cases of tuberculosis and urged early diagnosis and the necessity of very early informing the patient of his danger and his needs. Dr. Didama was not averse to the use of syrups in the treatment of tuberculosis.

DR. R. G. CURTIN, of Philadelphia, favored the simplest medication.

DR. MUSSER, of Philadelphia, said that on account of the general knowledge of the value of climate, patients and families take lives into their own hands and in spite of advice go to distant resorts. "No doubt, however, a great many of us have erred from time to time, because it seems to me there is nothing more difficult in medicine than to decide in certain classes of cases what cases shall be sent away and what cases shall be retained. I have no doubt that Dr. Hart can give us incidents of a number of cases dropped into Colorado, sent there by Eastern physicians. Nevertheless there are some cases which we must send away for reasons that present all the contra-indications at the time for such steps. I recall one instance, the case of a young man who was taken ill with localized tuberculosis with apparent general infection; certainly there was excessive consolidation at the apex, and the man had high fever, rapid emaciation, sweats, etc. I advised, notwithstanding his weakness, that he attempt to get to the Adirondacks. He took my advice although it was given with great misgivings. He put himself under the care of Dr. Trudeau, who told his mother he did not believe he would live ten days or two weeks in that region. Nevertheless a residence of nine months under the care of Dr. Trudeau resulted in a complete cure, or at least, an arrest of all manifestations of the disease. It occurred three years ago and he is perfectly well and strong and is attending to his duties in Philadelphia at the present time. This was a case which to all intents and purposes should never have been thought of being sent away, and yet because of the conditions he would have been surrounded with at the time, I thought it advisable to take the step and fortunately for us all the result justified the means."

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[10] Medical Record, August 7, 1897.

[11] Gourlein: Revue médicale de la Suisse romande, xvii, December, 1897.

[1] See Nos. 12, 13, pages 281 and 305 of the Journal.

[2] See page 485 of the Journal.

[3] See page 486 of the Journal.

Dr. Hart, of Colorado Springs, in discussing papers of Drs. Knight and Bowditch, said: I do not know that I can add anything to what has been said. Drs. Knight and Bowditch have said just exactly what I have wanted to hear and I feel well repaid for coming to the meeting. We have a great many patients sent to Colorado who undoubtedly would be better if left at home. They arrive there after a long journey, with high temperature, sweating and so on, with every indication of advanced trouble and in a number of instances I have found cavities, and it is a very difficult matter for the physician at the health resort to manage those cases. They do not understand why they should be sent back home because of this hopeless condition, which it invariably is.

There is another class of cases which are sent out and advised to rough it, ride horseback and have a good time generally and keep away from doctors. It is not long before they get into the doctors' hands, and they have taken a course they should not take and we have a great deal of trouble in the management of these cases. I think with Dr. Knight that the patient should be advised before sending away, but I do not think the advice should be to keep himself under the care of his family physician at home after going away.

Dr. T. D. Coleman, of Augusta, Ga., in discussing the papers of Drs. Knight and Bowditch, said: I have had in my own practice during the last year only two patients illustrating points brought out in both of these papers. One of the patients came to me from a neighboring city, who was convalescing from what was said to be an attack of typhoid fever. If the physical signs in the chest had not been sufficient to diagnose the case that of tuberculosis the examination of the sputum would have been so, and there was little excuse for the diagnosis not being made. The patient was so far advanced that in the course of about six weeks he died. The early appreciation of these troubles I think is the key to the cure of them, and I feel that where a proper physical examination is made many of the errors will be avoided. It seems to me that the most valuable early training that I had was in making a thorough physical examination of cases that came to me. I have made this a rule of my life and in that way I have avoided many errors.

Dr. Beverley Robinson, of New York, said: I share, of course, in the judgments that have been pronounced by Drs. Knight and Bowditch. I consider Dr. Bowditch's paper a valuable one indeed, because I have many times said what he has so ably stated here to-day. I think too often a mistake has been made and deficient attention paid by physicians and the public as to how much we should consider the feelings of the patients and the distress caused to the families, and after all it seems to me an advisable thing for the practitioner to give consolation and happiness rather than pursue too far independent measures based perhaps upon the most accurate scientific deductions of the day.

Now with regard to the physical examination, I am free to admit that, although I have the greatest respect for all that has been told us to-day, the best percussion and auscultation permit us to find decided errors and mistakes made and some of us notice when we follow the post-mortem room that the different examinations made prior to death are not always upheld by the post-mortems.

Once more I will say I have seen people where they have been sent away, homes broken up, and they did not turn out to be phthisical patients. Therefore, I have not been willing immediately to endorse absolutely what Dr. Knight says.

Now another point which is of some little value, in regard to giving cod-liver oil in large doses. You have the patients with tongues coated, digestion disturbed, and it is very hard to give medicines or food under these circumstances. But we cannot throw up the sponge with regard to medicines or food. I must make a mental appeal and at least hope and trust that we may have something that will yet do for these poor people. I would refer in this particular line of thought to the fact that I have seen a certain number of hospital patients (I won't say private patients, for various reasons I have not been willing to pursue that method with those); I have fed a certain number of phthisical patients in hospitals with the stomach pump when I felt that they could not take food or medicine otherwise, and I have tried to hope (I believe I am stating it just as I feel it to be) I have produced a certain amount of temporary beneficial effect.

With regard to the question of climate I am particularly opposed (begging the pardon of the gentleman from Colorado) to sending a patient far away if I can find conditions near home which will probably suit those patients about as well. I have a very doubtful mind as to the merits, in regard to the curative influence, of any particular climate as opposed to any other particular climate. I think you have to estimate all the conditions involved in the selection of a particular place, and I agree with Dr. Knight that it is important to have the good physician there. I always want to know a good deal about the drainage of the house, and the food, which after all make a sum quite as important as the question of climate. And I do not believe it is a good thing to send people so far away from home. I am speaking of the secondary stages.

I think that paper of Dr. Bowditch is a very valuable one and I cannot express myself too strongly as to how far its influence may reach.

Dr. Knight, in closing the discussion of his paper, said that he would like to say a word in regard to the use of syrups. In the treatment of these patients the use of syrups and sugar should be avoided, for they get enough sugar in their ordinary diet and an excess of it seriously deranges digestion. He was not now advocating any special climate, but, on the other hand, was simply trying to make the physician appreciate the possibility of cure if he does all that is possible for his patient by an early diagnosis. This is usually possible with the aid of sputum examination and, in rare cases, the tuberculin test.

Dr. Theobald Smith, of Boston, Mass., presented a paper entitled

VARIATIONS IN PATHOGENIC ACTIVITY AMONG TUBERCLE BACILLI.

In the production of states of disease due to infection two main modifying factors should be recognized, the pathogenic activity or virulence of the infecting organism and the relative resistance of the infected individual.

The formation of races of bacteria endowed with different degrees or qualities of pathogenic power may be caused by prolonged parasitism upon different species, as illustrated by the tubercle bacilli of birds, cattle and man; to invasion of different types of individuals of the same race; and to continued vegetation in different organs of the body. Parasitism upon different species must obviously produce races of the widest differences. Such races are now recognizable among tubercle bacilli. Differences in bacilli current among individuals of the same species may be so slight as to be not recognizable with our crude tests. Virulence is thus a function of resistance and the reverse is equally true. Both factors may slowly change with time, but for the short span of life of the individual they are practically fixed.

Variations in the pathogenic power as well as in minor physiological characters of bacteria have been encountered in nearly all important species carefully studied. Variations in virulence may also be artificially produced by passing bacteria through a long series of animals; variations in resistance, by processes of vaccination or immunization. The inoculation disease in such treated animals is usually modified in character.

Tubercle bacilli are no exception to the rule. Gradual changes may be noticed during artificial cultivation which express themselves by reduced virulence. Variations in virulence occurring spontaneously have been noted by Koch, Arloing and the writer. The latter has also found uniform pronounced differences in the pathogenic power of bovine and human bacilli sufficient to entitle each to the position of a race. The practical significance of minor variations occurring among human tubercle bacilli cannot at present be satisfactorily estimated, but needs further study.

Dr. E. Fletcher Ingals, of Chicago, presented a paper on the value of

SYSTEMATIC PHYSICAL TRAINING IN THE PREVENTION AND CURE OF PULMONARY TUBERCULOSIS.

Dr. Ingals referred to the well-known fact that the long, narrow, flat-chested individual is the one who is most liable to the development of tuberculosis and in patients in whom this form of chest is present the chances for recovery are reduced to a minimum. Thus systematic physical training would be likely to prevent the disease and possibly cure it in the early stage by preventing or correcting collapse of the air cells. It is probable that a pre-tubercular, or early tubercular, anemia diminishes the nutrition of the parts and consequently their resisting power.

Just as tuberculosis attacking the skin and bones is so limited by the natural processes that at its worst it extends often over many years, so similar processes should be encouraged in the lungs. The first measure to be adopted is deep breathing and the beneficial effects of high altitudes are due to the increased distention of the air vessels in the efforts to more completely fill the lungs. Patients should expand the lungs thoroughly several times a day and the physician should inspect the mode of breathing. The patient should be directed to draw in the abdominal walls and take a long, deep breath, while the shoulders are carried gradually backward and the ribs and sternum elevated as far as possible; he should hold this breath for a few seconds and then blow it out slowly and forcibly through a small opening between the lips.

Dr. Ingals stated that systematic physical training can cause a considerable change in the form of the long, flat, narrow chest, and that such training is beneficial after the disease has actually developed. The records of Amherst College for the last twenty years show that in 2,106 students who had compulsory physical training only half an hour four times a week there was a gain of 1.21 inches in the chest measurement during the college course. At Bowdoin College the results surpassed this. The examination of statistics from various colleges has shown that non-professional college athletes, in nearly all cases, outlive their expectancy as estimated by the most careful life insurance companies. Although a considerable number of these amateurs ultimately die of pulmonary tuberculosis the percentage does not appear to be as large as among men who have had no physical training.

Dr. John E. Morgan, in a book entitled "University Oars," published in 1873, concludes that athletics tend to prevent consumption, but that people of delicate constitution should avoid overtraining as overexertion may possibly predispose to consumption.

Dr. Ingals favors the use of Indian clubs, the rapid use of small dumb-bells, the horizontal bar, the trapeze and boxing, as well as the ordinary out-of-door exercises. The most important is the frequent practice of deep inspiration whereby the lungs are thoroughly filled and forcible expiration which inflates the air cells at the apices of the lungs. In order to insure the patient's carrying out the directions Dr. Ingals orders a simple medicated inhaler to be carried in the pocket and used at stated intervals throughout the day, for many persons will take some medicine regularly who would soon discontinue systematic inhalations of non-medicated air.

Dr. Ingals uses a simple hard-rubber tube about four inches long and half an inch in diameter filled throughout its middle two-fourths with corrugated blotting paper and having corks in each end so that it may be closed to carry in the pocket. The medicament is dropped on the blotting paper and the patient is directed to take long deep inhalations through the inhaler every two hours during the day. After the instrument is freshly charged the patient inhales but twice; two hours later four times; two hours afterward six and at the end of the next two hours eight. The instrument is then to be recharged.

The remedies employed by Dr. Ingals consist mainly of thymol, menthol, tincture of iodine and formalin in solution in alcohol. Chloroform may be added to any of these to relieve cough.

Thymol is used in the strength of one to two grains to the ounce; menthol, thirty to sixty grains to the ounce; formalin, half a drachm to one drachm to the ounce. They are of signal value in laryngitis and tracheitis, but neither these nor other inhalants have any direct effect on tubercle bacilli. They mitigate, however, the catarrhal inflammation that attends the tubercular process.

Dr. Irwin H. Hance, of Lakewood, presented a short paper on

THE RESULT OF A SINGLE TEST OF THE VIRULENCY OF SPUTUM KEPT MANY MONTHS.

In February, 1896, he inoculated six guinea-pigs with sputum which was secured from an old chronic case of pulmonary tuberculosis with large cavities. Eight weeks later all the animals being alive were killed; general tuberculosis of the glands and of the abdominal and thoracic organs were found in each pig.

Sputum which had been kept seventeen months in stoppered bottles in a box in a closet was thoroughly mixed in its own sediment and one and five-tenths cubic centimetres was inoculated into the peritoneum of one and under the skin of a second guinea-pig. The former died in forty-eight hours of some septic poison; the latter lived thirty days, when he was killed. At the autopsy there was no glandular enlargement and no evidence of tuberculosis. On the same day two cubic centimetres of the sediment was mixed with two cubic centimetres of sterile water and centrifuged for ten minutes, thinking thereby to get the bodies of the tubercle bacilli without the toxin apparently present in the fluid. To this deposit in the tube, after decanting the supernatant fluid, two cubic centimetres of sterile water was again added and equal parts of this were injected into the groins of two guinea-pigs. Twenty-eight days later both pigs were killed and the autopsy gave negative results. Neither of the pigs after the second experiment was at all sick after the inoculation. The microscopic examination of the centrifuged sediment did not show any clearly outlined bodies of the tubercle bacilli, but fragmentary masses which retained the coloring matter were pronounced to be tubercle bacilli by two other examiners besides the writer.

As the bacilli in this case were no longer viable Dr. Hance asks: Does sputum which remains in a liquid state for a long time develop toxins which are inimical to the life of the tubercle bacilli? Would the result have been different had the sputum been more virulent in its character, and taken from a case of acute active tuberculosis? If sputum dries more rapidly does it retain its virulency longer?

Dr. James M. Anders, of Philadelphia, presented a paper on

SANATORIA AND SPECIAL HOSPITALS FOR THE POOR CONSUMPTIVE AND PERSONS WITH SLIGHT MEANS.

After referring to the superiority of institution treatment of pulmonary tuberculosis and its evolution the author referred to the provision for consumptives in English hospitals. Statistics and a chart showing the deaths from pulmonary tuberculosis for the last twenty-five years in Philadelphia were presented. The deaths from consumption in Philadelphia have gradually fallen from 3.42 per thousand of population in 1870 to 1.96 per thousand in 1897.

With reference to hospitals for consumptives, Dr. Anders firmly believes that when located in densely populated centres they do not offer advantages in any way comparable to those of modern sanatoria situated in a suburban locality, a purer atmosphere, etc. The object of the paper was to show the paramount value of sanatoria and the urgent necessity for the construction of an adequate number of these institutions for the treatment of consumption in the earlier stages in persons having small means, and the needy poor; although the best means of caring for the advanced cases will be found to be special hospitals.

Various sanatoria were described and the accommodations for consumptives in New York and Philadelphia were enumerated. Dr. Anders believes in the free dissemination of information as to the nature and management of the disease and believes that it should be reported, with other diseases, to health authorities. Pulmonary tuberculosis is far more common as well as more inauspicious among the lower than among the higher classes. The almost absolute lack of proper facilities for treatment maintains the great death-rate. Special hospitals are far superior to separate wards in general hospitals for the treatment of this class of patients.

Dr. Anders deprecates the admission of tuberculous patients into the ordinary wards of general hospitals on account of the danger of transmission. He showed that sanatoria lessen the mortality-rate of phthisis in communities in which they are situated.

Dr. H. P. Loomis, of New York, presented a paper on

THE PRE-TUBERCULAR STAGE OF PHTHISIS; OR THE CONDITION WHICH ANTEDATES TUBERCULAR DEVELOPMENT AND SOME AIDS TO ITS DIAGNOSIS.

Dr. Loomis likened the pre-tubercular stage of phthisis to the stage of transient albuminuria found in a case developing nephritis. While a majority of tuberculous patients apparently start with local manifestations, a large number have exhibited for a longer or shorter time well-marked evidences of an antecedent morbid condition of the general system. Dr. Loomis first considered the subject of the relation of the weight of an individual expressed in pounds to his height expressed in feet. This ratio constitutes the "corpulence" a term introduced by French writers, and for men the standard is 26; while for women it is 23. This factor should, however, be taken in connection with the "vital capacity" to be of value. The latter is obtained by taking the thoracic perimeter (the mean of expiration and inspiration) and dividing by the height. For each inch of height of man there should be three inches of vital capacity as measured by the spirometer; and in the case of women 2.6. The thoracic perimeter should never be less than half the height.

The third element in making a diagnosis is the constitutional condition. Dr. Loomis believes that chloro-anemia is often one of the most pronounced symptoms of the pre-tubercular stage of phthisis. In tubercular chloro-anemia the hemoglobin never falls so low as in true chlorosis. Digestive troubles precede the deposition of tubercles in many cases. Indigestion may be a forerunner of phthisis.

The character of the pulse is a fourth element. It is found that in the very beginning of phthisis a change in position of the patient has very little influence on its beat. Dr. Loomis placed the ordinary variation in healthy men, on change of position, at fifteen beats per minute. The relative feebleness of arterial pressure as noted by Wells may be estimated by suitable instruments; it probably puts the organism in a state of microbic receptivity.

Dr. Beverley Robinson, of New York, read a paper entitled

CLINICAL NOTES ON ASTHMA AND ITS TREATMENT.

The author stated that the cases of nervous asthma so called, or asthma merely functional and without fixed causation, had been infrequently met with in his experience. He referred to the fact that in the majority of cases there is probably a certain sensitiveness of the central or peripheral nervous system which accounts in a measure for the recurrence of attacks, but that despite the existing nervous irritability, the asthmatic attack would rarely occur were there not some other discoverable but as yet unknown cause. Malarial toxemia is frequently present but ignored. Malaria may be present causing slight enlargement of the spleen and liver, moderate secondary anemia, engorgement of the nasal, laryngeal or tracheal mucous membrane, or other parts of the upper or lower air tract, and yet be lost sight of, or its presence questioned or doubted. Microscopic examination of the blood in these obscure cases does not always give a satisfactory clue. If there is reason to suspect malaria in a case of asthma Dr. Robinson gives Fowler's solution until the physiological effect is produced. If constipated and the liver is inactive he advises Warburg's extract in doses of five grains three or four times daily. For the anemia, a pill containing one grain of reduced iron, two grains of muriate of quinine and one-sixtieth or one-thirtieth of a grain of arsenious acid. In an attack, belladonna, chloral or nitro-glycerin, and as a last resort chloroform inhalations or a hypodermic of morphine and atropine. Dr. Robinson believes in gout as an underlying cause in many cases. He related an interesting case in point, in which the cause was renal inadequacy due to gout, and in which the patient was restored to health by the use of three or four milligrammes daily of colchicine. Reflex causes are also to be removed.

For gastric catarrh, lavage and the use of Vichy or Vals water and an occasional mercurial purge are advised. Bronchitic and emphysematous types were referred to. Small doses of ipecac, tartar emetic, grindelia robusta, chloride of ammonium and iodide of potassium were used where the secretion is scant; when profuse, belladonna or atropine may be added to these, or pills of camphor and quinine may be given. For cardiac distention and accompanying symptoms nitro-glycerin and nitrites may be used, or soluble salts of caffein, such as the salicylate, or occasional bleeding will give relief. Nitrite of amyl was condemned as dangerous. The time to give morphine injection was indicated and should be avoided if the pupils are contracted. Climatic treatment was also indicated.

Dr. F. I. Knight, in opening the discussion of Dr. Beverley Robinson's paper, said: I think Dr. Robinson has done a good service now and heretofore in calling attention to the constitutional element in cases of asthma. The gouty or the malarial condition which is often the excitant of the attack is undoubtedly often neglected. It seems to me that asthma is a very complex thing. Asthma is due, first, to an underlying neurosis; and second, to some lesion in the bronchial tract, I think almost invariably, if not always; and thirdly, to some excitant. In treating the paroxysm if we can relieve or modify any one of those factors we can stop the paroxysm. I had a patient who could always relieve an attack of asthma by gambling for high stakes. It is impossible in certain cases to change or alter the organic lesion; but we can remove the excitant or remove the patient from the excitant. Englishmen who are subject to asthma will relieve it at once by going from the country down to the city. I know a patient who always has asthma in one hotel in Boston and never has it in another, and the hotels are within a block of each other, and no one has been able to tell the cause. So we have these various factors on which we may work in the interval. The gouty or malarial constitutional condition which I consider the excitant may be so modified that the patients' attacks may be relieved; so it is with those cases where an organic lesion is in the upper part of the respiratory tract and acts by reflex on the air tubes below. Often when polypi are removed there is only temporary relief, and then some other irritants come in by reflex or otherwise. I might mention here the theory of Berkart, that the lesion of 90 per cent. is in the lungs, and comes from measles or whooping-cough, or other inflammatory affections in childhood. Dr. Hyde Salter puts the proportion at 80 per cent. I think that a very much exaggerated statement, but since reading it I have traced a large number of cases back to inflammatory conditions in childhood.

In regard to the bronchial cases and their relief, I should perhaps urge more strongly than Dr. Robinson the value of the iodide of potassium. No one remedy has served me so well as this.

In the emphysematous cases there is one thing which above all should be insisted upon, and that is rest. The patient who has been miserable with repeated attacks of asthma at night for weeks and months may be perhaps relieved for considerable time by restricting his movements and admininistering strychnia freely.

It is an interesting subject but certainly a very perplexing one and worthy of a great deal more study than is usually given it; and if men will take the pains to investigate individual cases and not consider them simply cases of asthma and treat the name, but will try to get at the conditions which underlie them, they will have much better results in their attempts at treatment.

Dr. Johnson, of Chicago, in discussing Dr. Robinson's paper, said: I wish to add my testimony to what Dr. Robinson has said about the condition of constitutional infection, and the necessity of determining primary cause. But in almost every case of asthma, whatever the primary cause may be, we have to deal with bronchitis and spasm, and in order to obtain prompt satisfactory results, no matter whether the primary poison is eliminated or not, we must direct the treatment temporarily to the immediate disturbance. I concur most fully with what Dr. Knight has said, that the most important remedy is iodide of potash. It should be given in moderate doses continued for weeks or months if need be. The relief of the paroxysms is the important thing in the patient's extremity. In mild attacks this may be accomplished by the administration of belladonna and chloroform internally. Chloroform given internally acts more slowly than by inhalation, but the action is more prolonged and it is safer. In severe paroxysms the nitrites are often very useful. I prefer nitro-glycerin. Its action is very prompt, almost as prompt as nitrite of amyl. The vasomotor effect of one-hundredth of a grain can often be felt within two minutes. The dose may be repeated every ten to sixty minutes as required. Nitrite of amyl is much more dangerous in the hands of the patient than nitro-glycerin. Morphine is safer and more useful than the nitrites in asthma with greatly embarassed right ventricle.

Dr. J. B. Walker, of Philadelphia, in discussing Dr. Robinson's paper, said: I would like to refer to one climatic factor that is within every one's reach everywhere. This is sunlight. A patient living on one side of a street may be exempt from asthma, while on the other he may be affected. This may be due to the fact that on one side he lives in a shady room, and on the other side in a sunny one. This is a factor of no small moment in not only the asthmatic, but in all subacute and chronic bronchial disorders.

Dr. W. D. Robinson, of Philadelphia, advised the use of iodide of potassium in junket.

The President, Dr. Otis, of Boston, instanced a case in which the removal of the patient from one room to another, and a change of pillows made of feathers for those of other material gave relief.

Dr. Glentworth R. Butler, of Brooklyn, read

A NOTE ON THE POSITION OF THE LOWER BORDER OF THE HEART AND THE TOPOGRAPHICAL ANATOMY OF THE ORGAN.

Dr. Butler said that although the lower border of the heart is usually stated to lie above the junction of the sternum and xiphoid appendix on a level with the sixth chondro-sternal articulation, yet in the living subject it lies at a lower point in 70 per cent. of well-formed normal chests. The point is at least one-half an inch below the sterno-xiphoid junction. Sibson's investigations were referred to. There is a post-mortem shrinking of the heart so as to raise its lower border. The arguments of Sibson and the revelations of the x-ray combine to place the lower border of the heart at about the junction of the upper and middle thirds of the xiphoid appendix.

Dr. Butler describes the heart as an irregular, four-sided pyramid. The base of this pyramid rests on the diaphragm; the apex is truncated, thus offering a place for the upspringing great vessels. It therefore possesses five surfaces, anterior posterior, right, left and inferior (the base), with well-defined borders separating them. The anterior surface is triangular in shape, slightly curved and lies parallel with the posterior surface of the sternum. Dr. Butler exhibited a diagram to show these relations. In closing he referred to the models of His and the description of Keiller; also the demonstration of Ebstein's triangle, the disappearance of which is good proof of pericardial effusion.

Dr. Butler said it was a moot question as to whether any method of percussion will enable the full extent of the right border of the heart to be mapped out, as in the normal heart the cardiac dulness rarely extends to the right of the sternum, whereas we know from incontrovertible anatomical data that the right auricle passes one inch to the right of the sternal edge. There is a greater thickness of lung between the right border of the heart and the chest wall than on the left side which may account for the greater uncertainty in delineating the dexter border. Auscultatory percussion is far superior to ordinary percussion. Sansom's pleximetric method is very reliable.

Dr. Didama asked if the aspirating needle would not be liable to puncture the heart in operating for pericardial effusion if the position of the lower border of the heart were not fully recognized.

Dr. Coleman asked if the position of the heart changes when the position of the body changes.

Dr. Butler said that he was obliged to make a conjecture as to the position of the diaphragm during quiet respiration, placing it at an intermediate distance between the two lines marking the position at full inspiration and expiration, but as the upper and lower limits of the excursion of the lower border of the heart both lay below the lower end of the sternum any possible error in this respect did not affect the statement as to the position of the lower cardiac border.

(To be continued.)

Recent Literature.

Die Chirurgischen Krankheiten und die Verletzungen des Pankreas mit 18 *Abbildungen.* Dr. W. Korte, Deutsche Chirurgie Lieferung 45. Stuttgart: Verlag von Ferdinand Enke. 1898.

This is an exhaustive well-written monograph of 234 pages, and is a valuable contribution to the present limited knowledge of the affections of the pancreas, an organ whose anatomical position makes the acquisition of information relating to its physiological processes or clinical changes difficult to obtain. The first pages are devoted to a very extensive bibliography of the subjects treated in the different chapters of the book. Next is the history of the slow accumulation of what is to-day known of the anatomy, physiology, pathology and surgery of this obscure gland. The anatomy is interesting, especially that of the ducts of Wirsung and Lautonin. Chapter IV discusses the general symptomatology and etiology of pancreatic diseases. To it is appended a classified table of all the pancreatic diseases found at 3,018 autopsies. The remainder of the book deals with especial affections of the organ, namely, cysts and tumors (cancer, sarcoma, adenoma, lymphoma, tubercular and syphilitic), inflammation, hemorrhage, abscess, necrosis, disseminated fat necrosis, calculi, injuries (ruptures, contusion, wounds), malpositions and finally diabetes as connected with pancreatic lesions.

The book is quite a satisfactory one and especially interesting to any one desirous of obtaining specific information relating to the pancreas. It is valuable not alone for the full detailed descriptions of recognized pancreatic conditions; but also on account of the exhaustive bibliography which its author has collected. One feels after an inspection of the book that the field has been thoroughly covered, and that it fully represents what is to-day known about the pancreas.

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MODERN VIEWS ON CERTAIN SYMPTOMS AND CAUSES OF BRIGHT'S DISEASE.

The Carpenter Lecture of the New York Academy of Medicine, delivered October 20th, ult., by Dr. C. A. Herter, is noteworthy as containing an explanation, based on modern and recent researches, of certain symptoms of renal disease which have always perplexed pathologists, and as summing up etiological data.

After reviewing the various hypotheses relating to renal dropsy, Dr. Herter believes that the view which attributes this complication to alterations in the walls of the smallest blood-vessels is the most probable. Recent studies in the pathological histology of the kidney give support to the contention that renal dropsy is closely connected with vascular lesions. A very large proportion of cases of acute and subacute renal dropsy are associated with well-defined glomerular lesions in the kidney, alterations of the vascular tufts being prominent and preponderating. There is either proliferation of the endothelial cells of these tufts (the more common form) or proliferation of the capsular epithelium and accumulation of cells in the capsular spaces. These lesions are probably dependent on micro-organisms, or their toxins which reach the kidney by the blood stream. It is in conditions of infections (such as scarlet fever, malignant endocarditis, severe malaria) that glomerulitis is most often encountered, and the structures which are damaged are largely the small blood-vessels. Such structural alterations must also exist in the vessels of the skin. The theory, then, is that certain poisons in the blood produce both glomerular lesions and changes in the cutaneous vessels which permit the transudation of serous fluid, which in the one case as well as in the other is charged with albumin. That the albumin in the urine in Bright's disease comes, in part at least, from the glomeruli has been experimentally demonstrated. In such cases as are not accompanied with edema, we may suppose that the toxic agents which have damaged the renal tufts in the manner indicated have not yet had time so to damage the vessels of the skin as to permit transudation, or, at least, are not sufficiently concentrated to cause transudation.

This explanation is particularly applicable to acute and subacute renal dropsy. In chronic nephritis there is often an increase in the water of the blood, production of edema. There is, moreover, often high and the alteration, not merely of the vessel walls, but of the connective tissues about the vessels favors the venous and low arterial pressure due to failing heart. Dr. Herter's observations show that dropsy and the concomitant glomerular lesions are twice as frequent among patients with large kidneys (weighing above six ounces each) as among patients with contracted kidneys (weighing under four ounces each).

With regard to the presence of albumin in the urine, Herter, with recent authors, as Lecorché and Talamon, rejects the notion of "functional" albuminurias, and believes that glomerular or epithelial lesions are present in all instances of true albuminuria. He thinks that the view of the older generation of physicians that albuminous urine from the kidneys points to nephritis is nearer the truth, than that albuminuria is often physiological. Yet, while albuminuria means glomerulitis, the mistake of the older school is in the failure to recognize that patients frequently live in good health for ten to twenty years with slight nephritis. Dr. Herter believes it not to have been demonstrated that the degree of albuminuria is controllable by medication, nor does the character of the food — whether nitrogenous or non-nitrogenous — exert any appreciable influence on the quantity of albumin that escapes from the kidney. When the loss of albumin is large, an unusually rich nitrogenous diet is required to protect the organism from the loss of its nitrogen. Moreover, it is now known that the erect posture favors the escape of albumin, while the horizontal posture hinders it. The bearing of this fact on the treatment of chronic nephritis is obvious.

To ascertain the period of delay in the excretion of urea in pathological states of the kidney, Herter recommends the methylene-blue test. When this dye is injected into the muscle of a patient suffering from nephritis, the blue color appears quite promptly in the urine, but much longer time is generally taken for its disappearance than in persons with normal kidneys; instead of disappearing in thirty-six to forty-eight hours, the coloration often persists for a week, or even longer. In opposition to the conclusions of Bard and Bonnet, Herter has obtained no evidence that the kidneys in parenchymatous are more permeable than in interstitial nephritis, and the ability to excrete the blue is found to vary at different times. A distinct delay in excretion is evidence of the inability of the kidney to do its normal work on time, owing to structural alterations; and such a delay, when prolonged four days or more, is associated with an increase of the urea in the blood. The prompt disappearance of the dye (within thirty-six hours) may be taken as an indication that the kidneys are normally ridding the blood of urea and other waste constituents, even though the urine contains albumin and casts. One grain of the methylene-blue in ten minims of water is the amount which may be injected.

It is in the department of etiology that the greatest progress has been made during the past twenty years. And, as Herter remarks, now, instead of looking at nephritis as a primary disease of the kidneys, due to exposure to cold, or idiopathic in nature, we have come to see in the different anatomical types the evidence of different reactions on the part of the renal, vascular, epithelial and connective-tissue cells toward toxic substances or micro-organisms brought by the blood stream. A large percentage of renal diseases is due to the direct action of bacteria or their toxins. While the presence of bacteria in the urine often means only that the microbes of infection of some neighboring or distant organ (as of the intestine in enteritis, the heart in infectious endocarditis) are passing out of the system through the natural channel of excretion (and in such instances the bacteria may not materially harm the renal parenchymatous elements), in other cases, the passage of bacteria through the kidney is a symptom of injury to renal structures. Thus, a tubercle bacillus bacteriuria is no rare expression of renal tuberculosis which has arisen from a deposit in the kidney of tubercle bacilli from the blood stream. In rare instances, a typhoid bacillus bacteriuria is responsible for a suppurative pyelitis. Again, pyogenic streptococci and staphylococci have been found in the urine in various forms of acute nephritis in the course of erysipelas, malignant endocarditis, osteomyelitis, scarlet fever, etc., and these bacteria may be regarded as causative of the renal lesions. In other cases, it is probable that the glomerular and other lesions are due to toxins rather than to the bacteria themselves, thus the acute nephritis, which accompanies diphtheria, is probably due to the action of the soluble products of the Klebs-Löffler bacillus, rather than to the specific microbes. It is probable that there is no infectious agent which may not, by its own presence or that of its products, give rise to acute or subacute nephritis. Whether Bright's disease is ever due to exposure to cold, apart from microbes, is open to doubt. It is probable that lead, mercury and other chemical and mineral poisons are, in some instances, true causes, as has hitherto been taught.

Herter's figures go to show that the poison of alcohol is influential in the production of nephritis with large kidneys rather than nephritis with small kidneys. The pathogeny of the small contracted kidney is still very obscure. The experimental observations of Morse indicate that the toxins of the staphylococcus pyogenes are capable of initiating those proliferative changes in the interstitial connective tissue of the kidney which constitute so prominent a lesion of chronic diffuse nephritis, and it is probable that the toxic products of numerous pathogenic bacteria may induce such connective-tissue changes, while typhoid fever and malaria may be followed by chronic diffuse nephritis, and possibly also pneumonia, influenza and measles. At present scarlet fever is the disease which we must hold most often responsible for diffuse nephritis with contracted kidney.

Colon bacillus bacteriuria is often associated with some morbid process in the genito-urinary tract, such as nephritis, pyelitis, cystitis and the possibility of an ascending infection (gonococcus, tubercle bacillus, etc.) from the bladder or prostate gland is now well recognized.

As to the pathogeny of amyloid kidney, recent experimental studies make it clear that the filtrate of cultures of the golden staphylococcus is capable of inducing amyloid changes in the spleen, liver and kidney. The observations of Gracow, Maximoff and others with reference to the artificial production of amyloid degeneration in animals give us a satisfactory explanation of the influence of prolonged suppuration on the genesis of amyloid degeneration.

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WHAT BOSTON DID FOR THE SOLDIERS.

The exigencies of the war with Spain made unexpected demands upon the medical communities of the larger eastern seaboard cities, and brought home the horrors of war more closely than ordinarily happens in a distant campaign.

Although the dangers of military operations in a tropical country were well known, yet the full realization of the sufferings of the soldiers came at a time when the war was practically ended, and the community was insistent in its demands for the restoration of the sick soldiers to a northern climate. The original plans of the government had contemplated the establishment of hospital camps in the high country of eastern Cuba, but when this was proved to be absolutely impossible, the transportation to, and care of, thousands of sick soldiers on the northern and eastern coast of the United States became a sudden necessity.

That Camp Wikoff became eventually an excellently equipped station and hospital is well known, but at first the facilities were so scanty that it was impossible to care for even a moderate number of sick, and when the numbers increased to thousands, it is not surprising that the government found itself in the humiliating position of asking help of the various communities near by.

It is characteristic of this "land of contrast" of ours, that while, perhaps, unjustly severe in its arraignment of the government, each community gave its help with an unquestioning and ungrudging promptness, which is beyond praise. In fact, many private hospitals begged for sick soldiers, and taxed their scanty resources to meet a demand made upon them without any pretence of justice, except in the right of common humanity.

It is to be hoped that a full record of all the volunteer help in the different cities may be drawn up eventually. The demands upon the city of Boston were not small and deserve comment. Sick soldiers were brought here for hospital care from Santiago, Porto Rico, Camp Wikoff and Chickamauga. In addition to this, many soldiers discharged on furlough before complete recovery, suffering from relapse, on their return sought refuge in the hospitals near their homes.

The Massachusetts Volunteer Aid Association received, in Boston, nearly one thousand sick soldiers demanding hospital care chiefly in the month of September and early October. The sickest soldiers were the one hundred and sixty brought on the United States hospital ship *Olivette* directly from Santiago, and it is doubtful if there ever has been landed here a more pitiful cargo of men than these fever and dysentery stricken unfortunates.

The sick soldiers from Santiago, brought by the Massachusetts hospital ship *Bay State*, were also in a pitiable state, but the excellence of the equipment of this ship made it possible to give assistance during the passage, which placed many of the patients well on the road to convalescence.

Those brought by the *Relief*, as well as those brought by train from Camp Wikoff, were, in many instances, convalescents, as is equally true of those coming from Porto Rico, but, in many instances, the convalescents needed the greatest possible care.

Owing to the energy of his Honor Mayor Quincy, and of the Trustees of the Boston City Hospital, the help of the State authorities, and the efficient ambulance corps, the liberality of the Massachusetts General, Carney, Marine and Homeopathic Hospitals, the sick soldiers were transferred to hospital care without delay. It cannot be said that the capacity of the city was taxed to its utmost, as the excellent hospital at Long Island, especially enlarged through the instance of the mayor, was never filled, nor were the huts and tents at the City Hospital ever crowded to their fullest limits.

Although the other seaboard cities, as they were nearer to Cuba, were taxed more heavily for hospital accomodations, yet the relief record of Boston remains pre-eminent, from the fact that the bounty of the State equipped a private hospital ship, the *Bay State*, whose patients received from Santiago and Porto Rico, required hospital room immediately on the arrival of the ship. It may be stated unhesitatingly that sick soldiers were never transported so far and cared for so well as on that admirably equipped ship.

The promptness with which the hospitals made ready for the care of these arrivals is beyond praise. The tent hospital camp at the City Hospital deserves a detailed description, which it is to be hoped the trustees of that admirable institution will furnish for future record. The tent ward at the Massachusetts General Hospital was also more than excellent.

Perhaps the most noteworthy feat was the transfer of one hundred and nineteen sick from Camp Wikoff on the transport *Lewiston*, the shipwreck and subsequent delivery of the patients in Boston, in an undisturbed condition, five hours earlier than the time at which they would have arrived if the shipwreck had not occurred. If our civic government will continue to furnish us with a city physician capable of meeting emergencies as efficiently as was done in this instance by our present city physician, who volunteered to take charge of the expedition, we can in this regard well defy comparison with any of the most perfect of municipal organizations.

In fact, the experience of the summer has displayed to a surprising degree the varied abilities of the medical profession. The profession expects to be asked to care for the sick, to be required to do this well and with an untiring zeal. But in future, if the experience of this past summer can serve as a guide, not alone for hospital purposes, but for ship construction, for commanders of relief expeditions by land and sea, for agents to direct organizations of relief, to bring order out of sanitary chaos, wherever administration is needed, this community will at once and with confidence turn to its doctors.

MEDICAL NOTES.

What's in a Name? — The ship which recently brought plague to San Francisco was not named, as noted in several of our contemporaries, *Du Chesseanne*, but *Duchesse Anne*.

Christian Science and Homicide. — Athalie Mills, the "Christian Scientist" who "treated" Harold Frederic, and Kate Lyons the person in his service who summoned her, have been indicted by the coroner's jury in England for homicide, and are held for trial. The jury in their summing up express "abhorrence" of the Mills woman's relations to the case. In the language of Prof. William James, "Impression and intuition seem," in this case, "to have accomplished more than chemical, anatomical, or physiological information." But the result accomplished was a deadly one.

Pneumonia Resists the Absent Treatment. — A report comes from Tacoma, Wash., of the death of the leader of the Christian Science Church of Tacoma from pneumonia. Resisting the desires of his family that he should have medical treatment, he placed himself in the care of a woman Christian Scientist living in Illinois, who he held, regardless of distance, could relieve him. Regardless of distance, "of anatomy, of physiology and of chemistry," this intrepid and ignorant practitioner of the right thought "accomplished" so much that the self-appointed victim died.

Life Insurance and Christian Science. — The life insurance companies are beginning to look askance at Christian Science fanatics as poor risks; their healers "accomplish" too much.

X-rays in 1600. — "In *Notes and Querjes*," says the *New York Times*, "a story is quoted written by Mir Muhammed M'asun in 1600. An exiled prince meets a man who is carrying what are designated as 'hakku tubes.' Looking at the man the prince discovers that just as long as the man holds the hakku tubes his entire interior economy is visible. The prince at once purchases the tubes. Coming to Ghuzni, he finds a patient. The King of Ghuzni is suffering from dyspepsia. There is good reason for the king feeling so uncomfortable, for when the hakku tubing is applied, lo! it is discovered that the patient had swallowed not less than two water-snakes. Readers will then observe that the x-rays have been anticipated. The original of the story is found in Elliot's 'History of India' by its own historians. After a while we may discover that Noah's ark had water-tight bulkheads and twin-screws."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, November 16, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 100, scarlet fever 47, measles 110, typhoid fever 31.

Bequests to Hospitals. — By the will and codicils of Mrs. Lucretia A. Wilder, filed in the Suffolk probate office last week, an estate of about $16,000 is given to the Winchester Home for Aged Women in Charlestown, the Massachusetts General Hospital and the Boston Homeopathic Hospital, in equal shares.

"Bay State" Purchased by the Government. — The Massachusetts hospital ship, *Bay State*, has been purchased by the U. S. Government for the sum of $100,000. The vessel will retain the name of *Bay State* and will be used as a transport to carry soldiers and supplies to and from Cuba and Porto Rico.

The Medical Work of the Massachusetts Volunteer Aid Association. — Attention is called to the announcement on page 508 of the next two meetings of the Boston Society for Medical Improvement, to attend which members of the Massachusetts Medical Society are invited. The relation, by officers of the Massachusetts Volunteer Aid Association, of the medical work done in Boston, on the *Bay State*, in Cuba, Porto Rico and Montauk Point, Chickamauga and Camp Alger, will prove of interest and importance.

Dedication of the New Wards of the Newton Hospital. — The four new wards which have recently been added to the Newton Hospital were dedicated last Saturday with appropriate exercises.

NEW YORK.

Comparative Mortality of the Boroughs. — In comparing the mortality of the four Boroughs, Manhattan, Brooklyn, Queens and Richmond, we find that the highest number of deaths in proportion to the population is still in Richmond (Staten Island), where the average death-rate during the four weeks was 21.70, and the lowest in Brooklyn, where the average death-rate was 16.52. The lowest death-rate recorded in any of the boroughs was 11.82 in Queens during the week ending October 22d, and the highest, 31.34, in Richmond during the week ending October 8th.

A Criticism of Cornell Medical School. — There does not appear to be as yet any amelioration in the feeling of antagonism between the University of the City of New York and Cornell, and in his report presented at the annual meeting of the Council of the University, held November 7th, the Chancellor, the Rev. Dr. MacCracken, was especially severe on the latter institution. After stating that the medical work of the University, which at the date of his report last year was in an unsatisfactory condition, was now very prosperous, the enrolment of students being more than one-half larger than in 1897 and the faculty most harmonious and efficient, he mentioned that "a few unwilling professors had been spared to join an eager sister university." He then went on to say: "We regret that the eagerness of this out-of-town corporation to collect hastily a medical school has led them to offer to matriculants of one year ago doctors' diplomas after two years' additional study. We could not meet this offer after having announced that this class of 1899 should be our last three-years' class. We preferred to lose a score or two of students from our second-year class rather than meet this cut in rates." In another part of his report he refers to co-education in medical schools as wholly unsuited to metropolitan conditions.

Chlorine Gas in Diphtheria. — In the Kingston Avenue Hospital for Contagious Diseases in Brooklyn a series of tests have recently been made of the treatment of diphtheria by inhalations of chlorine gas deprived of its irritating qualities by means of the process devised by Dr. P. M. Bracelin, of Davenport, Iowa. The existence of true diphtheria was proved by bacteriological examination in every instance, and the reported results are extremely satisfactory, the mortality being only four per cent. Twenty-four consecutive cases, it is stated, were treated, without a death.

A Physician Elected to the Legislature. — Dr. Nelson J. Henry, Surgeon of the Ninth Regiment New York Volunteers and recently Assistant Surgeon-General of the State Militia, has been elected a member of the Lower House of the Legislature.

In Memory of Dr. John Blair Gibbs. — In connection with the exercises in celebration of the One Hundred and Thirty-Second Anniversary of Rutgers College at New Brunswick, N. J., on November 10th, a tablet was unveiled to the memory of Dr. John Blair Gibbs, of New York, who entered the Marine Corps Medical Service and fell at Guantanamo in the first land conflict of the Spanish war. The tablet was presented by Prof. Robert W. Prentiss, who was a classmate of Dr. Gibbs at Rutgers, and the principal address was made by Dr. Wm. K. Van Reypen, Surgeon-General of the Navy.

Precautions against Small-Pox. — In view of the continued existence of small-pox in the west central part of the State, where the disease has prevailed, although in a mild form, since May last, the State Board of Health has stationed a special medical inspector in the infected district, for the purpose of aiding the local health boards in suppressing the disease, and has also sent circulars to the school authorities calling their attention to the necessity of a strict enforcement of the law regarding vaccination.

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Miscellany.

THE OPENING BY SURGICAL MEANS OF A NEW SIDE-TRACK FOR THE BLOOD OF THE PORTAL VEIN.

Under the above title, Professor Talma, of the University of Utrecht, Holland, writes an article which appeared in the *Berliner klinische Wochenschrift* of September 19, 1898, the following abstract of which appears in the *Philadelphia Medical Journal* of October 29th, and which contains a novel suggestion of considerable interest regarding the treatment of hepatic cirrhosis. The observation in the post-mortem room of thick networks of veins in adhesions between the surface of the liver and abdominal wall led Talma to the idea, that by sewing the liver and great omentum to the abdominal wall a collateral circulation could be artificially established which would relieve the ascites of hepatic cirrhosis in cases in which the function of the liver cells was retained. Acting on this suggestion, Professor von Eiselsberg operated upon a case in which tapping had been performed five times, but had been rapidly followed by reaccumulation of the fluid. On opening the abdomen the surface of the liver was found granular, and the serosa white and thickened. The gall-bladder and great omentum were sewed to the abdominal wall, and the wound was closed. The wound healed kindly and the fluid did not re-accumulate in any considerable amount. The spleen remained enlarged, however, and as this was believed to be due to venous stasis, the abdomen was again opened, about three months after the first operation, and the spleen was sewed to the abdominal wall. During this second operation, occasion was taken to examine the site of the previous operation, and the subserous veins of the liver were found much enlarged in the region which was adherent to the abdominal wall. The results of both operations were satisfactory; the ascites did not return, the spleen decreased in size, and enlarged superficial veins between the site of operation and the intercostal veins became visible. The patient left the hospital relieved of all symptoms about a month after the second operation, and was seen in perfect health two years later. The possibility of the spontaneous formation of a caput medusæ resulting in relief of the distressing symptoms arising from obstructed circulation in hepatic cirrhosis has long been recognized, but any attempt at artificially producing a caput medusæ has not, so far as we know, been previously reported. The operation can be of use, as Talma has pointed out, only in cases in which the symptoms are due to interference with the circulation without any lessening of the activity of the liver-cells, as shown by acholia or hypocholia of the feces, urobilinuria, jaundice, etc. In these limited cases, taking into consideration the gravity of the prognosis of the disease under the ordinary medical measures of treatment, and the relatively slight danger which would be incurred by so simple an operation, the procedure would seem worthy of a trial.

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THE LIBEL SUIT OF AN OSTEOPATHIST.

The editor of the *Medical Age* has been sued for $25,000 by one Dr. William Smith, Osteopathist, on account of an editorial which Dr. Smith considers as reflecting discredit upon him. In regard to the matter Dr. Wm. M. Warren, the editor, expresses himself as follows:

"I need hardly assure any one familiar with the past record of the *Age*, that William Smith, M.D., D.O., has a large contract on his hands. His quest for damages is likely to prove futile, and his armor will need patching if it is to withstand the hard legal knocks that will be showered and battered upon it before he touches one dollar of the *Age's* money!

"Pray do not fancy, however, that William Smith and Osteopathy are to be lightly dismissed with the contempt that they merit. There is no use in blinking the fact that the lack of efficient organizations amongst reputable medical men has permitted the whole brood of quacks and charlatans to flourish apace. By the strangest irony of fate, Osteopathy, in some respects the most grotesque of medical aberrations, has well illustrated Lecky's dictum that a small but cohesive and determined minority can exert a political influence wholly disproportioned to its real weight and numbers. . . .

"Emboldened by its success, Osteopathy now enters the courts and offers battle to a medical journal which disputes its respectability. The challenge is accepted. In the interest of science, in defence of ethical and honorable medicine, in defiance of a quackery that constitutes a deep disgrace to an enlighted age and a stain on the communities which give it shelter, the *Age* proposes to maintain its position and to continue its denunciations of the ignorant pretenders who fatten on the sufferings of the credulous and confiding.

"I need not point out the bearings this contest must have on the interests of legitimate medicine, and I earnestly hope that the *Age* may count on the moral support and commendation of the entire profession."

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THERAPEUTIC NOTES.

For Local Anesthesia (Dobisch):

℞	Chloroform	ʒ ii
	Æther	ʒ iii
	Menthol	gr. xii

M. Use in an atomizer over the part to be operated upon.

In cases of sunstroke Dr. H. Gras claims to have obtained wonderful results from the employment of trinitrin (nitro-glycerin), whether the attack present symptoms of severe cephalalgia or those of meningitis. He advises the following formula:

℞	Solution of trinitrin (1 1000) . . .	gtts. xx
	Aquæ destil.	℥ x

M. Of this a teaspoonful is administered every quarter of an hour, until the symptoms disappear completely, controlling at the same time the frequency of the doses in proportion to the progressive amelioration of the patient.

Chronic Arthritis Deformans. — A. Delcout[1] reviews the comparatively infrequent occurrence in children of chronic arthritis deformans. Heredity seems to be an important predisposing factor in this affection, the principal cause of which is undoubtedly to be traced to a general disturbance of nutrition. The author does not incline to the belief that scrofulosis and the affection under consideration have any relation to each other; he rather thinks that there exists a certain antagonism between the two. The therapy, unfortunately, in view of the innate tendency of the disease to progressive development, is but little successful; the creation of hygienic surroundings is most to be relied upon; internally — sodium salicylate, arsenic, tincture of iodine; externally — baths, massage and electricity.

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Correspondence.

THE BACTERIOLOGY OF ACUTE ARTICULAR RHEUMATISM.

Boston, November 9, 1898.

Mr. Editor: — Apropos of the editorial on the bacteriology of acute articular rheumatism in your Journal of November 3d, the recent experiments of Prof. I. Savtchenko,[1] at the University of Kazan (Russia) may be of some interest. Of six cases of acute articular rheumatism under observation the author found in four in a pure state, and in the fifth case mixed with streptococci, an anërobic bacillus identical in its morphological, biological and pathogenetic characteristics with the one described by Achalme. The sixth case was that of a convalescent from the disease, and this was probably the reason why the search for the bacteria in it proved futile. The author considers the following as the best culture medium: to a neutral bouillon, slightly sweetened with a one-half-per-cent. solution of lactose, there are added ten cubic centimetres of a normal salt solution; this is neutralized by lactic acid, until the reaction is faintly acid, three-fourths of this bouillon are added, at the moment of the preparation of the culture, to a quart of milk sterilized in an autoclave (digester) to the temperature of 302° F. To ten cubic centimetres of this mixture one cubic centimetre of blood is added, and after distributing it in two tubes an anërobic culture is prepared. Even by the end of twenty-four hours the development of the culture becomes evident.

As to the biology of Achalme's bacillus, it secretes a whole series of substances, endowed with negative chemiotaxis and with necrotizing properties, and it is principally to these substances which develop by fermentation in the medium, that the bacteria owe their pathogenetic properties. They themselves possess, however, no negative chemiotaxis: thus, if, after having previously provoked a leucocytosis in the peritoneal cavity of the experimented animal, a certain quantity of the culture be injected into it, phagocytosis at once enters into play and the animal survives; whereas a similar quantity injected subcutaneously or into the muscular tissue proves fatal in a short time. The diapedesis of leucocytes is hindered by the presence of substances endowed with negative chemiotaxis and formed during fermentation; these substances seem to a certain extent to be neutralized by the peritoneal endothelium, and this may possibly be the reason why the same animal survives the injection of a certain quantity of the culture into the peritoneum, and succumbs to the same quantity when injected subcutaneously; thus, the guinea-pigs which received into their peritoneal cavities one-fourth cubic centimetres of a culture, the virulence of which was preserved by successive inoculations of pigeons, survived, thanks to an influx of leucocytes and the phagocytic reaction produced by them four to five hours later; whereas the other animals which received only one-twentieth cubic centimetres subcutaneously succumbed twenty-four to thirty-six hours later, presenting all the symptoms of edema and neurosis of the subcutaneous cellular tissue. The same animals, which, after having received the first injection into the abdominal cavity, become refractory to doses fatal to others, succumb nevertheless to a minimum fatal dose injected subcutaneously. Immunized rabbits resist infection, thanks to phagocytosis, and become indifferent toward the various toxic products secreted by the bacteria. Salicylate of soda retards the growth of the bacteria, when salicylic acid is disengaged during fermentation.

The bacteriology of acute articular rheumatism once established on a more or less positive basis (as it promises to be in the near future), the nature of the affection, or rather of the affections, known under the current name of chronic articular rheumatism, will undoubtedly become much clearer than it is now. Professor Zacharin in his "Clinical Lectures"[2] delivered at the Medical Department of the Moscow University called attention to the incorrectness and vagueness of the term acute articular rheumatism, as applied to several affections, which seem to differ from each other not only in their etiology but also in the nature of the parts affected: thus, although the most prevalent and the most frequent affection is that of the articulations, there occur in these cases sometimes affections of the skin, as evidenced by cutaneous hyperesthesia, dermatitis, etc.; or of the bones, most frequently in the form of periostitis (there is pain along the tract of the bone aggravated by pressure, and frequently swelling); then the cartilages may become affected, as in perichondritis of the ribs or of the cartilages of the larynx or of the ears; there is also a muscular rheumatism, very likely a myositis, as evidenced by a high temperature, tension and tenderness on pressure and motion, and later on emaciation of the affected muscles and the formation of cirrhotic indurations; finally the nerves become affected, the so-called rheumatic neuritis.

As regards the etiology of the affections in question, it is true that acute rheumatism is the most frequent causative agency, but other acute infectious diseases play a by no means unimportant rôle, thus: gonorrhea, syphilis, tuberculosis; gout, also a plain cold, and various traumatic influences, especially those that act constantly, even if not strongly, as intense, fatiguing bodily activity; then comes abuse of alcoholic drinks; alcohol, even if it does not directly cause any affection of the articulations, tends undoubtedly to create a predisposition towards them. It is easily understood that the variety of affections current under the name of chronic rheumatism requires also a variety of treatment in evident contradistinction to the treatment of acute articular rheumatism, in which the salicylates or their combinations exert what may fairly be put down as a specific effect; myositis will be benefited by massage, which does harm in periostitis by aggravating the pains; electricity is very useful in affection of the joints; neuritis requires rest, and after the acute stage is over cautious massage, chiefly of the neighboring muscular masses (with a derivative aim in view), etc. For a want of a better name Zacharin proposes the more convenient term polyarthritis chronica, the joints being the parts most frequently affected. The term has at least the advantage of not creating any confusion in the mind of the student and of establishing a distinction between an acute infectious disease and its consequences. It is just as logical to call the disease chronic articular rheumatism, that is, a chronic condition of an acute infectious process, as it would be to call the chronic bronchial catarrh frequently following measles, chronic measles, or the chronic diarrhea left after a typhoid, chronic typhoid.

Very truly yours,
A. Rovinsky, M.D.

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[1] Russian Archives of Pathology, Clinical Medicine and Bacteriology, May 31, 1898.

[2] English translation now in press.

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[1] Revue mensuelle des maladies de l'enfant, July, 1898; Munch. med. Woch., No. 40, 1898.

METEOROLOGICAL RECORD

For the week ending November 5th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...30	29.93	46	48	43	91	89	90	N.	W.	8	5	O.	O.	.07
M..31	29.93	45	50	40	88	63	76	W.	N.W.	12	12	C.	C.	
T....1	30.25	45	51	40	69	71	70	N.W.	S.	8	9	C.	C.	
W...2	30.16	53	63	43	72	56	64	S.W.	W.	15	12	O.	C.	
T....3	30.41	49	56	42	72	67	70	N·W.	S.W.	8	12	C.	C.	
F....4	30.48	49	56	41	77	77	77	W.	S.W.	4	12	C.	C.	
S....5	30.18	48	57	40	95	84	90	N.E.	S.	2	10	G.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 5, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1068	321	7.11	13.68	2.61	1.22	1.53
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	202	49	10.00	10.00	2.00	4.00	3.50
Baltimore . .	506,389	182	57	10.45	8.80	—	.55	9.35
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	—	—	—	—	—	—	—
Washington .	277,000	126	19	12.64	13.43	.79	4.74	3.94
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	46	10	10.85	19.53	—	4.34	4.34
Nashville . .	87,754	30	8	23.31	16.66	—	10.00	10.00
Charleston . .	65,165	35	9	15.44	14.30	8.58	2.86	—
Worcester . .	108,240	32	17	18.78	3.13	6.26	9.39	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	26	9	11.55	7.70	7.70	—	3.85
Lowell . . .	88,641	25	7	16.00	12.00	8.00	4.00	4.00
Lynn	66,703	18	3	11.11	11.11	—	11.11	—
New Bedford .	66,340	17	10	17.64	5.88	5.88	5.88	5.88
Somerville . .	61,101	8	2	12.50	—	—	—	—
Lawrence . .	57,263	21	11	23.80	—	14.28	4.76	—
Springfield .	56,501	17	4	17.64	—	5.88	5.88	5.88
Holyoke . . .	43,424	13	12	13.58	27.16	—	6.79	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	12	4	—	8.33	—	—	—
Malden . . .	31,613	9	1	—	33.33	—	—	—
Chelsea . . .	33,468	11	3	9.09	—	—	—	9.09
Haverhill . .	32,022	11	2	18.18	33.33	—	9.09	9.09
Gloucester . .	30,589	7	0	—	—	—	—	—
Newton . . .	29,716	—	—	—	—	—	—	—
Fitchburg . .	29,438	4	2	—	50.00	—	—	—
Taunton . . .	28,167	12	5	8.33	—	8.33	—	—
Everett . . .	25,338	7	1	14.28	—	14.28	—	—
Quincy . . .	23,549	5	3	20.00	—	—	—	20.00
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	4	1	—	—	—	—	—
North Adams .	20,971	4	0	25.00	—	25.00	—	—
Chicopee . .	17,842	4	2	—	25.00	—	—	—
Medford . . .	16,511	5	0	—	—	—	—	—
Newburyport .	14,915	4	2	—	—	—	—	—
Melrose . . .	14,032	2	0	—	—	—	—	—

Deaths reported 1,970: under five years of age 576; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 186, consumption 228, acute lung diseases 209, typhoid fever 63, diarrheal diseases 51, diphtheria and croup 42, cerebro-spinal meningitis 15, scarlet fever 6, measles 3, whooping-cough 3, erysipelas 2, yellow fever (New York) 1.

From cerebro-spinal meningitis New York 8, Washington 3, Baltimore, Nashville, Worcester, Somerville and Holyoke 1 each. From scarlet fever New York 5, Lawrence 1. From whooping-cough New York 3. From measles New York 3. From erysipelas Washington and Providence 1 each.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending November 29th, the death-rate was 17.9. Deaths reported 3,814; acute diseases of the respiratory organs (London) 263, diarrhea 152, fever 81, diphtheria 82, measles 65, scarlet fever 38, whooping-cough 34.

The death-rates ranged from 9.6 in Croydon to 26.6 in Liverpool, Birmingham; Bradford 16.5, Cardiff 15.0, Gateshead 22.1, Huddersfield 12.7, Leeds 15.1, Leicester 15.5, London 16.3, Manchester 23.5, Newcastle-on-Tyne 19.6, Nottingham 15.2, Sheffield 22.5, Sunderland 23.2, West Ham 12.9.

SOCIETY NOTICE.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held in the Anatomical Lecture Room, Harvard Medical School, corner of Boylston and Exeter Streets, on Monday evening, November 21st, at 8 o'clock.

The subject of the evening will be: "The Medical Work of the Massachusetts Volunteer Aid Association."

Communications are expected from Drs. H. L. Burrell, E. H. Bradford, J. T. Bottomley, Mr. J. T. Boyd, Mr. W. H. Seabury and Miss C. W. Cayford.

All members of the Massachusetts Medical Society are cordially invited to be present.

James G. Mumford, M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

Present Status of Serum Therapy. By Geo. W. Cox, M.D., Chicago. Reprint. 1898.

The Mind Reader. By L. M. Phillips, M.D. London and New York: F. Tennyson Neely.

Modern Treatment of Tuberculosis. By Charles Denison, A.M., M.D., Denver, Col. Reprint. 1898.

The Abuse and Dangers of Cocain. By W. Scheppegrell, A.M., M.D., New Orleans, La. Reprint. 1898.

Koplik's Spots as an Aid in the Diagnosis of Skin Lesions. By Jacob Sobel, M.D., New York. Reprint. 1898.

The Medical News' Visiting List, 1899; Thirty Patients per Week. Philadelphia and New York: Lea Brothers & Co. 1898.

Recent Therapeutic Application of the Valerianates of Creosote and Guaiacol. By J. W. Wainwright, M.D., New York City. Reprint. 1898.

Traumatic Separation of the Epiphyses. By John Poland, F.R.C.S. With 337 illustrations and skiagrams. London: Smith, Elder & Co. 1898.

Des Indications et de la Technique des Lavages Uréthro-Vésicaux. Par le Dr. G. Richard d'Aulnay, Ancien Interne de St. Lazare. Paris. 1898.

Manifestations of Syphilis in the Mouth. The Dangers of Specialism in Medicine. By L. Duncan Bulkley, A.M., M.D., New York. Reprints. 1898.

Note on Four Micro-organisms Isolated from the Mud of the River Thames, which Resemble Bacillus Typhosus. By A. C. Houston, M.B., D.Sc., London.

Ergot in Chronic Malaria. Dermoid Cyst over the Centre of the Large Fontanelle. Three Cases of Amaurotic Family Idiocy. By A. Jacobi, M.D., LL.D., New York. Reprints. 1898.

Skiagraphic Atlas, showing the Development of the Bones of the Wrist and Hand, for the Use of Students and Others. By John Poland, F.R.C.S. London: Smith, Elder & Co. 1898.

Cleft Palate; Treatment of Simple Fractures by Operation; Diseases of Joints; Autrectomy; Hernia, etc. By W. Arbuthnot Lane, M.D. London: The Medical Publishing Co. Limited.

On the Study of the Hand for Indications of Local and General Disease. By Edward Blake, M.D., Author of "Lip Chorea or Pterygoid Stammering," etc. London: Henry J. Glaisher. 1898.

Transactions of the Pathological Society of Philadelphia, Vol. XVIII, Containing the Report of the Proceedings of the Society from October, 1895, to June, 1897. Edited by William S. Carter, M.D., Recorder of the Society. Philadelphia. 1898.

Deaths (Ten), Surgical and Causes. The Dermal Coverings of Animals and Plants; A Short Résumé of Various Authors. Serpents and Their Venom: Copperhead, Coral and Rattlesnake. By B. Merrill Ricketts, Ph.B., M.D., Cincinnati. Reprints. 1898.

Students' Histology, a Course of Normal Histology for Students and Practitioners of Medicine. By Maurice N. Miller, M.D., late Director of the Department of Normal Histology in Loomis' Laboratory, University of the City of New York. Revised by Herbert U. Williams, M.D., Professor of Pathology and Bacteriology, Medical Department, University of Buffalo. Third revised edition. Profusely illustrated. New York: William Wood & Co. 1898.

Original Articles.

THE OPERATIVE TREATMENT OF INTESTINAL FISTULA AND ARTIFICIAL ANUS.

BY C. B. PORTER, M.D., BOSTON.

Intestinal fistula follows most frequently upon operation for appendicitis, or upon the uterine adnexa. Gangrene of a portion of the contents of a hernial sac often results in a permanent fecal discharge.

Other causes less frequent might be mentioned, as wounds of the intestine, unintentional and unrecognized injury to the bowel during abdominal or pelvic operations.

Tuberculous or malignant ulceration of the intestine may lead to local adhesive peritonitis, formation of abscess in the abdominal wall with external rupture, followed by fecal discharge.

In cases of appendicitis, a fistula may be due to the gangrenous condition extending to the cecum, to faulty ligature of the base of the appendix, to localized gangrenous condition of the cecum. If nonabsorbable material, as silk, is used for ligature in abdominal operations where sepsis is present, an abscess may result from the silk becoming septic and result in fecal fistula.

The time was when I considered my surgical armamentarium for abdominal operations incomplete without various sizes and lengths of glass and rubber tube for drainage. These I have for a long time abandoned, and now use only gauze wicks. The fact known to all, that in many cases the appearance of feces in the wound was not observed till many days after the operation, led me to feel that pressure ulceration was the cause. It is well recognized that many fecal fistulæ ultimately close if given sufficient time. Many weeks, and sometimes many months, are required. The delay, however, is attended with much suffering due to confinement to bed in many cases, to the offence to patient and friends from the constant fecal discharge, but most of all to the severe pain caused by the contact of the discharge with the skin, producing irritation even to ulceration. I have known this to be so severe as to prevent sleep and demanding such frequent dressings as to tire out both patient and nurse. This irritation is the worse the higher up in the intestine the fistula is located. Malnutrition may be marked and this particularly in those cases where the opening is in the jejunum or upper part of the ileum.

The surgeon must endeavor to so improve the technique of this operation as to eliminate most, if not all of the dangers, and thereby feel justified in urging upon the sufferer early operation for his relief. What can the surgeon accomplish in the way of prophylaxis?

(1) Urge early operation, when possible, in such cases as might result in fecal fistula to forestall, if possible, the effect of the septic processes which might lead to sloughing of the bowel, if not averted by appropriate antiseptic treatment.

(2) Discard all forms of drainage-tubes, except in rare special cases and substitute gauze drainage. It has seemed to me that thought enough is not always given to the method of placing a gauze drain. Except in rare cases for the sake of controlling hemorrhage as well as to drain, the gauze should not be packed into the wound, but merely as a wick passed down to the bottom and sufficiently small, so that if the wound is partially closed by sutures, it would not be choked at the outlet and its function thereby impaired.

(3) When possible, never use in the abdominal cavity anything but absorbable material for ligatures or sutures. I am aware that for ligature of an ovarian pedicle and intestinal suture we have nothing to take the place of silk, and where sepsis is not present, it is all that can be desired and is in time absorbed.

In the operative treatment of intestinal fistula and artificial anus, it is well to consider the more usual forms and to recognize that in most cases the artificial anus is an exaggerated form of fecal fistula. In recent fecal fistulæ the tract of the fistula is not lined with mucous membrane. (See Fig. 1.) In old ones often the mucous membrane has grown and lined the fistula. (See Fig. 2.) I shall refer to these forms again under head of treatment.

Again, the relation of the intestine to the parietes must be considered. In some the gut runs parallel with the abdominal wall with an opening connected by a fistulous tract with the surface. (See Fig. 3.) Again, the gut has more or less of an angle at the point of attachment and the acuteness of this angle determines largely the amount of fecal discharge, the spur interrupting the onward passage of the fecal current. (See Fig. 4.) An artificial anus is generally an exaggeration of this later condition, the spur projecting into the parietal wound so as to shut off the lower part of the bowel and obstruct the fecal flow into it. (See Fig. 5.)

Treatment. — *Palliative.* I have already stated that many fecal fistulæ close spontaneously in time. Can the surgeon hasten this desired result? Curetting of the sinus is often of great advantage. I recall a case of my own in a gentleman very fat. The appendix was gangrenous, long and large, filled with a number of fecal concretions. Its base was reached and ligated with the greatest difficulty. The case progressed well, but a fistula persisted. I curetted deeply, but found at that time no cause for its persistence. The next morning, however, a small, fecal mass presented at the opening. The next day the same thing occurred and in a few days the fistula closed. I suppose that one of the fecal concretions had escaped from the appendix and lay undetected owing to the great depth of the wound. If silk has been used for ligature and fistula persists, it should be suspected as the cause and hunted for with the curette or a crochet needle; the latter I have found very useful in such cases, the hook on the end of the needle catching readily in the loop.

When the fistula is lined by simple granulation tissue, application of nitrate of silver is of great benefit. When there is a mucous lining, this must be thoroughly destroyed by the actual cautery or dissection. In using the cautery, care is necessary to prevent injury to the intestine by its tip. When the spur of the bowel wall projects into the fistula, this can be destroyed to a sufficient extent to allow of the onward flow of the feces by application of pressure forceps and producing slough of the spur.

Dupuytren devised a clamp for this purpose, but that was before the day when hemostatic forceps of all sizes and lengths were in every surgeon's bag. In

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[1] Read before the Surgical Section of the Suffolk District Medical Society, May 4, 1898.

using these pressure forceps there is danger of nipping another knuckle of intestine lying behind in the angle of the spur. (See Fig. 6.)

When any one of the viscera is abnormally attached to the abdominal wall there is danger of intestinal obstruction, the adhesion acting as a band. Recognizing this danger and the blind application of pressure forceps to the spur, it is a question whether such cases should not be submitted to operation. I believe the only satisfactory way is to dissect the bowel free from its abnormal attachment so that it can be brought out of the abdominal cavity and properly dealt with.

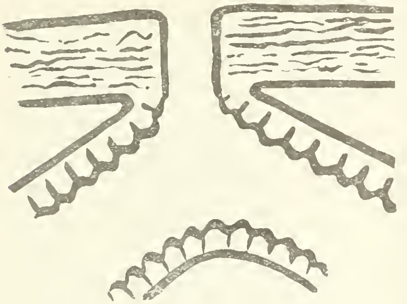

FIG. 1.

OPERATION FOR FECAL FISTULA AND ARTIFICIAL ANUS.

The bowels should be properly prepared for two days before operation by free catharsis and suitable diet, the skin made as clean as possible before anesthesia. Anesthesia being complete, the intestinal opening should be cleansed and a gauze tampon inserted into it with thread attached to prevent any movement of it and thread secured in snap forceps. I then dissect up the skin about half an inch from the opening and surrounding it, the faces of the flaps are turned towards each other, and tightly sutured to prevent any escape of feces. The next step is to enter the peritoneal cavity. This is done by extending the incision around the fistula upward or downward, obliquely or vertically, as may seem best to the operator, for an inch or more and carefully dissecting down to the peritoneum for the purpose of entering its cavity outside of the adhesions. This is most essential that the exploring finger may determine the extent and location of the adhesions. Then the finger directing the operator, the button of skin with the intestine attached can be freed and brought outside. (See Fig. 7.) The intestines are then walled off. The operative field on the intestine must be shut away from the fecal current above and below the fistula at a sufficient distance from it to allow of easy manipulation. This may be done by numerous devices, as clamps, springs, rubber tubing, etc., according to the selection of the operator. I have found a small wick of gauze, eight to ten inches long, most satisfactory and the pressure exerted under the control of the surgeon. I place it by passing a pair of small hemostatic forceps through the mesentery close to the intestine, seize the wick, draw it through and tie sufficiently tight to control all escape of feces. The same is done on both sides of the fistula. The sutures in the button of skin are removed, the gauze tampon pulled out and the intestine and its surroundings cleansed afresh. The surgeon has now to decide whether a partial or complete resection of the intestine is necessary. If complete, whether he will use an end-to-end suture or some of the various devices invented for that purpose, Senn's plates, Murphy's button, etc. I myself prefer an end-to-end suture, if the condition of the patient will allow the requisite time.

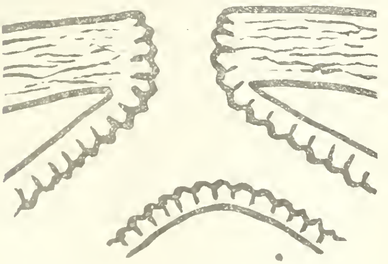

FIG. 2.

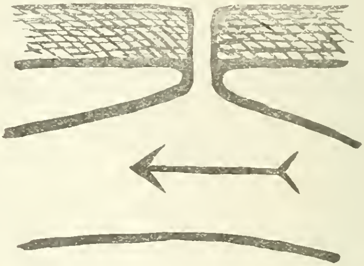

FIG. 3.

In exsection of a portion of gut, care must be taken in ligature of the mesenteric vessels not to interfere with the supply to the cut ends, otherwise sloughing will occur and the suture fail. When the opening has infringed largely upon the lumen of the intestine leaving only a narrow band next to the mesentery, I have excised very obliquely, leaving the band next the mesentery, for it has long been known that the sutures next the mesentery are most apt to be faulty.

Before suturing I place some guide threads, one at the mesenteric border and another opposite it at midpoint of the divided end of the intestine and on each side. By these the cut ends can be kept equally stretched, which greatly facilitates the placing of the sutures. (Fig. 8.) I am practically indifferent to the method of suture. I have had equally good results with the continuous, the mattress and the Czerny-Lembert stitch. Often a combination answers best. I usually place first a continuous suture of fine catgut around the cut edge of the gut, including all the coats, then a continuous stitch of fine silk uniting the cut ends, and reinforce it by a Czerny-Lembert or simple interrupted suture. With the suturing finished, the guide threads should be withdrawn and the field of operation again cleansed. The surgeon should inspect his work to see if it is complete, the gauze ligatures around the intestine removed and the intestine dropped into the abdominal cavity. When possible. the omentum should be drawn down over it. Before closing the wound, the cicatrical tissue should be removed sufficiently to expose afresh the muscles on each side when possible.

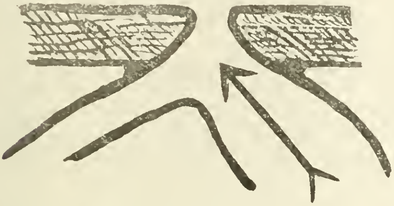

FIG. 4.

There is this caution to be mentioned. In some cases, owing to the protracted gaping of the wound, the edges are very unyielding and I have twice had to drag the edges together with two pairs of double hooks while the stitches were being tied. This is especially the case in operations for the cure of umbilical hernia. The recti are widely separated and exposed with difficulty. In one such case, in addition to usual ones, I used a number of mattress sutures of silkworm gut, entered an inch and a half away from the edges of the wound and through the whole thickness of the abdominal wall. The result was a cure of the hernia which was complete months afterward.

I have used this deep mattress stitch recently in a case of double intestinal fistula with success, in which the edges of the parietal wound were drawn together by double hooks with difficulty.

For the final closing of the wounds use silkworm gut or silver wire; I prefer the latter. When the laxity of the abdominal wall will allow of it, I prefer to close an abdominal wound by four layers of absorbable sutures.

(1) A continuous suture of the peritoneum.

(2) An interrupted one of animal tendon through muscles and fascia.

(3) A continuous one of fine catgut, approximating accurately the edges of the fascia, and finally, a continuous one of fine catgut closing the skin wound. I have used this method for a long time in all cases in which it was practicable, and feel that the accurate adjustment of the different layers results in the best and strongest cicatrix obtainable, and prevents, as far as the surgeon can do so, any subsequent hernia.

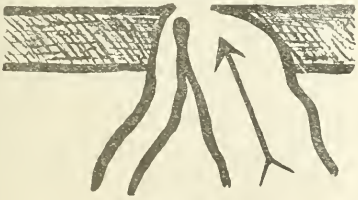

FIG. 5.

There is some difference of opinion as to the advisability of immediate complete closure of the abdominal wound. Treves says on resection of the intestine, some advise attaching the sutured coil to the parietal peritoneum and leaving the parietal wound partly open. This is advised "if there is any doubt as to the perfection of the suturing," and he adds, "there should be no more doubt upon that point than upon the perfection of the ligaturing in hemorrhage or upon the perfection of the reduction in operating upon strangulated hernia. If there are irremediable weak points in the suture line, an artificial anus should be established at once."

I have had in one case to regret not closing the parietal wound at once. This was done on the third day. The intestinal suture having proved perfect, the patient now has a hernia in the cicatrix. I have had one case in which I closed the wound, except at the lower angle through which a wick was placed into the pelvis. This was necessary because during the operation a fistulous tract leading to necrosed bone was found to communicate with the fecal fistula. This case died from sepsis on the fourth day after operation. No autopsy was allowed, but I feel confident that the dead bone was the origin of the trouble.

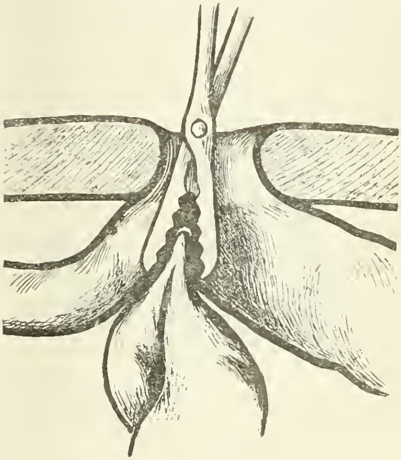

FIG. 6.

To conclude, the important steps are —

(1) The proper preparation of the patient as to bowels and skin.

(2) Temporary closing of the fistulous opening by dissecting up a button of skin and suturing it to close the fistula temporarily.

(3) Entrance to the peritoneal cavity at a point some distance from the fistula to avoid adhesions and to have an intelligent exploring finger as guide in the peritoneal cavity.

(4) Freeing of the adhesions so that the intestine and fistula can be brought out of the peritoneal cavity.

(5) Careful walling of the peritoneal cavity from the seat of operation.

(6) Especial care in suturing the mesenteric border.

(7) Refreshing the muscular edges of the wound.

(8) The greatest care in cleansing of the sutured bowel before its return to the abdominal cavity.

(9) The firm suturing of the parietal wound.

Some fistulæ cannot be subjected to the method of treatment just described. These are usually in the large intestine of which the mesentery is often too short to allow the bowel to be brought out of the peritoneal cavity, or the inflammatory adhesions may bind it down, or the peritoneal coat may have been destroyed, making it impossible to approximate healthy peritoneal surfaces, a necessity to insure union. These can be treated by intestinal anastomosis and exclusion of the diseased portion of the intestine from the fecal current. When a tortuous sinus in the abdominal wall is present, this must be freely incised to the intestinal opening before a decision as to the method of operation can be determined. I have never had a case where exclusion of a portion of the gut was necessary. Those interested in this method I would refer to the *Archives für Klinische Chirurgie*, vol. lvi, second half, page 281, on the treatment of intestinal fistula and stricture of the intestine by total exclusion of the affected part, by Dr. A. Freih, and another, *Medical Record*, February 20, 1897, on unilateral and complete exclusion of the intestine for fecal fistula by F. Kammerer, M.D. I should like to report a few cases which will illustrate some of the points in this paper. (Some of the figures are from Senn.)

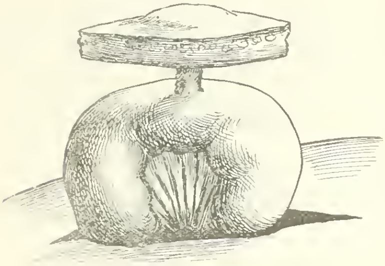

Fig. 7.

Case I. Graphelea Young, from Lexington, N. H., aged sixty-seven, was operated upon in August, 1879, five years ago, for a strangulated right inguinal hernia. Following the operation there has been persistent fecal discharge from two openings in the right groin.

Operation. January 11, 1884. Ether. A bougie was passed through the two openings which were three inches apart and the intervening tissue divided. There was disclosed the remains of the hernial sac, the ileo-cecal junction, the appendix and adjacent part of the mesentery, all bound together by dense cicatricial tissue; two openings were found in the intestine, one at the ileo-cecal junction, the other three-quarters of an inch away in the ileum.

With a finger in the intestine, the gut was carefully freed from the abdominal wall, and the expediency of resection of the bowel was considered, but it was not thought safe as it involved the removal of the appendix and a portion of the cecum and ileum.

The two openings in the bowel were therefore excised — that near the cecum involved in its excision a portion of the cecal wall.

On attempting suture of the resulting wound — it became evident that the lumen of the ileum would thereby be too much narrowed. So the incision was prolonged *upwards* in the ileum, making an oval wound, which could then be sutured transversely to the edge of wound in the cecum, after the manner of a modern pyloroplasty.

The wound was closed in the accustomed manner, with interrupted silk sutures, inverting the raw edges into the bowel; a number of extra sutures, further strengthening the angle, were introduced in a second layer. Bowel replaced — the abdominal ring was closed by deep, silver-wire sutures, and the skin approximated by superficial stitches of silk, except at the lower angle where a rubber drainage-tube was placed.

Employed gauze compress and regular Lister dressing, firmly held in place by a spica bandage.

Whole operation required two and three-quarters hours, the carbolic spray playing throughout; except for severe vomiting in the first two days, recovery was uneventful; the primary rise of temperature to 101° was soon followed by a normal fever curve. Patient was discharged well, nine weeks after the operation, April 14, 1884.

It will be seen by the date that this was one of the early cases of cure of fecal fistula by radical operation.

Case II. John D. S., aged fifty-two. In 1882, two years previous to the operation, the patient had a strangulated right inguinal hernia which was not reduced and resulted, at the end of fourteen days, in a fecal fistula. For eighteen months most of his feces had discharged through the opening. He had great trouble in keeping himself clean and had been confined to his bed most of the time. He had lost much in weight.

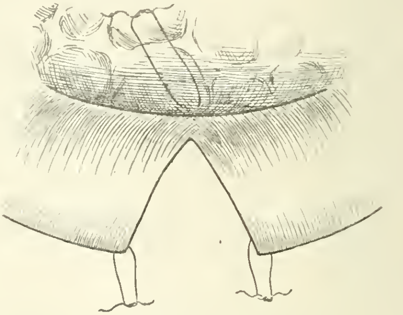

Fig. 8.

Operation. An incision was made down upon the ring in a line with the inguinal canal, about six inches long, and after careful dissection, two ends of the intestine were found projecting through the ring. They were carefully dissected to free them, and the edges were then approximated with fine silk sutures. The sutured intestine was put back into the abdominal cavity and the wound closed, a drainage-tube at the bottom.

The patient made a good recovery with no complication save a small abscess which was not fecal. Some months afterwards he reported a gain in weight of thirty pounds.

Case III. S. C., aged thirty-nine; operated upon May 11, 1893, for appendicitis. The intestinal wound was found gangrenous with fecal discharge in the abscess cavity. Seventeen weeks afterwards an unsuccessful plastic operation was done for closing the fistula, without benefit. Four months afterwards I operated.

An incision was made so as to enclose the skin about the fistula in an elliptical shape. There was considerable thickening of the skin which was freed down to the bowel. The button of skin thus separated was grasped with large, compressing forceps. The wound was thoroughly douched and the intestine drawn out as far as adhesions would permit and packed about with sterile gauze. Then the indurated skin surrounding the fistula was dissected from the intestine. Exploration with the finger was then made to determine whether or no a contraction existed above or below the fistula. There was none. The fistula was excised, taking most of the intestine for an inch and a half, except its mesenteric portion. The edges were sewed together with fine, iron-dyed intestinal sutures, and after the first row, a second row was introduced to insure accurate coaptation.

Provisional sutures for closing the wound were inserted, the intestine dropped back into the abdomen and gauze passed down to it for drainage. Three days afterwards the abdominal wound was closed by tying the provisional sutures, and the introduction of one strong silver-wire stitch in the middle of the wound. Perfectly firm primary union was obtained. The patient has since developed a hernia in the cicatrix. I now criticise my treatment in two respects: I did not close the wound until the third day after the operation, and allowed the patient to get about too soon, though the record is not explicit on that point. At present I keep all patients with laparotomy wounds recumbent three weeks.

Case IV. E. M., aged forty-eight. The patient was operated upon eighteen years ago for some pelvic disturbance. The cicatrix was at the site of the usual operation for suppurative appendicitis. This fistula had gradually moved from the region of the appendix to the umbilicus, where the fistulous opening now exists, closing as it travelled. The long cicatrix is dense and firm and very little movable. The sinus at the umbilicus is tortuous and is apparently about two inches deep. There seems to be considerable massing of the parts around the fistula forming quite a tumor in the immediate vicinity. The discharge varies greatly from time to time. The operation as described in the paper before was done, and in freeing the skin and fistula an opening was made into an abscess cavity leading down in front of the bladder and containing a piece of dead bone. This was cleansed with great care. The opening in the intestine was found with difficulty on account of the adhesion of the adjacent coils. The fistula was closed first by continuous suture reinforced by Lembert stitches. The site of the operation was cleansed with sterilized water. A gauze wick was inserted in the lower end of the wound leading into the pelvis to the abscess cavity and another at the umbilicus down to the sutured intestine. The rest of the wound was closed with interrupted silkworm-gut sutures.

After the operation the patient gradually failed, and died on the fourth day, showing symptoms of sepsis with a temperature of 106°. No autopsy was allowed. My feeling was that the sepsis was due to the complication present of necrosed bone.

Case V. A. K., aged twenty-six. Patient was operated September 15, 1897, for chronic appendicular abscess, which resulted in a fecal fistula.

Operation. January 14, 1898. An old scar enclosing the fistulous opening was dissected after the manner I have described in this paper, until the peritoneal cavity was opened. It was found that the bundle of intestines was adherent to the bladder, from which they were dissected with a sound in the bladder for a guide. They were then found attached to the uterus, posterior surface, which was also freed. It was found necessary to excise two inches of the intestine. An end-to-end suture was then made with interrupted catgut sutures, size No. 1, chromicized. The peritoneal surfaces were then approximated with interrupted intestinal silk sutures reinforced by a third layer of Lembert stitches. Great care was taken in the suture at the junction of the mesentery. The mesentery itself was sewed on each side with fine silk sutures. The sutured portion of the intestine was dropped back into the abdominal cavity when it was seen that the appendix was tied up in a mass of adhesions. The tip was large and showed evidence of old ulceration. The appendix was removed. The omentum was drawn down over the intestine and the wound closed with silver-wire and silkworm-gut stitches.

The patient made an uneventful recovery and was discharged four weeks after the operation.

Case VI. S. K. R., operated for appendicitis June 28, 1897, in another city. The appendix was gangrenous. Six days after the first operation there was intestinal obstruction, for which he was again operated. A long convalescence followed and five months afterwards an operation for the closure of the fistula was done without success. Four months later he consulted me with reference to operation. His condition was such that I advised waiting a few weeks to regain his strength. A month later I saw him again and he was so much improved that I operated on February 13, 1898.

About half-way between the umbilicus and the anterior superior spine of the ilium was a cicatrix about four inches long by one and one-half inches wide, in the middle of which, about an inch apart, were two openings. The skin for a large area around the wound was red and excoriated from the intestinal discharge. An elliptical incision was made through the cicatrix around the fistulæ. The abdominal cavity was opened at the upper end of the incision and from above downward the adhesions to the abdominal wall and the loops of intestine were separated so that the intestine could be brought out of the wound. It was then found that the fistulæ were not in the same loop, but in adjacent loops of the small intestine and must be dealt with separately. In each a V-shaped piece of intestine was removed, except the mesenteric portion. The edges were approximated by two rows of continuous stitches, the field of operation cleansed afresh and the sutured portions dropped back into the abdominal cavity. The abdominal wall was closed with deep, silver-wire sutures. The tension was so great on account of the protracted gaping of the wound that the edges could be brought together only by the aid of two pairs of strong volsellum forceps.

The patient made a recovery uneventful from the surgical standpoint, but from the patient's, a most happy relief from a most painful condition.

Case VII. L. P., aged twenty-four, operated August 15, 1897, for a left salpingitis resulting in a fecal fistula.

About eleven weeks afterwards I was asked to see the case and to operate. The fistula was exposed in the ordinary way. Its exact location could not be clearly determined on account of the adhesions. The edges were drawn in with interrupted Lembert sutures in two rows, the omentum drawn down over the site of the suture and the abdominal wound sewed up tight.

The patient made a good recovery. Four months afterwards was reported in good condition.

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SIX CASES OF FECAL FISTULA CLOSED BY OPERATION.

BY J. W. ELLIOT, M.D., BOSTON.

Case I. The patient, a man sixty-eight years old, entered the Massachusetts General Hospital in January, 1894. Ten months previous to entrance he had had an abscess in his left side which was opened and a fecal fistula had remained.

He was in a wretched, emaciated condition with a septic diarrhea and a fecal fistula two inches above the left anterior superior spine of the ilium. There were several sinuses and the muscles had been laid bare by a septic process, the wound being bathed in pus and feces and in a stinking condition.

The sinuses were opened and curetted but pus continued to pocket.

Operation. — On June 8th the sinuses were again slit up and two loops of intestine were found adherent to the opening, one the small intestine, and the other the sigmoid flexure, both with fistulous openings. There were four openings in the large intestine; one admitted the forefinger. No stricture was present. These four openings were closed by one line of sutures, by turning in the intermediate bridges of tissue and stitching the upper edge of the upper hole to the lower edge of the lower hole. The omentum was then fixed over the suture line on the intestine. The sinuses were packed with gauze and provisional sutures placed in the abdominal wall, while the whole wound was packed with gauze. There was no leaking from the intestine. The sinuses and a part of the wound granulated, and were finally scraped and stitched together, uniting them as if by first intention.

The patient was discharged well and has remained so.

Case II. J. M., man, age twenty-five years. On July 10, 1894, I resected four feet of small intestine[1] (jejunum) for gangrene due to occlusion of the mesenteric veins. I then stitched the ends of the intestine into the abdominal wound, thereby making an artificial anus. In about two weeks after the first operation it became evident that the patient was losing flesh on account of the fistula so high up in the digestive tract. The discharge from the bowel was very irritating and was actually digesting the adjacent skin.

On July 27th I freed the ends of the bowel and stitched them together. I found the intestines matted together with endless adhesions so that it was impossible to find smooth peritoneal surfaces. The suture ends therefore lay in a mass of adhesions and the wound was packed with gauze. At the end of a week an irritating stitch was removed from the intestine. At this point a slight leaking of intestinal contents occurred. The wound then closed, leaving a small fistula, but the patient gained flesh rapidly and was able to go about controlling the discharge with a water truss.

On November 16th I did another intestinal resection and completely closed the fistula. At this operation I found that the previous operation had caused a narrowing in the calibre of the bowel. I therefore made the resection wound slanting instead of at right angles to the bowel. The wound was closed without drainage. The patient made a rapid recovery.

Case III. Patient, female, age twenty-two years. In July, 1892, had a severe attack of pain in the right iliac fossa. Remained in bed for three months with a dull pain, and lost much flesh. Pus appeared in the discharges from the bowels and was accompanied with a severe diarrhea. She entered the hospital September, 1893. In October a large abscess in right iliac fossa was opened by Dr. Richardson. The discharge from this soon became fecal and later nearly all the feces came through the fistula. At one time the fistula seemed to grow smaller after being completely dammed up with gauze for several weeks. I first saw her in August, 1894, and the fistula then showed no sign of closing.

Operation.— August 23d. After a tedious dissection of various sinuses running in different directions, a normal appendix was found and removed. The cecum was then with great difficulty dissected from its bed of firm adhesions and on its under side nearly as high up as the colon a fistulous opening was found, and closed with great difficulty, the omentum being fixed as a protective over the suture line. A sinus was found extending a long distance up into the muscles of the back, presumably due to the burrowing of feces when the experiment of closing the external opening was made. The whole wound was packed with gauze. There was no leaking and the patient made a slow but complete recovery.

Case IV. Patient, female, age nineteen years. In January, 1895, Dr. Mumford opened an appendix abscess. In June the patient returned to the hospital with a fecal fistula in the right side which discharged nearly all the contents of the bowel.

Operation. — June 15, 1895. Skin and scar about fistula opening dissected up. Fistula then closed temporarily to prevent flow of feces. Just before opening the peritoneal cavity the wound was disinfected and a clean set of instruments taken. Two large openings high up in cecum found and closed. Fistulous tract entirely removed, and the wound closed without drainage. Prompt recovery.

Case V. Patient was operated on for acute appendicitis by Dr. Newell at the hospital in August, 1895. A fecal fistula resulted.

September 23d. The opening in the bowel was closed by suture. Good recovery.

Case VI. Patient, female, age twenty-nine years. Entered the hospital in June, 1887. Ten months previous to entrance she had had pain in the right iliac fossa and was soon unable to walk, later a pelvic abscess in right side was opened and drained *per vaginam.* Two months later the right tube and ovary were removed. Two weeks later a deep abscess formed on right side, which was opened near the anterior superior spine of the ilium. This resulted in a fecal fistula.

Operation. — September, 1897. The sinus was dissected down to intestine without opening it. Three coils of intestine joined the sinus, a probe in the tract entered two of these coils. These two openings were closed by Lambert sutures and dropped. The wound was then disinfected with peroxide of hydrogen and closed tight without drainage. The general peritoneal cavity was not opened. The wound healed by first intention and the patient made a perfect recovery.

MENIERE'S DISEASE.[1]

BY GEO. CARROLL SMITH, M.D., BOSTON.

I will make the report of a case at present under treatment the introduction of my paper to-night.

The patient is a clergyman, sixty-two years old; of good family history, barring two brothers who died of malnutrition and two sisters who died underfed. Childhood not instructive; at twenty-eight had nervous prostration from overstudy in the university and began to have eye troubles, especially astigmatism. Has since had some one of the muscles of one eye cut twenty-seven times by a New York specialist. For thirty years has been afflicted at times with nervous dyspepsia and constipation. Present illness began last April while he was sitting one evening conversing in the library, feeling as well as usual, when suddenly he felt as though he was seized by some power and hurled at a distance of several feet to the floor, striking with great force on his left side. He was momentarily unconscious, but he arose with the assistance of a friend and tried to walk, but was unable to because of vertigo, and sought refuge on a couch, when vomiting began and continued at intervals all night, as did the vertigo, notwithstanding the recumbent position.

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[1] Annals of Surgery, January, 1895.

[1] Read before the Suffolk District Medical Society at its Annual Meeting, April 30, 1898.

Added to these symptoms a most disagreeable noise in the head became apparent, sometimes hissing in character, and sometimes puffing like a locomotive. The next day he noticed he was deaf in the left ear, and although able to walk about with a cane he was dizzy and had some nausea, and a continuous tinnitus. His local physician pronounced it a bilious attack, and with cholagogues his dizziness subsided, and he had no further trouble for five weeks, when he had a similar though much milder attack, which was repeated the following week. He then sought the advice of a disciple of Salisbury, and was told that he was suffering with stomach disease. He was accordingly given the strict Salisbury diet, and reduced thirty-eight pounds in weight during the next five months. During this time he had six seizures similar to the last, never losing consciousness, but being often thrown suddenly to the ground, after which there was always nausea and often vomiting and more tinnitus. During all this time the noises in the head were continuous and sometimes much exaggerated at the time of the fall. The deafness though incomplete has never improved since the first seizure.

Aside from the weakness engendered by his effeminating diet he is comfortable during the intervals. No headache or visual disturbances. The physical examination reveals a pale, cadaveric-looking man of medium size, about twenty-five pounds under weight. Slight fibrillary twitchings about the face. No impairment of other cranial nerves except the left acousticus could be found. Arteries moderately sclerotic; heart weak but otherwise normal; lungs and abdominal organs normal; throat, eustachian tube, external auditory canal and tympanum normal. He never had middle-ear catarrh. No papillary changes.

You will all recognize the picture as classical of Meniere's disease. In 1861, Meniere first described this symptom-complex, and showed in his case at autopsy that it was due to disease of the labyrinth. He found a reddish plastic exudate into the labyrinth.

During the few years following his cases several other autopsies corroborated his view, and Fluorens found that he could produce the Meniere symptom experimentally by disturbance of the normal function of the labyrinth. Hillairet was the first to promulgate the idea that an isolated lesion of the acoustic nerve could cause the same symptom-complex, and Alt recently reported a case of leukemia with autopsy in which the trias was most marked. His patient was suddenly seized with noises in the head and vertigo, and fell to the floor losing consciousness. He became completely deaf in the left ear and the hearing was impaired in the right.

Professor Weichselbaum made the post-mortem and found leukemia myelo-lienale. Obersteiner found by microscopical examination numerous leukemic spots in the intramedullary course of the acousticus, and in both the lateral roots well-marked leukemic infiltrations; especially where the two roots come together, the round-cell infiltration was marked. The pia at this point was thickened and permeated with small cells, lymphocytes with well-stained nuclei. Slight infiltration was found in the region of the right acoustic. The fibres of the left nerve were atrophied slightly. The fourth separate nuclei of the eighth, the posterior tubercular quadrigemina, cerebellum and temporal lobe showed pathological change, and there was no lesion of other cranial nerves and no hemorrhage or trace of an old one. The labyrinth and middle ear were examined by Kaufmann and found normal. The finest changes in the end distributions of the eighth nerve could not be ruled out. This is the only case of Meniere's disease that I can find reported in which the autopsy showed a lesion of the *nerve trunk*, undoubtedly because the examination of the nerve in its entire course was omitted because a lesion was found in the labyrinth or in the adjacent brain tissue, abscesses, tumors, etc. Gruber, who has made a careful examination of one hundred cases, says that a secretory exudate into the labyrinth is much oftener found at autopsy than hemorrhage, and this explains why the disease is often met in alcoholics and divers, whose intracerebral pressure undergoes sudden and extensive changes, as well as in cerebral affections and in disease of the middle ear.

Meniere held that the disease which bears his name was an affection of the semicircular canals. We now know that these canals are concerned in equilibration and that the vestibular nerve supplying their ampullæ may be affected without the hearing being impaired. But the symptom-complex, as he observed it, must be due to an impairment of function of both the vestibular and cochlear nerves. Such impairment may originate within the internal ear or without.

Among the causes originating in the labyrinth are: labyrinthitis, syphilis, leukemia, anemia, hyperemia, extravasation, trauma, toxemia. *Causes without* are affections of the middle ear and wax in the external ear, on the one side, and disease of the nerve trunk and nuclei and meningitis, tumors, abscesses and diseases of the seventh and fifth nerves, on the other. And we occasionally see the trias occurring in hysteria and epilepsy in the form of an aura, and in migraine. The latter are termed by Gilles de la Tourette as pseudo-Meniere's disease, on account of the Meniere symptom occurring in so many different affections. Many authors have thought to drop the disease called Meniere's, but it is perhaps better to restrict Meniere's disease to vertigo and its accompaniments due to disease or injury of the labyrinth, and I shall ask your attention to the symptoms which such a lesion presents.

VERTIGO.

The vertigo shows the greatest variation in character. It may be paroxysmal or continuous. When continuous, it is usually slight in character and does not prevent the patient from walking about. There may, however, be intervals of apparent exacerbation when the vertigo becomes more marked and the patient is obliged to seize hold of an object to keep from falling. The attack may be excited by sudden turning or changing the position of the head, or by a paroxysm of coughing. On the other hand, the seizure comes on during sleep and awakens the patient. In other cases vertigo only appears during a paroxysm, and these paroxysms may recur at intervals of days, months or years. In other cases the vertigo is so severe and continuous as to compel the patient to remain in bed all the time, and to frequently have his position changed, as his dizziness is persistent even in the recumbent position, suggesting more affection of some one or two of the canals. Frank'l Hochwart suggests the name of "Status Meniericus" for the severe form. The vertigo may be subjective, objective, or both. When the patient feels he is turning or falling, he usually turns or falls in the direction of the affected ear, and when both ears are affected, toward the one most affected. Combined with this lateral tendency there is often a strong inclination to go forward or backward. When external objects seem to move, it is most often in the direction of the subjective sensations though not always. These sudden, irresistible impulses to forward movement occasion the sensation in the patient so often described as that of being hurled and landed at a distance from the place of seizure. If the patient loses consciousness it is only for a moment, and in cases of intense subjective vertigo and sudden onset styled the apoplectic form. No dazed feeling follows the attack as in epilepsy, but the vertigo may continue for a few hours or longer. When severe it is generally followed by vomiting, pallor of countenance and cold sweat. After the stomach is emptied bile appears as usual, and this is regarded as sufficient proof of biliousness. Indigestion, of course, follows for a day or two.

Ocular symptoms are present in some cases reported by Gowers, Mendel and Mills. An increase of pressure in the labyrinth as well as firm pressure of the antitragus over the meatus may cause nystagmus, and one case of nystagmus is reported which lasted ten years after the affection was cured. In this case the labyrinthal disease was secondary to middle-ear affection. Diplopia has been reported as an occasional symptom, probably due to the nystagmus being unequal in the two eyes.

DEAFNESS.

Deafness is usually one-sided; is always present in some degree, but rarely ever complete, depending, of course, upon the degree of affection of the cochlear branch, or the amount of irritation which the cortical centre of hearing in the superior temporal convolution has received from the disease going on in the labyrinth. It is well to remember that cases reported by Frank'l Hochwart revealed at autopsy labyrinthal disease, without ever having had attacks of vertigo, and if the vestibular branch can escape, in all probability the cochlear trunk may at times escape, but then our symptom-complex would be incomplete.

TINNITUS.

Tinnitus assumes a great variety of forms, from a mere soft sighing or whistling to the puffing of a locomotive or the letting off of steam. It varies much in pitch and intensity, and does not assume the form of tunes or words. It may be very loud or rumbling, throbbing or beating in character, and may be synchronous with the heart's action.

Tunes and words are suggestive of cortical lesion, but patients falling asleep may often imagine they hear music and words, and it is possible that tinnitus may be the beginning of auditory hallucinations. The location of the morbid sound may be in the ear or in any other part of the brain. If both ears are involved it is heard in both and may be louder in one than in the other.

Tinnitus might be called a paresthesia of the nerve of hearing and may be due to noise within or without the labyrinth. Excessive stimulation of the acoustic causes it, as well as disease in the labyrinth, the nuclei in the medulla or in the cortical ganglia. This symptom, of course, renders the deafness marked and will never cease unless complete deafness occurs.

To make a diagnosis of Meniere's disease it is necessary, first, to rule out disease of the external and middle ear, remembering that the Meniere symptom-complex often occurs as a symptom of the latter, and that the two may co-exist. Second, to exclude brain lesions, meningitis, cerebral tumors, especially of the pons medulla cerebellum and posterior lobe of the cerebrum. The mind is undisturbed in uncomplicated Meniere's disease, and other cranial nerves, as a rule, escape or are only partially affected. There is no paresis of the extremities. The absence of headache is a marked symptom, while in the afore-mentioned cerebral affections some one or more of the above symptoms stamps the affection as extra labyrinthal. Frank'l Hochwart reports two cases in which the seventh nerve was completely paralyzed, but in these cases he thought the disease originated in the rupture of a small aneurism of a branch of the basilar artery. Mendel explains the occasional affections of some of the eye muscles in Meniere's disease, by the circulatory changes through disturbance of the internal auditory artery before it enters the internal auditory meatus, by changed pressure conditions of the cerebrospinal fluid, including variations in the endolymph of the labyrinth and by simultaneous affections of the arteries of the eye muscles.

Perhaps Meniere's disease occurring in the apoplectic variety is most liable of being mistaken for encephalic apoplexy. But when we remember that the latter affection is common, while the former is rare, and find a diseased heart or atheromatous vessels with a hemiplegia, or our patient unconscious or in convulsions, we can with little difficulty rule out Meniere's disease.

Cerebellar affections often give us the same form of ataxia in the gait and vertigo, but we rarely have the tinnitus and deafness and we usually do have optic atrophy, or hemianopsia, headache and paresis of the extremities, with mental impairment.

Syphilis rarely affects the labyrinth first, but generally secondarily, through a basilar meningitis. It is a question if ever we get the Meniere symptom through a primary affection of the bulbar nuclei, as formerly believed, in an analogous way to that in which the nuclei of the third, fourth and sixth cranial nerves are so often invaded by syphilis. (Demonstration of nuclei.)

Hysteria and neurasthenia can be easily differentiated by their history and present stigmata.

PROGNOSIS.

The prognosis varies according to the cause. When due to acute inflammation or when in the apoplectic form the prognosis is very good. Kennefick reports a case illustrating the apoplectic form completely cured. As to the duration of life in all forms the prognosis is good. The paroxysmal form, if treated early, may recover, but rarely completely. Some disturbance of equilibrium usually persists, especially so long as the deafness remains incomplete, and the tinnitus, of course, is permanent. The hearing, except in the curable cases, does not improve, and yet rarely is absolutely lost.

TREATMENT.

Charcot and Raymond have advocated the intermittent use of quinine ten to fifteen grains per day for fifteen days; then wait eight days and repeat for several months. Gowers likes the salicyl compounds better. The Germans use both together with galvanization and faradism.

When due to some constitutional affection, the remedies must be directed to the diathesis, and the iodides and nitro-glycerin may be efficient. When there is evidence of cortical excitement, bromide is indicated, and in the debilitated, arsenic is often of service.

BIBLIOGRAPHY.

Mendel. Berlin. klin. Woch., 1895, xxxii, 557.
Frank'l Hochwart. Wien. med. Presse, 1895, xxxvi, 721.
Frank'l Hochwart. Wien. med. Woch., 1895, xlv, 985.
Burnett. International Medical Magazine, 1894–95, iii, 343.
Grnber. Medical Press and Circular, London, 1896, lxi, 28.
Hallock. New York Journal of Nervous and Mental Diseases, 1897, xxiii, 779.
Burnett. American Journal of Medical Sciences, Philadelphia, 1896, cxii, 400.
Kennefick. New York Medical Record. 1896, i, 122.
Alt. Wien. klin. Woch., 1896, ix, 849, 851.
Gowers. Treatise on Nervous System.
Mitls. Loc. cit.
Oppenheim. Loc. cit.

Clinical Department.

MASSACHUSETTS GENERAL HOSPITAL.

(Concluded from No. 20, p. 493.)

Regular Clinical Meeting of the Medical Board, Friday, April 8, 1898, Dr. C. B. Porter in the chair.

Dr. C. B. Porter reported a case of

CARBUNCLE OF NECK.

Frank Brown, aged thirty-five years. Nine days ago, pimple appeared on back of patient's neck. This was poulticed three days without relief, then other pimples appeared about original one, while swelling and redness of neck increased.

Poultices continued till yesterday, when patient came to out-patient department for first time. Pain not extreme. Sleep has been disturbed for past nine nights from inability to get head into comfortable position. Appetite has been good — thinks he has had no fever.

Looks tired but not very ill. Back of neck much swollen so that neck in profile protrudes instead of receding. Just below hair is an area four inches broad transversely and two inches longitudinally, where the skin has sloughed in places. This is reddened, and pus can be expressed by gentle pressure from several small openings. Peroxide syringing followed by sterile water. Corrosive poultice 1–1,500.

February 4th. Temperature last night 104°, but good night, waking occasionally from pain. Slight extension toward left ear.

February 6th. Much more pus discharging. Transverse incision three inches long with scissors through centre of carbuncle. Poultice.

February 7th. One ounce of pus expressed this morning. Large amount of sloughing material cut away. Red surfaces beginning to show. Temperature still up at night.

February 9th. Operation by Dr. C. B. Porter, under Schleich Mixture. Semicircular incision with knife below carbuncle, at sufficient distance to include all sloughing tissue. Similar incision above. Thorough curettage of walls and base of area thus excavated about four inches in diameter. Wound cleansed with peroxide and again curetted; bleeding controlled by pressure; wound packed firmly with iodoform gauze; dry dressing.

February 10th. Packing changed; no extension.

February 12th. Few superficial sloughs trimmed off each day; temperature normal; patient has no pain.

February 16th. Clean granulating surface; edges pulled together with adhesive plaster; no subjective symptoms.

February 19th. Granulating surface growing smaller under strapping.

February 23d. Healthy granulating spot three by two inches ready for skin graft.

February 24th. Thiersch grafts from upper arm; Thomas collar.

March 2d. Dressing taken down; grafts adherent; surface well covered.

March 7th. Thiersch graft for remaining granulating surface.

March 11th. Only few grafts taken.

March 19th. Not much progress.

March 27th. In a stationary condition.

April 4th. Skin closing in steadily.

April 6th. Three very small granulating spots, everything else healed. Discharged relieved.

ADENO-CARCINOMA OF RECTUM.

Dr. A. T. Cabot showed a specimen of adeno-carcinoma of the rectum. It was a cauliflower-like growth, as large as a small fist, with a rather narrow pedicle, and grew from the anterior rectal wall. The rectum was exposed by Kraske's method, the lower portion of the sacrum being removed, and the bowel was opened by a longitudinal incision in its posterior wall. The tumor was drawn out through this posterior opening, and its pedicle with the neighboring portion of the rectal wall was sewn through and through with a cobbler's stitch before the growth was cut off. In this way the rectal wall was closed and there was no hemorrhage. The tumor was situated over that part of the rectum covered by peritoneum. The method of stitching brought the peritoneal surfaces on the wall of the bowel snugly together and insured a satisfactory closure of the peritoneum by adhesion. The subsequent history of this patient was thoroughly satisfactory, convalescence being uninterrupted.

Dr. Cabot said that this was the third case in which he had removed a polypoid growth in this manner, always with satisfactory result. He preferred, when the operation involved the peritoneum, to leave the posterior incision open to prevent any fecal accumulation in the bowel while the wound in its wall was healing. This opening is readily closed later.

Dr. Cabot also showed the calculi from a case of recurrence of stone in the bladder which illustrated the fact that when stone in the bladder is constantly recuring after thoroughly done litholapaxies, one may pretty safely conclude that there must be some cause which is constantly acting to lead to the re-formation of stone. This patient was an old physician who had been operated upon in this hospital twice before by litholapaxy. His history was a curious one in that he used the catheter from the time he was twenty-five. During the Seven Days' Battle before Richmond and the long marches at that time he had to hold his water for a very long time, and when he finally tried to pass it he could not do so, and required the use of a catheter. The catheter was awkwardly passed, a good deal of bleeding ensued, the bladder never recovered expulsive power, and he has had to use the catheter ever since. When he appeared with another stone this year, he was told that he had better have a suprapubic incision to find the cause of the repeated stone formation if possible and remove it. This was done and after the removal of a calculus that was loose in the bladder at first nothing more could be found to account for the frequent recurrence of stone. On close search, however, a small crumb of stone was felt upon the bladder wall which was found to be a little point of calcareous matter projecting from a pocket which contained quite a calculus. The neck of this little pocket was so narrow that it was with a good deal of difficulty the calcareous matter could be dug out after breaking it up.

This case emphasizes the importance in these cases of recurrence of stone of doing an operation which will enable you to make a thorough examination and remove the cause.

Another case that was in the wards at the same time further illustrated this point. The patient had had an obstructing prostate for a long time, and had not passed any urine through the urethra for nine years. The stones in this case were formed by incrustation upon a prominent third lobe which was removed by suprapubic incision and the patient went out of the hospital some four or five weeks later passing his urine naturally, having about two ounces of residual urine, which was a great advance over the previous condition when he could not pass any part of the urine. In answer to a question as to how the pocket was treated, Dr. Cabot said he curetted it with great care at the time of the operation to get the last bit of stone out, and then kept the suprapubic opening patent a longer time than usual, and finally putting a litholapaxy tube in through the urethra with a long glass tube carried down to the base of the bladder where the pocket was; a careful washing of that region was done to remove any crumbs of calcareous matter which might have settled back into the pocket.

Dr. Cabot also spoke of a case which illustrates the difficulty of diagnosis in appendicitis. The patient was a young Italian women who had always been in good health; was never jaundiced and had never suffered from pain in the abdomen except ten years ago when, after childbirth, she had what she called inflammation of the bowels. Her present difficulty began on a Sunday afternoon when she was seized with severe pain in the right iliac region. This was followed by vomiting and she shortly had a chill. She entered the hospital on the following Tuesday, at which time she was suffering much from pain in the abdomen, had a leucocytosis of 17,000, and was a very sick-looking woman, with dry mouth, scabs along the lips and coated tongue.

At the time of Dr. Cabot's arrival she was already prepared for operation and after satisfying himself that the greater part of the pain was in the right iliac region, she was etherized and the abdomen was opened along the linear semilunaris and a perfectly normal appendix was found. A few slight adhesions existed between the omentum and abdominal wall. Following this slight evidence of inflammation upward, the gall-bladder was found covered with adherent omentum and on separating this the surface of the gall-bladder was found to be discolored and on the point of sloughing through in one or two places. After walling the abdomen off with gauze the gall-bladder was opened and a gall-stone which lay free in its cavity was removed. It was then found that another gall-stone was fixed in the cystic duct beyond the gall-bladder. After trying in vain for a considerable time to remove this through the gall-bladder, incision was made in the duct externally and the stone was removed. A drainage tube was put in the gall-bladder and gauze packed over the opening in the duct which was too deeply situated to be sutured without a great and, in the patient's condition, a dangerous prolongation of the operation.

In this case the history did not point to gall-stones, but had the patient been under observation for a longer time the diagnosis could have been made by the examintion of the urine, which it was afterwards learned from the nurse was of a dark coffee color. Dr. Cabot said that in other cases in which he had been puzzled by a similar condition, the urine had afforded the proper solution of the question. The subsequent history of the patient was thoroughly satisfactory, the woman having made a good recovery.

Dr. Warren: The case of hernia reminds me of a case I had many years ago. The patient said she had no hernia one day and the next had a hernia about one-half the size of the one shown in the photograph, and certain symptoms made it seem as if it might be strangulated. I operated and found a large thickened hydrocele of the cord extending down into the labium. Her physician declared that this had formed within twenty-four to forty-eight hours. It is worth mentioning from point of view of differential diagnosis.

In regard to the operations for aneurism I think now we have so perfect command of the asepsis of the limb we have got to revise all the old rules about operating for aneurism. Hunter's method of making a cut at the apex of Scarpa's triangle and tying the femoral, of course was a very good substitute for the old operation which was laying open the tumor and getting out the clot, which involved a great deal of suppuration and sepsis. But the danger of Hunter's operation lies in the circulation of the foot. I don't see why under present conditions of asepsis we should leave a large disorganized mass in the limb which must remain a source of peril to the patient afterwards. My experience has been that in elderly people with diseased arteries when we attack the main vessel we put the life of the limb in great jeopardy, and when the limb does not become gangrenous it is apt to be useless afterwards. In one case in which I finally amputated for neuralgia and generally disability of the limb I found posterior tibial muscles in a state of fatty degeneration. Therefore I believe in this local operation for gangrene.

In a case operated upon this winter in a young man for traumatic aneurism I excised the whole sac in the femoral region and got union by first intention without the least trouble. I think in these long-standing aneurisms we get a certain amount of collateral circulation which helps us out if we give the collateral circulation a good chance by excision of the sac and removal of pressure.

CEREBRO-SPINAL MENINGITIS.

Dr. Cutler: In this small boy sent in the other day we made the diagnosis of cerebro-spinal meningitis. Dr. C. F. Folsom told me some time ago that in the early stages of cerebro-spinal meningitis he obtained great benefit from the free use of ergot. This boy came in with high fever and a great deal of pain in the front and top of his head and back of the neck, retracted head and pain in the left side of his chest. He had retracted stiff neck and could be lifted by putting the hand under the head, lifted right up as if he were a block of wood. He had internal strabismus of the right eye of two days' duration, and the eye you see still is not quite right. He was delirious and had been so for a few hours; he could be roused a little, but not much. He received quite large doses of ergot every hour for the first day, and he materially improved so that he became somewhat better. I increased the dose during the second and third days and by that time he got decidedly better and his temperature took the drop shown in the temperature chart. He had a leucocytosis of about 23,000. That, however, rapidly disappeared and the boy is now practically well. Another case I had in the hospital earlier in the season, I think in the month of September, came in also at an early stage of the disease, and he became comatose while we had him under observation the first twenty-four hours. We thought he might as well die from ergot as anything else and we gave him large doses. He commenced to get better, and the next day was very much better, and by three days later was practically well. Doubtless many of the gentlemen have seen him. He is a waiter at Marliave's restaurant.

To this boy we gave ten minims of the fluid extract once an hour. This boy had none of the skin eruptions you sometimes see in cerebro-spinal meningitis nor did he have herpes.

Afterwards we had another case which presented these same symptoms. He did have herpes and was beginning to have strabismus. His case had been of two or three days' longer duration than this boy's. It was rather late to begin the treatment, but as a control experiment we gave ergot to him. It did not do him the slightest good. A post-mortem was performed and the diagnosis was found to be correct.

I have a patient, a laboring man in a hide factory, who shows an epigastric hernia. It is very small, right up in upper part of the epigastrium, and exquisitely tender. He complains of a great deal of pain in the epigastrium and inability to do his work. He finds he is chiefly disturbed when he leans over; he cannot pick up anything it hurts him so. When you put him down on his side and make him bring his head and knees together you find that the hernia comes out. If you make him cough or make a straining effort it does not appear, but make him lie down on the floor and bring himself together, it comes out. He has no trouble with his digestion as many of these patients do have.

I also want to show a culture of the bacillus mallei made by Mr. Oscar Richardson of the pathological laboratory for me in a case I saw in consultation the last part of December. I was asked to go out into the country and bring materials for doing something to the pleura. I went out and the first thing I saw was a man who, to be sure, was breathing rather rapidly, but had a most striking eruption on the face, sort of tubercle affairs about the size of the end of the little finger or the size of the end of the thumb. These were on a red base, elastic to the feel and many of them capped by a suppurating sort of a sac which suggests either a very queer kind of chicken pox or some sort of bastard or queer kind of small-pox. He did not look like a small-pox patient, and these things were irregular in their outline and shape and had solid contents and red contents and suppurating places and my attention was taken away from the pleural sac and directed towards the eruption. He evidently was suffering from some pyemic condition, and I could think of nothing else than glanders. I got some of the pus and brought it into the hospital and Mr. Richardson made a culture of it. That is a photograph of the pus. I made the diagnosis, and for a few days in the laboratory it seemed uncertain whether that was glanders or not. They finally injected some of this material into a male guinea-pig, and he died from glanders within a week. I made the diagnosis before I left because I could not see what else it could be. I looked into the throat because the man was having some difficulty in breathing, and saw a queer looking thing. It looked as if a person had taken a syringe loaded full of melted paraffine and squirted into his throat the paraffine, and it had adhered in drops all around, and had done nothing except stay there. It was mother-of-pearl color, no redness underneath it. I did not have even a knitting needle to cut anything away with and my time was limited. I saw a portion adherent to the uvula which hung down. I should say there was a piece of this material which looked very much like something which lay on the outside, as if it were an exudative, fibrinous mass. I looked into his nose, no redness, no discharge, no odor. He had stenosis of the trachea or larynx, and there was no breaking down. What this thing was I did not know. I presume it was something which was caused by the low organism of glanders and it had not commenced to soften, but the man had a fever which was up and down as you see it in pyemia, swollen joints and reddened joints and an eruption over him which very rapidly increased. This man died on the sixteenth day. It was found there had been a case of glanders in the stable where this man worked a year and a half ago. There was no local lesion that could be determined, and apparently he had something which attacked him first in his lung. It was apparently one of the inhalation forms.

Dr. Putnam: I cannot help expressing profound scepticism as to the effect of ergot. I should like to know whether there is any satisfactory theory as to its action?

Dr. Cutler: In reply to Dr. Putnam's second question, it seemed as if the child grew better pretty suddenly, and that was true also in the case of the man who was getting worse and we thought he might as well die of ergot as anything else. He is alive and well now. Dr. Folsom's notion was that it diminished the amount of blood in the brain, diminished congestion. He recommended the drug only during the early stages, the stage of congestion. I do not see what effect it would have on the low organism I am sure, unless by a great contraction of the arterioles it cut off its nutrition, and, so to speak, starved it.

Dr. Rotch: I would like to mention another case supposed to be cerebro-spinal meningitis in a child under my care where the symptoms were very obscure, and did not point towards any special disease and where the value of lumbar puncture seemed to be very marked. The only symptom was great ranges in temperature, and yet no retraction of the head or any special symptoms pointing to cerebro-spinal meningitis. The blood was carefully examined for malaria and finally lumbar puncture was made and the organism found. Subsequently it followed more the course of cerebro-spinal meningitis.

Dr. Walton: It occurs to me, Mr. President, that these cases of rapid onset with marked symptoms giving way to rapid improvement are perhaps cases of the *serous* meningitis described by Quincke. Apparently there have been a number of these in this epidemic; they may be characterized by opisthotonos, strabismus, stupor running into coma, and fairly high fever, yet within three or four days the symptoms may rapidly subside and within a week the patient be practically well. The fact that ergot failed to work in the case on which the autopsy was made and cerebro-spinal meningitis established, would rather tend to show that the cases belonged to a different category, though it is not safe to draw conclusions on such meagre therapeutic data; apart from the question of susceptibility to treatment, a rapid convalescence should perhaps always suggest the serous form of meningitis.

Dr. Warren: These tumors, described by Dr. Coolidge, have interested me a long time. I remember seeing Langenbeck operate on one in 1869 by osteoplastic resection of the upper jaw and calling attention to their existence in young males almost exclusively. I had an opportunity finally to operate, but when the opportunity came I decided to adopt R. P. Lincoln's method, which is practically what Dr. Coolidge has described, only it was done with galvano-cautery wire. The tumor bled very extensively and the patient was very anemic, and that seems to be the danger of these sarcomatous growths; even the fibromata are very vascular. This was successfully removed in this way and had those anatomical peculiarities. Dr. Hooper for years afterwards semi-annually removed a bottle of adenoid or sarcomatous tissue from the vault of the pharynx, and finally one day I suggested that it might be necessary to do Langenbeck's operation, but he had then passed the age of twenty-one and some growth which had been found had recently disappeared. Dr. Lincoln, I think, calls attention to the fact that if these patients can be kept in good condition until the bones have ossified then these processes subside. I had a similar experience with another case in which I performed an osteoplastic resection; later several operations were performed by other surgeons. I sent for the patient several years afterwards and meantime he had reached adult age, and for the last six months the growth had been rapidly disappearing.

Dr. Langmaid: Ordinarily a myxomatous growth does not bleed unless it is snared or pulled out, but you cannot touch one of these sarcomatous growths — it is a point of diagnosis — without getting almost immediately some prune-juice colored exudate. Whenever that occurs a brisk hemorrhage is likely to follow attempts at removal.

Dr. Rotch: I have a few words to say about Dr. Coolidge's interesting case of escape of cerebro-spinal fluid through the nose. It is interesting in reference to the different stages of development in the early periods of life either in the weak places which may exist in young children's skulls or such openings as the petro-squamosal suture which is such a source of danger to young children until it has closed. These cases of escape of fluid should be put on record.

I wish to speak in reference to a case of apparent loss of cerebro-spinal fluid, sudden and in large amount. I saw the case with Dr. Broughton of Jamaica Plain. I did not know this case was to be reported by Dr. Coolidge and therefore I am not prepared to give all the details. The infant was healthy at birth and had a seemingly perfectly formed head. At about the fourth or fifth month something happened in the night. In the morning the pillow was found wet. No examination of the fluid could be made. The fluid evidently escaped from its brain. In the morning the head was collapsed and it had become microcephalic and evidently idiotic. I believe it is still unproved how this fluid gets through and therefore this case of Dr. Coolidge's is very interesting showing how it can come. The child is an idiot to-day. There were no symptoms of meningitis. It is possible the child had a malformed brain and that the normal shape of the head was due to distention by fluid.

Dr. Walton: The objection has been urged to the possibility of cerebro-spinal fluid escaping in this way, that in case there was an opening into the cranial cavity the danger of infection would be so great that meningitis would supervene. It seems to me, however, there is enough evidence pointing to the cerebro-spinal origin of this fluid to counteract this objection, and in point of fact a local meningitis at the base did occur in the one other case coming under my observation, the lesion being limited to the region of the optic commissure and producing optic neuritis and blindness. Tilleau reported two cases identical in symptoms with this case of Dr. Coolidge, and was satisfied that the fluid was cerebro-spinal. When the patients were upright or recumbent no fluid escaped, but as soon as the head was bent forward there was a steady escape as long as the head remained in that position. One of these patients was an adult, the other a child. In both trauma had taken place and Tilleau fancied that fracture of the cribriform plate had taken place. This theory does not seem quite satisfactory, and it occurred to Dr. Brooks and myself on looking up the subject in connection with the case I have mentioned, that in all these cases there is perhaps a developmental defect leaving an abnormal opening between the brain and the naso-pharynx, an idea which Dr. Rotch's case would certainly tend to favor. Why the symptoms should first appear in later life in this event, it is a little hard to understand, but I suppose it is not impossible that such changes should take place in the soft parts, either after trauma, or as a result of inflammation, as to open up a passage previously closed. Change in position must mean one of two things, either that the flow had taken place constantly, but while the patient is erect he swallows the slowly-collecting fluid, whereas when he bends forward the fluid follows the line of least resistance and passes directly out through the nose, or the fluid is not always running, but there is a valve-like action of the soft parts in some way altered by bending the head forward.

Cure for Military Nostalgia. — Dr. Harrison, a colored physician of Wichita, Kan., has received from a member of one of the colored regiments in Cuba a letter stating that many of his comrades have forgotten home and former heart ties sufficiently to fall in love with and marry Cuban and half-breed Spanish girls. This letter has caused consternation among the colored women of Wichita who had husbands or sweethearts among these troops. — *Medical News.*

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D. AND W. D. HALL, M.D.

(Concluded from No. 20, p. 496.)

HEMIANOPIA, WITH ESPECIAL REFERENCE TO ITS TRANSIENT VARIETIES.

Wilfred Harris's[12] interesting and important contribution was originally intended to deal with several extraordinary cases of transient hemianopia associated with unilateral convulsions, such cases going far to prove a theory of cortical representation of the macula and that the macula is innervated on the same plan as the rest of the retina. He was led to extend the original title of the paper by the close analogy which such cases bear to epilepsy on the one hand and migraine on the other and by the association of hallucinations in the blind field with hemianopia. His conclusions are: (1) Hemianopia, rarely binasal, more commonly lateral and left sides, with accompanying restriction of the remaining half-fields, may occur as a temporary phenomenon in hysteria. (2) Hemianopia due to a vascular lesion of the cuneus, of sudden onset, may commence with a marked loss of sight, sometimes amounting to complete amaurosis, and due probably to inhibition of the remaining half-vision centre. (3) The cortical half-vision centres are not subdivided into centres for color, light and form respectively and hemichromatopsia may be due to a lesion anywhere in the visual path between the chiasm and the cortex. (4) Quadrantic hemianopia though strongly suggestive of a cortical lesion may sometimes be due to a lesion of the internal capsule. (5) The macular region of the retina is supplied with nerve-fibres on the same plan as the rest of the retina, that is, each side of it from the corresponding side of the brain. In all cases of absolute transient hemianopia the dividing line between the blind and seeing halves passes through the fixation point. (6) The cortical centre for the macula region in each cuneus is less liable to complete destruction and recovers earlier than the rest of the half-vision centre. (7) Cases of persistent hemianopia in which the dividing line passes to one side of the fixation point, leaving it in the second half, are to be accounted for either (*a*) by the escape or partial recovery of the cortical centre of the macula, or (*b*) by the acquirement by education of a new fixation point in the retina. (8) Hemianopic visual spectra of low elaboration, such as red or green lights, or the varieties of scintillating scotoma in migraine, are caused by a discharge in the half-vision centre in the cuneus. (9) Complex visual phenomena of hemianopic type, such as faces, animals, etc., are elaborated in a still higher visual centre, which possibly is in the angular gyrus; their occurrence in the half-field only being due to reflex irritation from a lesion generally in or near the cuneus, but which may be in the optic radiations or optic tract. (10) Double hemianopia does not necessarily cause permanent amaurosis, in many cases the return of a small area of central vision indicating the escape or recovery of the cortical centre of the macula in the cuneus on each side. (11) The hemianopia of migraine is due to an epileptic discharge in the half-vision centre of one side. (12) In many cases an epileptic discharge may originate in or near the half-vision centre on one side, in some cases proceeding no further beyond producing temporary hemianopia, in others producing a typical epileptic fit, and again in others giving rise to unilateral convulsions without loss of consciousness. (13) Transient hemianopia in such attacks may last for twenty-four hours or longer, and may be due to vascular softening adjacent to but not involving the visual centre or path. (14) Transient hemianopia is rare in ordinary Jacksonian epilepsy. and is not liable to occur unless the half-vision centre be (*a*) already slightly damaged, or (*b*) hypersensitive and prone to spontaneous discharge as in migraine. (15) Such transient hemianopia not unfrequently accompanies unilateral convulsions in general paralysis, and may possibly occur in uremia. (16) The auditory centre may be similarly paralyzed through spread of the epileptic discharge.

THE INFLUENCE OF MYDRIATICS AND MYOTICS UPON THE GLAUCOMATOUS EYE.

A recent paper of Jackson's[13] serves as the basis for the following conclusions: although mydriatics should not generally be applied to eyes which are on the verge of glaucoma still the risk should not be guarded against by the fixing of a definite age-limit before which it is safe and after which it is not safe to use them. If an attack should supervene an iridectomy should be done immediately as he considers the results as even better than in those cases in which the iridectomy has been done in cases which have started up spontaneously. He would even in doubtful cases use homatropine as a test after having carefully explained to the patient. If the iridectomy has been refused use eserine and if possible tap the anterior chamber in those cases where the mydriatic has a longer effect than homatropine. Where the synechiæ are so strong and extensive that there can be no obliteration of the angle, and especially if eserine causes irritation, atropine may be used with benefit. Myotics are only of benefit in the earlier stages of the disease and where the pupil is movable; otherwise they do harm. If an iridectomy cannot be done the myotics may be depended on as long as they do good, but the time will come in the majority of cases when after their use the effect is less favorable, as shown by falling off in central vision or the field, and from that time on their continuance is of little use.

SEPARATION OF THE RETINA.

Horstmann[14] in thirty-five cases of separation of the retina had complete recovery of sight in five. He concludes that every case of spontaneous detachment is due to disease of the uveal tract, and is brought about by transudation of fluid from blood-vessels which afterwards passes beneath the retina. Spontaneous cures were only observed in those cases in which the retina had retained the perception of light, and in which the subretinal exudate had not become absorbed; neither was the detached portion torn nor was there alteration in the interocular tension. In cases where the detached portion resumed its normal condition but remained functionless, the subretinal exudate became absorbed but there was no tear or diminution in the tension. Prognosis very grave in cases of tear associated with minus tension. All operations are useless, the least harmful being scleral puncture.

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[12] Brain, Part lxxix, Autumn, 1897.

[13] American Journal of Medical Science, April, 1898.

[14] Archiv. f. Augenhkde., xxiv.

SYPHILITIC DISEASES OF THE EYE AND ITS APPENDAGES.

Mr. Henry Juler[15] during one of the Harveian lectures for 1897, made the following statements regarding chancre of the eyelid and its differential diagnosis. The pre-auricular gland is always enlarged, firm and painless and not tender on pressure. This absence of tenderness has a diagnostic significance. The condition may be mistaken for rodent ulcer, epithelioma, lupus, chalazion, hordeolum and tuberculous ulcer of the palpebral conjunctiva. Chancre of the eyelid is always accompanied by enlargement and induration of the pre-auricular or submaxillary gland, usually both; the absence therefore of glandular enlargement will exclude probably rodent ulcer, tertiary syphilitic ulcer, lupus and in most cases chalazion and hordeolum. By the time that an epithelioma had progressed far enough to cause glandular enlargement, a syphilitic primary lesion would have healed and secondary symptoms would have appeared. Swollen glands accompanying extensive chalazia are tender and by other appearances indicate acute lymphadenitis. The pre-auricular gland which accompanies the tuberculous ulcer is firm and swollen and the ulcer is round or oval and saucer-shaped but without induration of the base.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

PAUL THORNDIKE, M.D., SECRETARY.

Regular Meeting, Wednesday, May 4, 1898, Dr. H. L. Burrell in the chair.

Dr. C. B. Porter read a paper entitled

SOME CONSIDERATIONS ON THE TREATMENT OF FECAL FISTULA AND ARTIFICIAL ANUS.[1]

Dr. J. Homans: I have nothing to say except to express my admiration of Dr. Porter's skill and success. I will add that I never feel sure of my catgut. Lately I have been using a catgut sealed up in bottles, and this is no more reliable than many of the others. I have lately had two wounds suppurate the whole length. I have better success with silk than with catgut.

Dr. E. W. Cushing: I think this is a very admirable paper and a subject of really very great interest. With the amount of abdominal surgery that is being done now, there are bound to be a good many fecal fistulæ. In some cases it is almost inevitable. Fortunately, most of them heal readily. If the fistula is low down there is one point worth speaking of. Keeping the fistula clear can be done best by injections, passing water up through the rectum or by washing down from above through the fistula. Experience has shown that washing down from above is the best way, the fluid washing whatever there is in the fistula down into the bowel. It seems to be pretty important after the fistula begins to close to get out the last remnants of fecal matter several times a day. The only cases I have seen which could not be closed were tuberculous, but in old cases I have several times had to do an operation similar to that the reader described. I should dissent a little from the theory that fistulæ are often caused by properly handled glass drainage-tubes. If the drainage-tube is pulled out a little and turned a little, it is hard to see how it should stay long pressing on the intestine. I think in most of those cases there has been some injury to the intestine first. I have not that faith in gauze drainage that some have. I should not feel ready to give up the glass. I strongly believe that catgut will do everything that is necessary to be done in the abdominal cavity unless in some cases a fine silk is used for suturing the intestine. I have not used anything else in ten years in the abdominal cavity unless, perhaps, some very fine silk. I have seen many cases where silk has resulted in fistula, where a knot is found at the bottom of the trouble, where you have to go down one, two or three inches to find at the bottom communication with the intestine and a knot of silk responsible for the whole trouble.

Dr. Elliot: I hope the Society realize that Dr. Porter is really a pioneer in this branch of surgery. The first operation I ever saw is the one he has reported as being done in 1879 when I was in the Medical School. Of course, the operation of fecal fistula had been theoretically known about, but I do not think it had been successfully done anywhere to any great extent and certainly not here. He led the way, and whatever I have done in this line my first inspiration was derived from Dr. Porter; seeing him operate successfully encouraged me to try it, and I am very glad to acknowledge his leadership in this matter.

I have used glass drainage-tubes a great deal and never had a fistula from them. I think that if the glass drainage-tube has nothing binding it down it cannot do any harm. On the other hand, I have been told of gauze packing making a hole in the intestine. Operating for the spur as represented in those pictures has gone by, also, I think, that trying to close a fistula without freeing the gut has gone by, and I was surprised to receive a pamphlet from Dr. Senn, within a year and a half, describing a method of dissecting up a flap and closing the fistula without opening the peritoneal cavity. My experience is contrary to that. I believe the essential thing in making these operations a success is to get the intestine entirely free and to unite smooth peritoneal surfaces. If you leave the intestine binding or not perfectly free the tension will make the stitches irritate or cause a stricture or bend of bowel which will be apt to make the operation a failure.

I have done six cases myself; all have been cured.

The most frequent cause is neglected appendicitis where the abscess has been allowed to burrow round behind the cecum. Usually the holes are found in the cecum. I am not disposed to think it is wholly neglected cases, as there is no reason why a gangrenous appendix should not leave a hole in the cecum. Of course, any one is liable to fecal fistula after appendicitis operation. Sometimes they close and sometimes they do not. It is not necessarily any fault of the operator.

Dr. M. H. Richardson read a paper on

CASES OF INTESTINAL SURGERY.

Dr. Homans: That last remark of Dr. Richardson's is extremely striking and true. I have had a number

[1] See page 509 of the Journal.

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[15] The Lancet, December 11, 1897.

of cases of excision of the bowel for stricture or making an artificial anus where the person has been in perfect health, well nourished, with no symptom until the sudden one of complete obstruction comes on, and at the operation a probe will hardly pass through the strictured bowel. This generally occurs in the large intestine.

Dr. Elliot: Dr. Richardson believes that his cases recovered because he used drainage. He states that he had seven fecal fistulæ with one death. I have had six cases without any deaths. Half of mine were drained because they were septic; the other half were sewed up tight and they all recovered. Dr. Richardson presupposes that if his had not been drained his cases would not have recovered. I presuppose that they would have recovered. I have done about twenty resections of the bowel for various diseases and only one death can be attributed to a leak at the point of union; in that case I used a Murphy button which turned out to be mechanically out of order. Death followed the operation. I do not think that the case would have done well if I had had a piece of gauze around the button, yet drainage would have been better in this case. The objection to putting gauze around every resection is that, in the first place, you cannot close the abdomen and you have a weakened wound and liability to hernia. In the second place, you prevent the peritoneal gluing process which would make a perfect union in a very short time. I do not believe myself that a very slight leak between the stitches causes death. I think it probably causes a gluing and I think that the gluing takes place very rapidly. It is easy to sew intestine, the difficulties have been greatly exaggerated. The first intestine I ever sewed united beautifully. I always take great pains to make a tight joint. I think it is much easier to do than one thinks, otherwise we should not have such a long roll of recoveries. In one case of fecal fistula where I packed with gauze I am sure the gauze made the stitch irritate, and it had to be taken out and made a leak which was closed at a later operation. It is the only leak I ever had in intestinal fistula. If I had not packed with gauze I do not think I should have had the leak.

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THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting held at Maplewood in the White Mountains, New Hampshire, August 31 and September 1, 1898.

(Concluded from No. 20, p. 501.)

Dr. Judson Daland, of Philadelphia, read an account of a case of

DISSECTING ANEURISM OF THE THORACIC AORTA RUPTURING INTO THE PERICARDIAL SAC AND CAUSING DEATH.

The rarity and completeness of the lesion, the evidences of complete repair of a similar lesion above the former one, the extraordinary changes in the heart and aortic valves, together with the unusual mode of death, made it noteworthy. The specimens were exhibited. The patient was a man of forty-three years, denying syphilis and rheumatism, but decidedly alcoholic, drinking, on an average, two pints of whiskey daily and frequently half a gallon. He had edema of the legs and two per cent. of albumin in his urine, with hyaline tube casts. He had severe headaches. Examination showed marked arterio-capillary fibrosis, left hypertrophy of the heart and a faint systolic murmur was heard at the apex and transmitted into the axilla. He suddenly developed left hydrothorax, dyspnea and cyanosis; these symptoms were relieved by thoracentesis. He died of cardiac failure.

At the autopsy the pericardium was found to contain more than a pint of blood. The heart and a portion of the arch of the aorta after preservation in alcohol weighed two pounds. The left ventricular cavity was greatly dilated. One quarter of an inch above the free edge of the aortic valves there are evidences of complete rupture through the intima and a portion of the media involving the entire circumference of the artery. The edges of the rupture had been agglutinated by adhesive inflammation and complete healing had been effected probably for several years.

Immediately above this at a distance of half an inch there was a similar but recent rupture, having the appearance of having been cut with a knife. The blood had dissected between the coats of the aorta. Another opening above this communicated with the pericardial sac and was the immediate cause of death.

Discussed by Dr. Jacobi, Dr. Curtin, Dr. Musser and Dr. Quimby.

Dr. J. Edwin Stubbert, of Liberty, N. Y., read a paper based on

SOME STATISTICS OF SERO-THERAPY IN TUBERCULOSIS,

derived from eighty-two cases. After referring to the history of the use of antitubercle serum and its theory of action and mode of preparation, he stated that the experimental results obtained lead undoubtedly to the conclusion that the treatment with antitoxic serum is still in the experimental stage, and should as yet be used only in sanitariums and under the best conditions. "We are on the road to success in this disease and nearer the goal than ever before." The serum used by the author was placed in his hands by Dr. de Schweinitz, director of the Biochemic Laboratory of the U. S. Bureau of Animal Industry at Washington, D. C. It was, therefore, manufactured by the Government, and was to be used for scientific purposes only. Other serums were used in a few cases. Dr. Stubbert believes that the antitubercle serum would seem to be contraindicated in the third stage of pulmonary tuberculosis; also in cases of marked mixed infection. Maragliano claims, however, that the use of antitubercle serum is indicated in all cases and in all stages. The author referred to some unpleasant symptoms following the injection but did not find them dangerous. In one case only was there syncope. The advantages are (1) this method does not tax the functions of digestion or produce gastritis, diarrhea or loss of appetite; (2) the bacilli have disappeared in cases where the sputa were still present; (3) up to the present time in his experience no relapses have occurred. The length of time that the serum can be given advantageously would seem to be about six or seven months.

In cases complicated with the streptococcic infection Dr. Stubbert used Pasteur's antistreptococcic serum, believing that if the secondary infection could be neutralized a clear field would be left for the action of the antitubercle serum. Six cases of this class were described. The author found that the streptococci decrease very greatly or disappear entirely after the second injection. The largest number of injections given in this class was four. In the total of 82 cases the expectoration decreased in 82 per cent. The appetite improved in 81 per cent. Weight was gained in 78 per cent. Physical signs improved in 78 per cent. Temperature decreased in 49 per cent. Bacilli disappeared in 13 per cent. and decreased in 35 per cent. Cough decreased in 79 per cent. Apparent immunity established in 21 per cent. Generally improved, 78 per cent.

Dr. Stubbert is not yet a thorough convert to serotherapy in the treatment of tuberculosis, but believes that these investigations are along the right line, and that this line of treatment, on the whole, is more satisfactory than treatment by any one drug. But as yet we have found no specific.

Dr. W. D. Robinson, of Philadelphia, in discussing Dr. Stubbert's paper, said: I have used sero-therapy in four cases, and have found the local irritation and often suppuration a means of great interference. In one case of laryngeal ulceration the ulceration did seem to be modified by the treatment. Dr. Von Ruck has stated that he has had quite as satisfactory results when the rectum had been used, after being thoroughly cleansed, for the administration of the antitubercle serum.

Dr. Hart, of Colorado Springs, in discussing Dr. Stubbert's paper, said: I should like to ask the Doctor if he has had any experiments on laryngeal cases and found any results from the use of the serum.

Dr. Glentworth Butler, of New York, said: This whole subject is certainly one of extreme interest, but it seems to me it will be very difficult to come to any satisfactory conclusion, partly because of the large number of preparations of this kind that have been offered. I think there are at least twelve, possibly more, varieties of serum which have been offered for the purpose and evidently it will require a vast number of observations. My present experience with the serum has been rather like that of many practitioners, very slight. I have used mainly because of the urgency of friends the Paquin serum. I had a rather curious experience with oxytuberculin (Hirsch): a case in the hospital had been taken ill with symptoms of broncho-pneumonia. In the course of two and a half weeks the temperature went down to normal in the morning, and ran up to 103° in the afternoon. An examination of the sputum revealed tubercle bacilli in large numbers. One of my philanthropic patients who had lost a daughter by this disease was very anxious to have the oxytuberculin tried. The effect was really remarkable for the better. Inside of ten days the temperature had fallen to 101° in the evening and in ten days further the temperature was normal. The patient left the hospital and has remained perfectly well. A second case gave nearly as good results, although it has passed out of observation and I do not know the subsequent history.

One word in regard to the antistreptococcic serum. I have to say that in several streptococcic cases, notably in streptococcic pneumonia, that in four out of five cases the results have certainly been satisfactory in bringing down the temperature and apparently contributing to the recovery of the patient. At the same time on the surgical side of the Methodist Hospital it has proven of extreme value in many cases of deep-seated suppuration and streptococcic infection. The preparation used was that made by Parke, Davis & Co.

Dr. E. R. Baldwin said: We have devoted more time to laboratory study of the serums than to the clinical, and it is really unfair for me to make any statement which would either favor or disparage whatever may be the value of the various serums. Dr. E. A. de Schweinitz has been very kind to send us some of his serums and our experimental results have been published recently by Dr. Trudeau and myself. We jointly wrote a paper which appeared before the Association of American Physicians. The clinical use of the serum has been very limited in the sanitarium Dr. Stubbert referred to a case which Dr. Janeway mentioned; I have a recollection of that case as being a febrile one and it did seem to reduce the fever. The reason that we do not use the serum more is that we have not reached the point in the laboratory studies that has given us a great deal of encouragement. It is nevertheless true that possibly results on human beings may be better than on the lower animals. We would at least expect to prolong the lives of guinea-pigs. I believe that Dr. de Schweinitz has some evidence to that effect. We have not as yet seen any published details of his recent work.

Dr. Hinsdale reported upon two cases treated with the serum successfully remaining well at the end of a year and a year and a half. One case had fifty injections of the serum without unpleasant effect.

Dr. J. E. Stubbert, in closing the discussion of his paper, said: Replying to the question asked by Dr. Hart in reference to the treatment of the laryngeal cases I will ask Dr. Chappell to make a statement in regard to that department. I will simply preface what he may say by speaking of the lung condition in such cases. One case had a localized process of the right lung. The process was undoubtedly arrested. This case had rather severe laryngeal complication.

As to the question of sore backs: when massage is given afterwards we have no difficulty whatever in the administration of the antitubercule serum. However, I cannot recommend the use of oxygen tuberculin. The "Round Robins" issued at Santiago were nothing to letters I received in my office from patients whose backs were made sore by its use. Until the discussion of the paper was on I did not mention any particular case. There are plenty of cases in which we have bad results. One patient, a young lady who came to me and remained about seven months, with a slight process of the right apex, never received a dose of medicine other than antitubercle serum. She gained twenty pounds and is living at present in Summit, N. J. The most encouraging case was that of a girl who gained forty pounds in four months. The tubercle bacilli disappeared in three months. She has now been at work in New York City as a telephone girl, living in a district of the lower class of flats with a family in moderate circumstances, something like fifteen months, and has been working every day. Of these forty pounds she lost seven, which left her considerably above her average weight. Another patient gained something over ten pounds. He was in the Sanitarium perhaps four months. The day before he left he walked twenty-five miles without having any untoward symptoms, and has been working in New York City without any return of the disease.

Regarding the use of this serum in other places: in

New York it has been used by Dr. S. S. Jones in three cases. In one case the disease was checked and the patient kept alive. He said he was going to have a good time, and he died suddenly with a large hemorrhage. Dr. Jones told me the disease had remained in abeyance as far as he could tell. Another patient lost the tubercle bacilli in New York under the use of tubercle serum. I saw him three or four days ago and his lungs are normal.

Dr. Walter F. Chappell, of New York, in discussing this paper, said: I have never personally given an injection of serum, but have had an opportunity during the past year to watch the cases of laryngeal tuberculosis treated at the Loomis Sanitarium at Liberty. I make trips about once a month and look at the cases and watch their progress. The percentage of favorable results obtained in the Sanitarium within the last year exceed everything I have seen before. To be sure, they have had the best possible food and surroundings, and at the Loomis Sanitarium they have been doing everything they could to help in the local treatment by properly selected medication, and while I think the serum may possibly have had some effect on the laryngeal lesions, I am not prepared to say that it has, but the results have been very good; whether from the treatment or general surroundings, I am not able to say.

Dr. Roland G. Curtin, of Philadelphia, read a paper on the

INFLUENCE OF RESPIRATION ON THE ACTION OF THE HEART IN HEALTH AND DISEASE.

Discussed by Dr. Judson Daland, Dr. A. Jacobi, Dr. Beverley Robinson and Dr. Frank S. Johnson.

Dr. Guy Hinsdale, of Philadelphia, read a paper on

THE DISTRIBUTION OF PULMONARY TUBERCULOSIS IN NEW JERSEY,

illustrated by a map and discussed by Dr. James B. Walker, Dr. Glentworth R. Butler and Dr. Charles E. Quimby.

Dr. E. R. Baldwin read a paper entitled

INFECTION FROM THE HANDS IN PHTHISIS.

Discussed by Dr. J. Edwin Stubbert, of Liberty, N. Y., Dr. James A. Hart, of Colorado Springs, Dr. A. Jacobi, of New York, and Dr. T. D. Coleman, of Augusta, Ga.

Dr. Wm. Duffield Robinson, of Philadelphia, read a paper entitled

CLIMATOLOGY OF NUDITY; PARTIAL AND COMPLETE.

Illustrated by photographs showing the penetration of light through various textures. Discussed by Dr. Daland.

Dr Charles E. Quimby, of New York, read a paper entitled

DEFINITE RECORDS OF PHYSICAL SIGNS.

Discussed by Dr. Judson Daland.

Dr. Francis H. Williams, of Boston, presented an

OUTLINE OF THE CLINICAL USES OF THE X-RAYS.

Dr. F. I. Knight, of Boston, in introducing the discussion of Dr. Williams's paper, said: I would say that Dr. Williams before the meeting told me that he hoped there would be a very free discussion of his paper. I do not consider myself able to discuss it, but announce it to those gentlemen who are. He wants, if possible, criticism, for it is a new field and he would welcome it if any of the gentlemen can give it.

For my own part I feel with him that the fluoroscope is a very important addition to our armamentaria. In a case of suspected aneurism, I appreciate its possible great value when I recall the number of cases I have seen in which there has been doubt as to what was compressing the trachea. If we could get such a picture as this on the wall there would be no question but that it was an aneurism; and so in regard to the size of the heart, I was particularly impressed with what Dr. Williams said about emphysema being an aid rather than a hindrance, as emphysema interferes so seriously with the results of percussion, and he also tells us that excessive fatty condition of the chest walls which renders percussion of the cardiac region difficult is very little hindrance to examination with the fluoroscope. And even in tuberculosis, notwithstanding the criticism of my learned brother yesterday, I do think that every aid we can get to an early diagnosis is going to be of much importance. As yet it seems, perhaps, that it is of less advantage in that disease than in others. It is evident from what I have seen and from what Dr. Williams himself admits, that this art is difficult, and for a time perhaps it must rest in the hands of those who have had long experience like Dr. Williams, but in the end perhaps methods may be simplified so that we can all avail ourselves of it. At any rate, in doubtful cases we can have the aid of our brothers who become expert in it as Dr. Williams has.

Dr. Charles E. Quimby: I would also ask if he has found any fluoroscopic screen which can be made to conform to the chest wall. It would seem that absolute uniformity in placing the tube, as to distance from and relation to the spine, would be imperative to avoid relative distortion of the outlines of the heart upon the screen. I understood the doctor to say he had not seen the heart shorten. It was my good fortune recently, through the courtesy of Mr. Tesla, to see a most perfect demonstration of the heart. When the tube was more nearly in the plane of the spine the lateral excursion of the heart was prominent, but when carried more to the left and lower, then the shortening was equally prominent and distinct.

Dr. Vincent Y. Bowditch, of Boston, in discussing Dr. Williams's paper, said: It is hardly necessary for me to speak on this paper, it is, however, my pleasure and privilege to testify to Dr. Williams's painstaking, careful work in the city hospitals where I have been associated with him. One point comes to my mind, and that is the apparent ease of recognition of incipient tuberculosis by means of the x-ray machine. It seems hard to realize that by the x-ray machines we can discover a very slight beginning tuberculosis when we cannot discover it by auscultation and percussion. I should like to have Dr. Williams enlarge a little more on that subject.

Dr. Didama asked: What is the expense of this instrument which shows things we have never been able to see? Is it really demonstrated, as you think, that there is no difference between the effect of static electricity and that ordinarily employed in producing the x-rays? Some operators claim that static electricity never burns the skin.

Dr. R. G. Curtin, of Philadelphia, said: It occurred to me when Dr. Williams told us that in one case where the lung was a little cloudy the use of digitalis cleared it up, that the patient might have had edema of the lung which was cleared up by the treatment. I would like to ask Dr. Williams what is the appearance of old pleural adhesions, especially those in which the pleura was thickened. It has occurred to me that it would be difficult to distinguish between the catarrhal process and that of tubercular infiltration, that is, if the sputum yielded no bacilli.

Dr. J. E. Stubbert said: I believe Dr. Williams wrote the most scholarly article about a year ago that ever appeared on the subject, and I am thoroughly familiar with his views. It is hardly necessary to add anything to what he has said, but with reference to a remark of Dr. Quimby's as to the shortening of the heart, I have observed it a number of times. When I first began working in this line it was my custom to bring into the dark room laymen who would naturally have no knowledge of what they were to see, and they have often described to me the shortening of the heart in action. I have repeatedly noticed a dimpling of the apex. The doctor referred to some one considering the examination by x-rays a joke: I have gone through the same experience. I remember Dr. H. P. Loomis once came to Liberty and told me he didn't believe in the x-ray at all. I brought in a case which neither of us nor the house doctor had ever seen before. I asked the doctor to examine the case and he diagnosed it as consolidation of the right apex, with beginning softening and some infiltration in the lower lobe. He made the rather significant remark that he might not have a cavity, but was beginning to have. I then examined the case and agreed with Dr. Loomis's diagnosis. I sent for the house doctor and he examined him with the x-ray. After a moment he said: "This man has consolidation of the right apex, he has infiltration of the lower portion of the lung and while he may not have as yet a cavity he is going to have one in a short time." Dr. Loomis said: "Well, if it can be diagnosed in that way I will have nothing more to say," and he is now a convert. There is no doubt in my mind that we can diagnose, especially in thin subjects, very slight infiltrations at the apices of the lungs. We all know how difficult it is to educate our ears sufficiently to distinguish indistinct sounds, but with the x-ray the slightest infiltration is shown in a slight haze.

Four brothers were brought to me, one with laryngeal tuberculosis and infiltration at the apices. There was a bad family history. The examination of the remaining three by ordinary methods revealed nothing, but with the fluoroscope I was able to distinguish a very slight haze at the top of one lung in two of them. The result was that those boys were left in the country for a winter, and when I examined them some twelve months later the haziness had disappeared and they were apparently saved from the more serious form of tuberculosis by that method of examination.

The question of burns is a very interesting one to me, as early in my experiments two patients were rather severely injured. At first I used a coil and in attempting to photograph lesions of the lungs the accident happened. One patient recovered in a very short time, and the other died from his pulmonary disease before the skin lesion had healed. We now use the static machine from which I have seen no bad results.

Another form of tuberculosis that I think is more easily demonstrated by the fluoroscope than by ordinary methods of examination is the disseminated one. The condition of pericarditis with effusoin is one which I have never seen. Pleurisy with effusion is very easily marked out.

One more point regarding the remarks of Dr. Butler last night as to the shape of the right side of the heart; I would like to ask Dr. Williams what his experience in that line has been. It never having been brought to my mind I have not studied the exact outline of the right side of the heart, but speaking from memory I remember only three or four cases in which the outline was vertical as stated by the doctor last night. In most cases the right side of the heart shoots off rather abruptly above the margin of the fifth rib, and I should be inclined to think that the shadow thrown can be more depended upon than percussion note.

Dr. Beverly Robinson said: I would like to ask Dr. Williams what should be done when the patient is so ill that he cannot be carried to a proper examining room. As I understand it, it is necessary to have a certain amount of darkness to have the examinations made. I would simply say in addition to what has already been said that I had a case very similar to the one shown of aneurism, and it was certainly much more definitely made out by the fluoroscope. I would ask the question in reference to hospitals in Boston and elsewhere, whether in most of the hospitals they have this instrument, whether it is generally used, and to what degree it is used?

Dr. Williams, in closing the discussion of his paper said: I did not take up the methods of examination in this paper because I had described them in previous articles.[1] My patients at the hospital were brought into the x-ray-room on a stretcher which fits the supports attached to the stand of the x-ray machine. If a patient is too ill to be moved he cannot very easily be examined, although this is possible by means of a portable x-ray machine. The anode of the Crookes' tube should be at least two feet away from the patient for examining the thorax and usually under the point where the median line is crossed by a line joining the nipples; this position should be determined by plumb lines. The median line is obtained by sighting from a permanent plumb line, with a weight at the end, that is fastened to the middle of the support upon which the head of the stretcher is placed, to another fastened to the support at the foot in the same way. The other is determined by putting a line seven or eight feet long, with a weight on either end, across the chest from nipple to nipple, that is to say, on a level with the fourth ribs. The line hangs down on either side and the proper point is obtained by sighting as before from weight to weight. The patient should be lying on his back when he is examined. I tested the correctness of the plumb lines as a guide to the position of the tube by making two successive examinations, the patient getting up and the tube being moved after the first examination and both patient and tube being rearranged for the second. The outlines of the heart and ribs traced by means of the fluoroscope in these two examinations differed only by the width of the line.[2]

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[1] "A Study of the Adaptation of the X-rays to Medical Practice," Medical and Surgical Report of the Boston City Hospital, January, 1898. "X-rays in Medicine," Medical News, May 14, 1898.

[2] An instrument, which is a form of plumb line, that I have devised for determining the exact position of the Crookes' tube when it is desired to place it directly under the point to be examined is shown in Fig. 16. This is especially useful in cases where the median line is not available as a point of reference. I have used this instrument from time to time for more than a year.

The essential part of the fluoroscope is the screen and, if the room is properly darkened, this may be used alone, as the box part of the fluoroscope, which excludes the ordinary light from the eyes, is not then necessary and prevents them from being brought as near to the screen as is sometimes desirable. This screen should be twelve by fourteen inches and for making a permanent record of a case may be covered to advantage with a piece of thin glass or a film of celluloid or gelatine — these do not obstruct the light. If the surface of the film is ground an ordinary pencil may be used, but for smooth surfaces a lithographer's pencil is necessary. The outlines of the heart and diaphragm, for instance, that have been drawn on the film, may be traced, after the patient has been taken away, on a suitable sheet of paper placed over the film if both are held up against a window. The patient's name, the diagnosis, date, etc., may be added and the paper filed away for future reference. Some of the examinations [3] I have made were recorded in this way but more by using tracing cloth that was placed directly on the patient and the lines which had been drawn on the skin [4] by means of the fluoroscope were traced upon the cloth.

For purposes of study the best machine is necessary but having learned to identify the appearances in the chest, for instance, under both normal and abnormal conditions, a portable x-ray machine may be used with satisfactory results if the patient is too ill to come to the office or, in case of a hospital patient, to be moved to the x-ray room, but if the physician is not familiar with these appearances a small machine of this kind is unsatisfactory.

I have not discussed the heart's pulsations fully but I did not mean to suggest that the heart, with the tube in this position, appears to have no motion at the apex, but merely that its most conspicuous motion is on the left side as shown in the diagram.

The normal heart varies in size and position within certain limits. I have already referred to the great importance of determining whether or not the heart is smaller than normal. We also need to know if the heart is of unusual size and if this is the case in what part the organ is enlarged. The right border of the heart is difficult to determine by auscultation and percussion, but it is seen in the fluoroscope, especially during full inspiration, about one inch and three-quarters to the right of the median line. In women and boys and girls the distance is less.

We can see the right auricle in both health and disease and in certain diseases a part of the left auricle also.

Aneurism of the heart may be seen in the fluoroscope; also aneurism of the aorta. The outlines of an aneurism of the aorta, which appears on the screen as a dark area, may sometimes be seen to move with the pulsations of the heart but when these pulsations are not seen the diagnosis, with the fluoroscope, must be based on the position and shape of the dark area.

Let me refer a moment to the diagram of pericardial effusion taken from a patient in my service in the early part of 1897.[5] I examined him with the fluoroscope because of this effusion but while doing so observed that the apex of the right lung was darker than normal. I then made a physical examination of the lungs but could find no evidence of phthisis. I continued to examine the lungs in the fluoroscope from time to time and noticed that the diseased area extended and the excursion of the diaphragm on the right side diminished; finally the left lung also became involved and the movement of the diaphragm on this side was also shortened. No physical signs were found on the left side at this time by auscultation and percussion but they were now marked on the right side. I gave the patient tuberculin to which he reacted. The excursion of the diaphragm is sometimes seen in the fluoroscope to be restricted before a diminution in the brightness of the lungs is observed.

I have seen one case of tuberculosis which gave no sign in the fluoroscope although bacilli were found. The patient had tubercular laryngitis. There are, on the other hand, certain cases that might easily be overlooked by auscultation and percussion which would readily be detected by an x-ray examination.

Among the cases of pleurisy with effusion that I examined with the fluoroscope, there were some in which a darkened area of the lung and a diminished excursion of the diaphragm led me to suspect tuberculosis, when it had not been detected by physical examination. This suspicion was afterwards confirmed in certain cases by the tuberculin test or by the finding of bacilli.

Edema of the lungs may be distinguished from early tuberculosis by observing the chest. In the former the lower part of the chest on both sides is dark, whereas in early tuberculosis, the darkness is usually on one side and at the apex.

Adhesions of the pleura without thickening would not obstruct the passage of the rays and therefore could not be seen in the fluoroscope, but if the movement of the diaphragm were restricted, an adhesion might be suspected.

Auscultation and percussion may leave us uncertain whether we have to deal with an adhesion with thickening or with a pleuritic effusion, but the fluoroscope can tell us certainly if fluid is absent unless it is encysted If present the diaphragm line is obliterated on the side of the effusion, especially in the outer portion where it curves down to the side of the chest, because fluid would sink and fill in this lower and outer angle unless it were encysted. The ability, then, to follow this portion of the diaphragm line proves the absence of fluid except in the particular case just mentioned. Even in such a case I have suspected the presence of fluid by means of the fluoroscope and this suspicion was confirmed in one case by an autopsy and in another by tapping. The x-rays enable us to choose the most desirable place for inserting the needle. Calcareous deposits in the pleura are seen as dark areas in the fluoroscope. This is also true of calcareous deposits in the aorta or in certain portions of the heart.

A suitable outfit for making x-ray examinations will cost at least five hundred dollars. I have been obliged to have mine made to order and by these means was enabled to get the various adjustments desirable for a practitioner.

Burns may be produced when either the static machine or the coil is used, but with the simple precautions now known to the practitioner they are avoidable. None of my patients have ever been burned and I have been making x-ray examinations, sometimes with the static machine and sometimes with the coil, during about two and a half years. Tesla suggested placing a screen of aluminium wire, or a thin sheet of aluminium, which should be grounded, between the tube and the patient to prevent any risk of burns. The following experiments of an electrical engineer made upon himself with a static machine, suggest that burns may be prevented by grounding the anode. During the first fourteen days of November, 1896, he exposed his skin to the Crookes' tube at a distance of less than two inches. The first exposure was three-quarters of an hour, the second, half an hour, the third, one hour, the fourth and fifth, half an hour each. These successive exposures were at intervals of about three days. The anode was always grounded and there were no untoward results. On December 21st, he exposed the same portion of his skin in a similar manner for half an hour, without grounding the anode. Twelve days later the skin was blistered and a severe ulceration followed.

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[3] I have now tracings and notes of more than one thousand x-ray examinations which are classified according to diseases, but thus far I have been so occupied in obtaining a satisfactory apparatus that I have not had the opportunity of publishing as many of the results as I shall hope to publish later.

[4] It is not necessary in most cases to remove the clothes.

[5] I reported this case in an article called "The Röntgen Rays in Thoracic Diseases," American Journal of the Medical Sciences, December, 1897.

Photography gives more detail than the fluoroscope — for instance, I have taken x-ray photographs which showed normal arteries; these could not be seen in the fluoroscope, but the latter has the advantage in examining the thorax, for example, as the movements of the diaphragm and heart can be watched and the examination with this instrument can be made more quickly. Photography requires a great deal of time, even with the dark room at hand, as it is necessary to wait for the plate to be developed, but I use either the fluoroscope or the x-ray photograph as occasion requires and have a dark room at my office.

I do not know exactly how many hospitals have x-ray machines. I am told at least thirteen in New York have them. We have them in Boston and they are also to be found in Philadelphia and Baltimore and probably in all the large cities in the country.

One last word about this method of examination. In hospitals it will be always desirable to have a photographer to take the x-ray photographs, to keep everything in order and manage the apparatus, but it is not practicable for other than medical men trained in this special work to make the x-ray examinations. You would not send a patient to a man who was not a physician for auscultation and percussion.

The officers elected for the ensuing year are: Dr. Beverley Robinson, New York, President; Dr. James A. Hart, Colorado Springs, and Dr. Richard C. Newton, Montclair, N. J. Vice-Presidents; Dr. Guy Hinsdale, Philadelphia, Secretary and Treasurer; Dr. E. O. Otis, Boston, Member of the Council; Dr. Frederick I. Knight, Boston, Delegate to the Executive Committee of the Congress of American Physicians and Surgeons; Dr. R. G. Curtin, Alternate.

Adjourned to meet in New York City, May, 1899.

STATE HOSPITAL FOR INSANE IN CONNECTICUT. —The legislative committee of Connecticut have reported the necessity of erecting another hospital for the insane, and that in consideration of one-half the patients being admitted to the State Hospital from Fairfield and New Haven Counties, the hospital should be located in Bridgeport. A commission has been again appointed by the last Legislature, of which Dr. Amos J. Givens, of Stamford, and Dr. C. B. Adams, of New Haven, are members. This commission is in search of good locations.

Recent Literature.

A Text-book on Surgery, General, Operative and Mechanical. By JOHN A. WYETH, M.D., Professor of Surgery in, and President of the Faculty of, the New York Polyclinic Medical School and Hospital, etc. Third edition. Revised and enlarged. Illustrated. 997 pages. New York: D. Appleton & Co. 1898.

The author's preface is a good description of this attractive volume, the first edition of which was published in 1886. The work in its present form is greatly improved. The writer has tried to bring it up to date and to introduce everything which represents an advance in surgical science or operative technique, especially what experience has demonstrated to be of actual value. Although much has been added to the previous edition, still much also has been omitted, so that the present volume exceeds the former by only one hundred and twelve pages. To accomplish this the work has been practically re-written. Professor Wyeth has tried to adopt an arrangement suitable for ready reference to a desired subject. The introductory section treats of surgical pathology. Other subjects noted are the chapters on surgical dressings, sterilization, asepsis, antisepsis, hemorrhage, wounds, burns, amputations, affections of the lymphatic and vascular systems, especially that describing aneurisms, ligation of vessels, bones, joints, and regional, especially abdominal, surgery. Several of these articles one reads with great interest and profit, notably that describing amputation of the hip and aneurism of the innominate artery, which subjeets are very thoroughly presented. If one criticized anything in such a well-written work, it would be the chapter on Orthopedic Surgery, in which some changes are necessary to make this part correspond to the high standard of advanced ideas seen in other portions of the book. But this is a minor defect, and the volume, as a whole, is a very satisfactory one, and excellently well adapted for a text-book.

The Mental Affections of Children; Idiocy, Imbecility and Insanity. By WILLIAM W. IRELAND, M.D., Edinburgh. 442 pages. London: J. & A. Churchill. Edinburgh: James Thin. 1898.

This volume is an excellent sequel to Ireland's former work. As stated in the preface, he has drawn liberally on his previous work "On Idiocy and Imbecility," but nevertheless has produced a practically new treatise. As he modestly puts it: "I am pleased to have this opportunity of being able to give my more matured views, though the principal merit of this work probably is, that it brings together the widely-scattered studies of able observers on the subject of 'Idiocy and Imbecility.'" The two points which stand out prominently in a reading of the book are, first, the sense of originality and valuable personal experience, and secondly, the admirable use to which the author has put the experience of others.

In addition to a discussion of the definitions, statistics and causes, there is a detailed consideration of the varieties of idiocy, and finally, interesting chapters on education and laws governing idiocy and imbecility. So far as we are aware, it is the most complete work in English on the subject of which it treats, and certainly is of great value, both from a practical and theoretical point of view. Especially to be commended are the many valuable suggestions as to the treatment of this unfortunate class of defectives. Ireland does much to dispel the too prevalent idea that the cases are, in this respect, hopeless, and lays just stress upon the value of education, properly directed, toward the amelioration of the conditions under consideration.

The strictly scientific portion of the book is on the whole less satisfactory than its more practical chapters. We see, for example, no real advance in the classification of idiocy over what has gone before. To our mind, a classification in this field to be valuable, must be from the standpoint of pathology, rather than from that of more or less superficial clinical features, and gross appearances. To speak of idiocy as paralytic or epileptic, or hydrocephalic or microcephalic, is no longer sufficient to satisfy the inquiring mind, particularly when our knowledge, through the researches of Hammerberg and others, has certainly gone beyond the stage which regards gross changes as adequate explanations. Everywhere throughout the book, there is evidence that Ireland has not attributed sufficient importance to the findings of the microscope. Meagre as such findings still are, we rightly claim their recognition in so important a matter as the classification of defective mental states.

We question somewhat, also, the use of the term "idiocy by deprivation," as Ireland applies it. He places Laura Bridgman in this class. It seems a needless stretching of the meaning of the word "idiocy," to include in it persons handicapped by the loss of one or more senses, whose mental faculties are otherwise quite unimpaired.

The volume is admirably printed and well illustrated, and is unquestionably a most valuable addition to our general knowledge of the whole subject of the mental affections of children.

Phillipe Pinel: A Sketch. By Francis Tiffany, with an introduction by J. M. B. Pp. 29. 1898.

In this short sketch of the life and work of Pinel, we have at once a sympathetic account of the great reform in the treatment of the insane, which he inaugurated, and a valuable historical sketch of an interesting personality. With the rapid growth of medical knowledge we are too apt to ignore or forget the initial work in any one line, and it is well that reminders of the labors of the great men of the past should constantly be furnished us. Such a function this small pamphlet fulfils. It is entertainingly written, beautifully printed and has as frontispiece a good reproduction of the painting by Fleury of Pinel's visit to the Salpêtrière in 1795.

Abdominal Surgery. By J. Grieg Smith, A.M., F.R.S.E., Surgeon to the Bristol Royal Infirmary, Professor of Surgery, University College, Bristol. Sixth Edition. Edited by James Swain, M.S., M.D., Lond., F.R.C.S., Professor of Surgery, University College, Bristol, etc. Two volumes. Philadelphia: P. Blakeston, Son & Co. 1897.

This work is so well known that an extensive review seems superfluous and unnecessary. Its popularity is shown by the fact that this new edition is published about one year after its predecessor. It has been recognized from the time of its introduction into medical literature as one of the leading if not the first among the productions of English surgical writers. The chief part of the present edition is the work of Professor Swain, only the first hundred pages having been revised when the profession met its great loss through the death of Prof. Grieg Smith. Professor Swain is thoroughly familiar with the work, having actively shared for three years in the preparation of the last fifth edition. Also constant co-operation with his distinguished colleague in his private and public work has made him familiar with his views and methods. Although the short interval between the fifth and sixth editions has necessitated fewer changes in the text of the latter than in previous ones, it is nevertheless thoroughly revised and represents the most advanced ideas in this branch of surgery. The book in its present form is excellent and should occupy a conspicuous place in the library of every physician or surgeon.

Ambroise Paré and His Times, 1510–1590. By Stephen Paget. Illustrated. New York and London: G. P. Putnam's Sons. 1897.

The chief interest in this most excellent account of the life and times of a man who impressed his character and work so deeply upon the history of surgery lies in his personal letters describing his "Journeys in Diverse Places," which give a most vivid account of the conditions of military surgery during the sixteenth century, and the work in camp, field and fortress, in success and defeat, of a master of surgical art, whose activity and devotion in the pursuit of his calling seem almost superhuman.

The story of Paré's life, aside from what is given by himself in the letters, is well told, by one whose knowledge both of European and surgical history enables him to do justice to the influence of the times in which he lived upon the great surgeon, and Paré's influence upon surgical practice.

Many readers will perhaps be surprised to learn that Paré did *not*, as is quite generally believed, invent the ligature of arteries, which had been previously used to stop the bleeding of vessels in wounds, but was the first to employ the ligature in wounds made by amputations.

Not only toward Paré the surgeon, but Paré the man is great interest and attraction developed in the reader of this biography, which portrays with vigor and accuracy the many noble attributes of the character of one of the leaders in surgery.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois, Professor of General Medicine and Diseases of the Digestive System, Chicago Clinical School, Attending Physician to Cook County Hospital, etc. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

The second edition of this well-known work has been improved by a thorough revision, which has brought it abreast of the latest advances in pharmacology. A chapter on the "Untoward Effects of Drugs," including a table which summarizes our knowledge of the subject, has been substituted for the chapter on "Definitions."

The difficulties of the classification of remedies are successfully met, and the book well arranged and indexed for reference.

As an aid to the student in mastering a difficult part of his medical curriculum, and as a reference-book for the practitioner, this book will be found of distinct value.

Hand-book for the Hospital Corps of the United States Army and State Military Forces. By CHARLES SMART, Deputy Surgeon-General, U. S. A. Approved by the Surgeon-General of the Army. New York: William Wood & Co. 1898.

This manual, which is intended for the instruction of the members of the army hospital corps in the duties of their service, is a clearly written, well-classified book of three hundred and fifty pages.

It is divided into three parts, the first of which deals with the organization of the corps for service in camp and field, sanitary care of camps, etc.

The second part gives an elementary outline of anatomy and physiology, such as is required for the understanding of first-aid work, and is generally included in books on first aid to the injured.

The third part deals with the special duties of the hospital corps, and includes descriptions of the types of accidents, wounds and diseases with which military surgery is especially concerned. A brief chapter on the elements of cookery is also added. The book will be found excellently adapted for the purpose for which it is intended.

Cataphoresis; or, Electric-Medicamental Diffusion as Applied in Medicine, Surgery and Dentistry. By WILLIAM JAMES MORTON, M.D., Professor of Diseases of the Mind and Nervous System and Electro-Therepeutics in the New York Post-Graduate Medical School and Hospital; Member of the Medical Society of the County of New York; Permanent Member of the Medical Society of the State of New York; Member of the Röntgen Society of London, etc. New York: American Technical Book Co. 1898.

The aim of the author of this work, as stated in the preface, has been to publish in a single volume for the medical and dental professions our present knowledge of "electro-medicamental diffusion," which he considers has already demonstrated its value in dental practice, and before long will be appreciated at what he considers its real worth for the production of local anesthesia for minor surgical operations.

The ordinary methods of injecting cocaine into tissues with the hypodermic needle were obviously unappliable to the dental pulp, which is covered by the hard impenetrable dentine. The method of electrical cataphoresis, according to Morton, has solved the problem of the anesthetization of dentine.

The book gives a full history of the gradual progress of the experimental work which has gradually led up to the present methods by which cataphoresis by the electric current is accomplished, together with an elementary account of the electrical principles involved, and of the apparatus employed.

Cases are cited in which this method has been successfully used at the New York Post-Graduate Hospital for the production of local anesthesia for surgical operations. From eight to fifteen minutes' application of the current is required. It would seem to the writer of this review that the time required for the production of anesthesia and the complication of the apparatus, difficulty of transportation, etc., will probably render the method for general surgical purposes inferior to the endermic injection of weak solutions of cocaine or eucain, which have proved almost unversally so satisfactory.

The book also gives an account of the cataphoresis administrations of drugs in the treatment of general diseases, and in fact includes almost everything that has been done or attempted in the way of introducing drugs into the human system by electricity. It will be of considerable value to dental practitioners, and of interest to all physicians and surgeons who are interested in the various methods of local anesthesia and the introduction of drugs into the system by the electric current.

Manual of Chemistry: A Guide to Lectures and Laboratory Work for Beginners in Chemistry. By W. SIMON, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore. Sixth edition. Philadelphia and New York: Lea Brothers & Co. 1898.

Former editions of this work have received full notice in these columns. In the present volume the author had adhered to the same arrangement of subject-matter as in previous volumes. The text in each section has been carefully revised and enlarged by the addition of the important results in scientific progress of recent years, as far as they bear upon the subject in hand.

The book contains all the subject-matter that is necessary in a manual of chemistry for physicians or students of medicine. The style is clear and elementary and is thus particularly adapted to beginners in chemistry.

The reactions of the metals and the alkaloids are illustrated by sets of very excellent plates. The preparation of these plates shows evidence of great care and labor, and they cannot but be of great service to the student who works in the laboratory with the manual.

The chapters upon physiological chemistry are written with a view to the application of the work in this field to clinical diagnosis. They are well adapted for reference in practical medical work.

Wounds in War. The Mechanism of their Production and Treatment. By SURGEON-COLONEL W. F. STEVENSON (Army Medical Staff), A.B., M.B., M.D., M.Ch. Dublin University; Professor of Military Surgery, Army Medical School, Netley, Four hundred and thirty-seven pages and 86 illustrations. New York: William Wood & Co. 1898.

This is an American reprint of the original English edition (Longmans, Green & Co., London, 1897), a review of which has already appeared in the JOURNAL (1898, vol. cxxxviii, p. 332.) As the present volume is an exact copy so far as the subject-matter of the text and illustrations are concerned it is unnecessary to further describe it. It is a very interesting, valuable work. It is well and carefully written. The American book is somewhat larger, and gives to one familiar with the English volume the impression that it is a second edition of the work, since it bears the date of 1898. This is not the case, for the book as far as we know has not be rewritten.

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THE UNITY OF SYPHILITIC LESIONS.

In a valuable address before the Ontario Medical Association at Toronto last June, on the stages and forms of syphilis, with more especial reference to the hepatic manifestations of the disease, Dr. J. G. Adami, of McGill University, makes some timely and useful remarks in regard to the unity of syphilitic lesions.

Dr. Adami conceives that there is no more firmly fixed idea in the whole of medicine than that of the absolute existence of three different stages and forms of syphilis — a primary, secondary and tertiary stage. But without desiring to pose as a revolutionist or an iconoclast, and acknowledging broadly and generally the utility of these divisions, he believes there is danger in these fixed ideas in medicine, as in other things, and that an occasional challenge of that which is accepted of all men as fixed and assured is of benefit. Notwithstanding the work of Wagner thirty years ago, the protest of Nevins Hyde and the writings of others, the profession in general is still too imbued with a firmly planted idea of the sharp demarcation of the different forms and stages of syphilis.

Adami takes the ground, at the outset, that it is not even necessary to have any recognizable first stage or cutaneous chancre. Cases are not rare in which there is a complete lack of evidence of any superficial primary infection. He then lays down the following postulates:

(1) That from analogy, as from clinical history and absence of any indications of the same, in sundry cases there may be an absence of the primary cutaneous or epithelial manifestations of syphilis.

(2) That individuals may fail to present either primary or secondary symptoms that are recognizable, and yet eventually develope definite tertiary lesions of the disease.

(3) That where the subject is relatively insusceptible, it is possible that the disease may be limited to the primary cutaneous manifestation not followed by secondary lesions.

(4) That as with tuberculosis so with syphilis, the congenital form of the disease begins at what may be termed the secondary stage of the acquired disease, that is, the stage of general dissemination of the virus through the organism.

With reference to the relationship between secondary and tertiary syphilis, Adami holds that the lesions occurring in the congenital and the acquired disease are identical, and brought about by the same process or processes.

That whether we have to deal with the disease in the secondary or in the tertiary stage, the same processes are at work. That if we except those cases as truly tertiary in which we have to deal merely with the fibroid remains of obsolete gummata, and, again, those cases in which there is perihepatitis (which perihepatitis appears to be a complication rather than the genuine and direct result of syphilis), then we are bound to admit that the study of the liver alone would indicate that no sharp boundary line can be made out between secondary and tertiary syphilis. Neither can such a boundary be made out between secondary and tertiary tuberculosis.

While all must admit the utility of recognizing these two stages, from an anatomical and histological standpoint one is forced to acknowledge that progressive syphilis is characterized by the same succession of phenomena, whether it be studied but a few months or long years after the primary infection. Anatomically and histologically there is no valid distinction to be drawn between secondary and tertiary syphilis.

Is not such a conclusion wholly at variance with clinical opinion and experience? Upon the face of it, it is; but if the subject be looked into carefully, he thinks that such a view will reconcile not a few of the divergences existing among syphilologists. There are those (and they are the majority) who state that tertiary syphilis is non-infectious, and those who bring forward clear examples of the production of infection five or ten years after primary inoculation of the disease. This difference can be reconciled if we agree upon the following points:

(1) That nowadays, under proper treatment, syphilis, if not a self-limiting disease, is at least a disease which can be healed; so that many of the lesions recognized as being tertiary syphilis are truly the indications of the old healed syphilis, and not signs of progressive or latent disease.

(2) If the disease has not completely died out and remains latent, the resistance of the tissues of the organism is such that in the majority of cases, if it does not tend to light up again, there is so considerable a local reaction that the infection and, consequently, the spread of the process tend to remain strictly localized, and the germs (which are probably of bacilliary nature) do not become disseminated through the blood. Thus neither the blood nor the secretions contain the virus.

(3) In a very small number of cases the reaction on the part of the tissues may be so lessened, and the virus retain or gain so high a virulence, that either it causes ulceration, or, in other ways, becomes disseminated, and capable of causing infection even late in the tertiary stage.

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QUARANTINE AND THE MEMPHIS CONVENTION.

We shall take occasion next week to speak more fully of the conclusions and results of the meeting of the Convention held last week, in Memphis, in response to an invitation of the Board of Trade of that city, to consider the question of quarantine.

It is desirable to have an efficient and, as nearly as possible, a uniform quarantine service for this country. The problem is how to accomplish this without too much interference with such local administrations as are now recognized as being intelligent, efficient, discriminating and vigorous. What shall the central organization be, and what its powers and duties? How far shall initiative and execution be left to local boards and officials? The answer of the Memphis Convention to these questions is summed up in the following report of the Committee on Resolutions, which was adopted unanimously:

> The Committee on resolutions after careful consideration of the many valuable resolutions offered by the various members of the Convention decided upon the following, as embodying the ideas expressed in the majority of the said resolutions.
>
> *Therefore*, That for the purpose of protecting and improving the general health of the people of the United States, co-ordinating and harmonizing the action of the State and National sanitary authorities; framing regulations for the treatment of infected vessels and material at all infected or suspected foreign ports of shipment; preventing unnecessary interference with commerce, the United States mail, or traffic by land or water; and for adopting a uniform system of quarantine for all ports in this country, be it
>
> *Resolved*, That there be established on a broad and comprehensive basis a National Bureau of Public Health in the Department of the Treasury of the United States. That the administration of all the public health functions, now exercised by authority of the United States, be placed in charge of this Bureau.
>
> *Resolved*, That the sanitary authorities and commercial interests of the several States of the Union be brought into immediate relations with the Bureau, and be given a due share in the power and responsibilities of the Central Board, through the agency of an Advisory Council, consisting of one member from each State, to be appointed by the authorities of the several States.

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UNITED STATES PENSION SURGEONS AND THE CIVIL SERVICE LAW.

For some little time we have been receiving ominous reports from private sources, that the President was lending a too willing ear to suggestions from some quarters, that he should issue an order placing the United States Pension Surgeons outside of the protection of the Civil Service Law, and thus render them liable to displacement by political influence. Now the subject is beginning to be ventilated by the daily press. It has been hard to believe that such a step was really imminent. It may strike some professional politicians as "good politics," but it can hardly prove to be such in the long run.

There are four thousand medical examiners of the Pension Bureau. At present these appointments come under the classified service, but it is said that the Pension Commissioner has for some time, by a "strained interpretation," disregarded and evaded the law, appointing extra boards of examiners at will.

Pension surgeons should be as safe from interference as the surgeons in the army and navy. Army and navy surgeons are appointed on carefully ascertained merit, after serious examinations by competent boards selected for that purpose. All vacancies on Pension Examining Boards should be filled in the same way, under the Civil Service Examinations, the machinery for which now exists.

Nearly $1,000,000 is now appropriated annually for medical examiners' fees. Is this sum to be turned into the spoils of politics, and are the pensions growing out of the recent war to be settled on a party and political basis? If so, there is one thing less to be thankful for this Thanksgiving Day.

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MEDICAL NOTES.

A Death from Yellow Fever in Washington. — A death is reported from yellow fever in Washington, in the person of an engineer, lately returned from the Isthmus.

Inspection in the Late War. — The testimony given by Gen. J. C. Breckinridge, before the Investigating Committee, seems to account for a good many things which were done and left undone in connection with the army during the late war, and which have given rise to so much criticism. General Breckinridge was Inspector-General of the Army from 1881 until the outbreak of the war. He was regarded as a very competent Inspector. He was transferred to the line as a Major-General, with other trained and experienced officers in the same department. The Inspector's Department was practically abolished, and its duties turned over, in a large measure, to untrained, untried men.

The Vivisection Bill in the National Senate. — At a recent meeting of the Joint Committee on Vivisection, of the Scientific Societies of Washington, the following resolution was adopted: "Resolved, that the secretary be authorized to call the attention of the prominent medical and scientific journals of the country to the importance of the meeting of the American Humane Society, to be held in this city in December proximo, and to request that editorial notice be taken of the danger that the influence likely to be exerted at that meeting may cause the vivisection bill now pending in the Senate to be called up and passed." We appeal to our readers for their attention to this matter, and earnestly advise them to write to their respective senators and representatives in regard to it.

BOSTON AND NEW ENGLAND.

The Boston Medical Library. — All members of the profession are cordially invited to attend a meeting of the Boston Medical Library, which will be held at 19 Boylston Place, Tuesday, November 29th, at 8 P. M., to consider the question of raising funds for a new building.

Bequest to the Cambridge Hospital. — By the will of Alice Sargent, wife of Samuel Duncan Sargent, which has been lately filed at the Suffolk Probate Office, the sum of $3,000 is bequeathed to the Cambridge Hospital.

Overpressure in the Public Schools. — At the request of a sub-committee of the Boston School Committee, appointed to examine into the matter of alleged overpressure in the schools, the department of Municipal Statistics has undertaken a compilation of statistics in regard to the effect of school life upon the children in the public schools, with a view of ascertaining if there are any indications of overwork or overconfinement. Some new and interesting material has already been gathered, and the way paved for a more thorough examination of this very interesting subject.

Death at the Age of One Hundred and One. — Mrs. Sophia Walbridge Winne, the oldest person in Bennington, Vt., died November 18th, aged one hundred and one years.

The Control of Tuberculosis. — The State Board of Health of Connecticut has issued a circular (No. 73) for public information on "Consumption, its Cause and Means of Prevention." The Board, believing that any effort to restrict and control the prevalence of consumption will be a failure without the hearty and intelligent co-operation of the public, hopes that the information which it gives will awaken an interest which will bring practical results.

NEW YORK.

"Apparent Death." — A paper on "Apparent Death," read before the Society of Medical Jurisprudence by Dr. Henry J. Garrigues on November 14th, has attracted considerable comment. As the law of the State now stood, he contended, there was nothing to insure people against being buried alive or killed by an undertaker. Danger of taking live persons for dead, he said, remained even after a trial of all the ordinary tests, not one of which but was liable to fail under certain conditions. There was only one sure proof of death, and that was decomposition. Incidentally he expressed the opinion that the subjects of electrocution might perhaps be restored to life, basing his argument on the fact that persons and animals struck by lightning sometimes survived. Dr. Garrigues did not altogether favor the custom of some European countries of having physicians appointed to examine every body and issue the death certificates, as he feared that politics might creep into the appointments and lead to the selection of incompetent men. In his opinion the regularly authorized practitioner of medicine could perform this duty with perhaps greater safety, but in every instance they should be required to certify that they had personally examined the body and give their testimony to the presence or absence of all signs of death. Until such certificate was made he thought the supposed dead should be treated as living, and nothing done that would pain or hurt them if alive.

The New York Medico-Legal Society. — At the annual meeting of the New York Medico-Legal Society, held November 16th, the following officers were elected for the ensuing year: President, Albert Bach; First Vice-President, F. B. Downs; Second Vice-President, George W. Grover; Recording Secretary, Clark Bell; Corresponding Secretary, Moritz Ellinger; Treasurer, Thomas Darlington; Chemist, C. A. Doremus. A paper on "Yellow Fever in Cuba" was read by Dr. M. Ferrer, a native, in which the author expressed his conviction that it was possible to eradicate the pest from the island; and a paper on "The Conduct of the Santiago Campaign from a Medical Standpoint," by Dr. George Goodfellow, a member of General Shafter's staff during the war, was also presented.

Rapid Disposition of a Murder Case. — On November 14th there occurred what is said to have been the most rapid disposition of a murder case ever made in a New York County Court, in the Criminal Branch of the Supreme Court. William Frane was charged with killing his employer, Julius Smith, in July last, in the latter's restaurant, and Drs. Campbell and Van Santvoort presented evidence proving the man insane. Justice Gildersleeve, who was on the Bench, ordered him to be sent to the Hospital for Insane Criminals at Matteawan, and the entire case consumed but eighteen minutes.

A Gastrotomy on a Horse. — What is probably the first gastrotomy operation on a horse was recently performed by Dr. George A. Crowin, a veterinary of East New York. The stomach was opened for the purpose of removing a silver watch and some coins which had accidentally fallen from a stableman's pocket in the loft above into the animal's manger, and were swallowed with its fodder. The operation was entirely successful, and it is recorded that the watch continued to go for an hour after being swallowed.

The New York Society for the Relief of Widows and Orphans of Medical Men. — This society was organized in 1842. The fifty-seventh annual statement shows that the funds now amount to $230,781, yielding an annual income of $10,518. The members of the society now number 138, of whom 108 are life and 30 annual members. The number of benefactors living, 11, of whom 3 are laymen; deceased, 46, of whom 9 were laymen. The society has extended aid to 17 widows and 6 children of deceased members during the past year.

A Decreased Mortality. — In the four weeks ending October 29th there was a considerable decrease in the mortality of the city as compared with the four weeks preceding, the average number of deaths per week representing an annual death-rate of 17.62, against 22.18 during the four weeks ending October 1st. It is noticeable that the death-rate in the weeks ending October 15th and 22d was exactly the same, namely 17.30. The most marked decrease in mortality was, naturally, with the advance of the autumn season, in the class of diarrheal diseases, the weekly average of deaths from which was 63.75, against 196.75 in the four weeks preceding.

St. John's Guild: A New Floating Hospital. — At the annual meeting of St. John's Guild, held November 9th, it was shown that between July 6th and September 10th the summer work accomplished was in brief as follows: 60,144 children and their mothers treated on Floating Hospital; 11,403 baths given on Floating Hospital; 2,507 children and their mothers treated at Sea Side Hospital, 17,350 days of hospital treatment; 216 children treated at Children's City Hospital, 6,501 hospital days; 1,959 children attended by Special Relief Department, and 6.464 visits made. The daily average attendance on the Floating Hospital trips was 1,273. On account of the increasing needs of the city in its consolidated form it was explained that an additional floating hospital was imperatively demanded, and the construction of one was determined upon. The estimated cost is about $35,000, and special efforts will be made to raise the required sum and have the new boat ready by the first of July next.

Miscellany.

THE BACILLUS ICTEROIDES.

In the preliminary report, just published (November 11th) by the Marine-Hospital Service of medical officers detailed by direction of the President as a commission to investigate in Havana the cause of yellow fever, Surgeon H. D. Geddings states:

"Experiments had been begun upon the toxins of the bacillus icteroides, both precipitated and liquid, when it became necessary to suspend the work in Havana and to return to the United States on the 15th of March, 1898, since which time further investigation has been prevented by other duties in connection with epidemic work in the Southern States.

"It is here necessary to say a few words in connection with the claim of identity of the bacillus icteroides of Sanarelli and the bacillus "X" of Sternberg, which has recently been made. It is inconceivable to my mind how such a claim can be sustained by any one who has carefully studied and differentiated the two organisms. The bacillus "X" is coarser, longer and stouter than the bacillus icteroides; originally quite motile when isolated in Havana several years ago, it is now an organism, hardly as motile as the ordinary colon bacillus; in its growth it produces fermentation in both lactose and glucose agar, with a gaseous product quite similar in composition to the products of the colon bacillus; it produces acid in its growth; its production of indol is well marked and excessive, and lastly it readily coagulates milk. Indeed it would seem that the bacillus "X" is simply and solely a well-marked and accentuated colon bacillus. It is pathogenic, to be sure, for rabbits, guinea-pigs and other of the lower animals, but the time has long since passed when the colon bacillus can be considered as harmless and non-pathogenic.

"It has also been objected that the bacillus icteroides too closely simulates the colon bacillus. To this it can only be said that in its characteristics of growth as previously detailed in this article there is a wide difference, nor is its similarity nearly so great as is that of the bacillus typhosus to the bacillus coli communis. The bacillus icteroides (Sanarelli) produces toxins, precipitable by ammonium sulphate, of well-marked intensity and potency, much more so than the toxins precipitated from bacillus "X" and ordinary colon bacillus.

"The agglutination and arrest of motility experiments of Archinard and Woodson would seem to make the argument in favor of the pathogenicity of the bacillus icteroides all the stronger.

"In concluding this preliminary and indepeudent report, which would indicate that the bacillus icteroides of Sanarelli is the specific agent in the causation of yellow fever, I would beg to recommend that opportunity be given for further experimentation on lower animals with its toxins, and with cultures if necessary, and that both be tested in connection with the antiamaryilic serum prepared according to the methods of Sanarelli."

The two members of this Commission who were forced to abandon Havana on account of the war and have since been on duty in the Southern States have now been ordered to return to Havana and continue their investigations, their laboratory having been undisturbed during the war.

THE "TRIPOD OF LIFE."

Apropos of the imminence of the season for inaugural addresses, the *British Medical Journal* for September 24th makes the following apposite remarks on the frequency with which stock phrases are misquoted, misapplied and ascribed to wrong authors.

"We do not," says the editor, "wish to add to the anxieties of those who will go through the fatiguing duty of haranguing a medical school early next month, but we may win some gratitude by reminding them of Dr. Gee's warning in the current volume of the *St. Bartholomew's Hospital Reports* as to the use of the term 'Tripod of Life.' A mistake about the authorship of a phrase is not serious, and it is quite allowable for the lecturer to say, 'as a great authority has remarked,' or, if very uncertain, 'as has been said.' But the term itself must be expressed correctly — that is, literally, or, at the most, with such grammatical modifications as will not alter its sense. The lecturer, too, must never modify the original application of the term, except on his own responsibility, openly declared before his audience. The 'tripod of life' is a phrase which has been particularly ill-handled in the way above indicated. Dr. Gee quotes Huxley's remark in his well-known 'Elementary Physiology.' 'These three organs,' says the great biologist, 'the brain, the lungs and the heart, have been fancifully termed the tripod of life.' Many of us, we suspect, think that Huxley was the actual inventor of the term. He admits that it is otherwise; unfortunately his quotation is not only incomplete, but also inaccurate. This was not Huxley's fault, as Watson, from whom Huxley seems to have taken the term, falls into the same error. Watson, in turn, must not bear all the blame, as he apparently quotes Lænnec. It happens that Lænnec was a pupil of Bichat, who taught that all kinds of sudden death begin by the interruption of circulation, respiration and the functions of the brain. Lænnec seems to have compounded his master's teaching with a sentence in Bordeu's *Recherches sur les Maladies Chroniques:* 'The brain, the heart and the stomach are thus the triumvirate, the tripod of life.' Elsewhere in the same work Bordeu writes: 'The head, the epigastric and precordial regions, three important centres, and the true tripod of life' (*trépied de la vie* are the original words in both sentences). Let the inaugural lecturer remember the above remarks and thank Dr. Gee; let him take warning as to other phrases, and make sure that he quotes them accurately after finding their original source. For in this instance, let it be noted, the inventor of the phrase made the stomach, not the lungs, one of the legs of the tripod, contrary to what is represented by those who now speak of the 'tripod.'"

THERAPEUTIC NOTES.

Treatment of Tuberculosis by Medicated Serums. — In accord with Grancher's view, that the two necessary factors for the development of tuberculosis are a low state of nutrition in the organism and the presence of bacilli therein, Berlioz[1] considers strengthening of the organism as the principal treatment. With this in view, he utilizes the normal serum of the blood of an ox (said to possess the property of stimulating nutrition), into which he incorporates the antituberculous remedy, namely, phosphate of guaiacol. He also adds to his serum the extracts of various organs, as the testicle, liver, spleen, cerebrum, lungs, thus combining serum-therapy with opotherapy. The employment of these serums, which are administered as injections in the quantity of one ounce per day, produced chiefly two results: (1) an increase in the patient's weight (in one case twelve kilogrammes in three months, in the other four kilogrammes in fifteen days), and (2) an increase in the amount of the excreted urea, which doubled or even quadrupled. Alongside with the general improvement, the cough, the expectoration and the sweating were also relieved; there was at the same time some amelioration in the local symptoms. The treatment must be continued for weeks or even months. Acute tuberculosis is no contraindication. Berlioz cites two cases in which an increase in weight took place, notwithstanding the fever, while the local lesions retrogressed considerably by the end of two or three months.

For Alopecia (Basil).

℞ Acidi hydrochlor. . . . . ʒ i
Alcohol . . . . ℥ iv
Sig. Rub into the affected parts every evening on retiring to bed.

Mental Diseases. — In discussing the treatment of mental diseases by hydrotherapy and balneotherapy, Dr. Thomsen[2] draws, among others, the following conclusions: (1) We possess, as yet, no exact hydrotherapy for mental diseases, because, on one hand, the anatomo-pathological processes underlying the causation of these diseases are not known exactly, while, on the other hand, we are as yet at sea regarding the physiological effects of the application of many hydrotherapeutic procedures. (2) Strong douches, low temperature, and similar pronounced measures are to be avoided. (3) In the acute psychoses, which are characterized by excitability, as mania, exhaustive psychosis, etc., systematic hydrotherapy, intelligently employed, is of great importance. Warm baths, if used regularly and repeatedly, tend to quiet excitability and induce sleep; the same applies to all those cases for which a moist pack acts as a quieting factor; the choice between the pack and the warm bath will depend on the condition of the patient's strength, his idiosyncrasies, his opposition to one or the other of the measures, etc. (4) For apathetic, stuporous and generally indifferent patients, next to the warm bath, the half-bath, followed by cool sponging, is the most effectual means of influencing favorably the circulation and metabolism.

Correspondence.

PROFESSORSHIPS OF MILITARY MEDICINE.

South Boston, November 21, 1898.

Mr. Editor: — Apropos of the many criticisms of the management of the medical department in the Spanish-American war, as one who has served in Southern camps for five months, I would suggest that the best way to approach perfection in military medicine and surgery would be to establish a chair on these branches in every reputable medical college in this country. The different branches of these subjects, including hygiene, transportation of the injured, the management and organization of field hospitals, red-tape of the service, etc., could be taught to all medical students by a course of lectures extending over one year. Even though the knowledge thus gained was never used, it would be no burden to carry and would prove useful in civil practice.

The knowledge of army red-tape would give the student an insight into methods which would be of some benefit to him in conducting his ordinary business affairs.

When the tocsin of war sounds again it should find the medical profession, as a body, ready to render its best assistance, without the preliminary training which is now required in order to do effective work. In the late war our profession as a whole did noble and conscientious work, and whatever may have been lacking in its effectiveness was not due to ignorance and incapacity as far as ordinary professional duties were concerned, but to inexperience in military medicine. Hoping that another year will find Harvard taking the lead in establishing a chair on this important branch, I remain

Yours respectfully,

William H. Devine, M.D.,
Late Major and Acting Chief Surgeon,
2d Division, 2d Army Corps.

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[1] Munch. med. Woch., October 4, 1898.

[2] Cong. de la tuberculose, 1898; Bulletin général de Thérapeutique, September 15, 1898.

SOCIETY NOTICE.

The Boston Medical Library.—A meeting of this Society will be held at 19 Boylston Place, Tuesday, November 29th, at 8 p. m., to consider the question of raising funds for a new building.

All members of the profession are cordially invited to attend.

O. F. Wadsworth, M.D., *Secretary*.

RECENT DEATHS.

Thomas Runnells Clement, M.D., M.M.S.S., died at Osterville, September 24, 1898, aged seventy-five years.

William Newcomb Stone, M.D., M.M.S.S., died in Wellfleet, October 17, 1898, aged fifty-three years.

BOOKS AND PAMPHLETS RECEIVED.

A Simple and Rapid Method of Detecting Tubercle Bacilli in Fluids. By E. W. Hammond, Montreal.

The Twenty-ninth Annual Report of the State Board of Health of Massachusetts. Boston: Printed by the State. 1898.

A New Dissection showing the Internal Gross Anatomy of the Hippocampus Major. By J. G. M'Carthy, M.D., Montreal. Reprint. 1898.

On the Stages and Forms of Syphilis, with more Especial Reference to the Hepatic Manifestations of the Disease. By J. G. Adami, M.A., M.D., F.R.S.E., Montreal. Reprint. 1898.

On Resection of the Gasserian Ganglion, with a Pathological Report on Seven Ganglia removed by Professor Keen. By W. W. Keen, M.D., LL.D., and W. G. Spiller, M.D., Philadelphia. 1898.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects Second Series Vol III. C. Czygan. Washington: Government Printing Office. 1898.

An Epitome of Human Histology for the Use of Students in Connection with Lectures and Laboratory Work. By Arthur W. Weysse, A.M., Ph.D., Instructor in Biology, Massachusetts Institute of Technology, Boston, U. S. A. New York, London and Bombay: Longmans, Green & Co. 1898.

Descriptive Catalogue of the Anatomical and Pathological Specimens in the Museum of the Royal College of Surgeons of Edinburgh. By Charles W. Calheart, Conservator; Fellow of the College. Vol. II. Diseases of the Skin, Nervous System, Eye, Alimentary Canal and Urinary Organs. Edinburgh: James Thin. 1898.

A Primer of Psychology and Mental Disease, for Use in Training Schools for Attendants and Nurses in Medical Classes. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich., etc. Second edition, thoroughly revised. Philadelphia, New York and Chicago: The F. A. Davis Co. 1898.

A Manual of Otology. By Gorham Bacon, A.B., M.D., Professor of Otology in Cornell University Medical College, New York; Aural Surgeon, New York Eye and Ear Infirmary. With an introductory chapter by Clarence John Blake, M.D., Professor of Otology in Harvard University. With 110 illustrations and a colored plate. New York and Philadelphia: Lea Brothers & Co. 1898.

Pathology and Morbid Anatomy. By T. Henry Green, M.D., Lecturer on Pathology and Morbid Anatomy at Charing Cross Hospital Medical School, London. New eighth American from the eighth and revised English edition. In one very handsome royal octavo volume of 600 pages, with 215 engravings, many being new, and a colored plate. Philadelphia and New York: Lea Brothers & Co. 1898.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. Third edition, revised and enlarged by Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital, etc. Illustrated with 204 engravings and 13 colored plates. Philadelphia and New York: Lea Brothers & Co. 1898.

American Pocket Medical Dictionary. Edited by W. A. Newman Derland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania; Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Philadelphia W. B. Saunders. 1898.

A Manual of Venereal Diseases. By James R. Hayden, M.D., Chief of Clinic and Instructor in Venereal and Genito-Urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York; Visiting Genito-Urinary Surgeon to the New York City Hospital, Assistant Visiting Genito-Urinary Surgeon to Bellevue Hospital. With 54 illustrations. New York and Philadelphia: Lea Brothers & Co. 1898.

The Human Body, A Text-Book of Anatomy, Physiology and Hygiene, with Practical Exercises. By H. Newell Martin, D.Sc., M.D., M.A., F.R.S., formerly Professor of Biology in the Johns Hopkins University and of Physiology in the Medical Faculty of the same. Fifth edition, revised by George Well Fitz, M.D., Assistant Professor of Physiology and Hygiene in Harvard University. New York: Henry Holt & Co. 1898.

A Treatise on Diseases of the Ear, together with a Brief Sketch of the Anatomy and Physiology of this Organ. By Albert H Buck, M.D., Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons, Medical Department of Columbia University, New York; Consulting Aural Surgeon, New York Eye and Ear Infirmary and the Presbyterian Hospital. Third revised edition. New York: William Wood & Co. 1898.

Text-Book of Medical and Pharmaceutical Chemistry. By Elias B. Hartley, B.S., M.D., Ph.G., Professor of Chemistry and Toxicology in Long Island College Hospital; Dean and Professor of Organic Chemistry in the Brooklyn College of Pharmacy; late Consulting Chemist to the Department of Health of the City of Brooklyn, etc. Fifth edition, revised and enlarged. With 96 illustrations. Philadelphia: P. Blakiston's Son & Co. 1898.

Practical Uranalysis and Urinary Diagnosis; A Manual for the Use of Physicians, Surgeons and Students. By Charles W. Purdy, M.D., LL.D., Queen's University, Fellow of the Royal College of Physicians and Surgeons, Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School, etc. Fourth revised edition with numerous illustrations, including photo-engravings and colored plates. Philadelphia: The F. A. Davis Co. 1898.

Scorbutus in Infants; Some California Cases. Erasion of the Knee in Children, with Conservation of the Epiphyseal Cartilages. Questions in the Treatment of Congenital Dislocations of the Hip. Traumatic Dislocation of the Hip in Children, Old and Recent. A Preliminary Report on the Treatment of Congenital Dislocation of the Hip by Operative and Manipulative Methods. By Harry M. Sherman, A.M., M.D., San Francisco, Cal. Reprints. 1897–98.

Manual of Diseases of the Skin, with an Analysis of Twenty Thousand Consecutive Cases and a Formulary. By L. Duncan Bulkley, A.M., M.D., Physician to the New York Skin and Cancer Hospital; Dermatologist to the Randall's Island Hospitals; Consulting Physician to the New York Hospital; Hospital for Ruptured and Crippled and Manhattan Eye and Ear Hospital. Fourth edition, revised and enlarged. New York and London: G. P. Putnam's Sons. 1898.

A Pocket Medical Dictionary, giving the Pronunciation and Definition of the Principal Words used in Medicine and the Collateral Sciences, including very Complete Tables. By George M. Gould, A.M., M.D., Author of "The Illustrated Medical Dictionary," "The Student's Medical Dictionary," Editor of the Philadelphia *Medical Journal*, etc. A new edition, entirely rewritten and enlarged, including over 21,000 words. Philadelphia: P. Blakiston, Son & Co. 1898.

Saunders' Question Compends, No 7. Essentials of Materia Medica, Therapeutics and Prescription Writing. Arranged in the Form of Questions and Answers, prepared especially for Students of Medicine. By Henry Morris, M.D., Fellow of the College of Physicians of Philadelphia; Honorary Member of the Altonia Academy of Medicine; Member of the Pathological Society of Philadelphia, etc. Fifth edition, revised and enlarged. Philadelphia: W. B. Saunders. 1898.

Quiz Compends, No. 5; a Compend of Obstetrics, Especially Adapted to the Use of Medical Students and Physicians. By Henry G. Landis, A.M., M.D., late Professor of Obstetrics and Diseases of Women in Starling Medical College. Revised and edited by William H. Wells, M.D., Adjunct Professor of Obstetrics and Diseases of Infancy in the Philadelphia Polyclinic; Instructor in Obstetrics in the Jefferson Medical College, etc. Sixth edition, illustrated. Philadelphia: P. Blakiston, Son & Co. 1898.

The Care of the Baby, a Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, to the Methodist Episcopal Hospital and to the St. Agnes Hospital, Philadelphia; Member of the American Pediatric Society and of the Association of American Physicians. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

Contributions to Orthopedic Surgery. By A. Sydney Roberts, M.D., late Surgeon to the Philadelphia Hospital; Orthopedic Surgeon to the Out-patient Department in the University Hospital; Instructor in Orthopedic Surgery in the University of Pennsylvania; Out-patient Surgeon to the Episcopal Hospital, etc. With a brief biographical sketch by James K. Young, M.D., Professor of Orthopedic Surgery, Philadelphia Polyclinic; Clinical Professor of Orthopedic Surgery, Woman's Medical College of Pennsylvania; Instructor in Orthopedic Surgery, University of Pennsylvania; Assistant Orthopedic Surgeon, Hospital of the University of Pennsylvania. Philadelphia. 1898.

Original Articles.

DISTRICT-VISITING NURSING IN OBSTETRIC PRACTICE.[1]

BY A. WORCESTER, M.D., WALTHAM, MASS.

Thirty years ago Dr. H. R. Storer eloquently pleaded for the introduction of trained nurses.[2] There were then in this country no training schools, neither was there any generally recognized need of trained nurses. And even nowadays in midwifery practice the necessity of first-rate nursing service is not sufficiently recognized, or, if so, the efforts made to supply the need are wofully ineffective.

True, the rich have trained nurses in their fashionably infrequent confinements, perhaps in waiting for a month beforehand and in service as nursemaids for three months afterwards. And many moderately well-to-do families half bankrupt themselves to pay to the trained nurse more per week than the bread-winner of the family earns. But for the poor and the average wage-earning classes there is yet almost no provision of proper nursing services; probably not one woman in fifty in this State has a trained nurse in her confinement.

The supply of trained obstetric nurses is still pathetically small. And so long as most training schools persist in ignoring this necessary branch of a nurse's training it is not unlikely that the nurses' registries will continue overloaded with unemployed nurses and that the greatest need of trained nursing will continue unsupplied.

If most of the medical schools likewise ignored midwifery very probably graduates in medicine would have less to do and most certainly women in labor would manage to get on without them. Even in this age of specialists a general education in all the different branches of medicine is deemed essential, and some experience in general practice is deemed advantageous to the physician or surgeon who becomes a specialist. But for nurses a strictly limited and consequently incomplete education is thought sufficient and perhaps even an advantage. Not only do the general hospitals graduate nurses who, for instance, have never seen a case of childbirth, but the specialist hospitals also graduate nurses who, perhaps, have never seen a sick adult, or a male patient, or a case of any of the common contagious or infectious diseases. From the hospital point of view this is all well enough. Specialist nurses are what each hospital wants. But nurses who are specialists, not from preference but from ignorance of every other branch of nursing, are not the kind wanted in general family practice. In the large cities, where families are learning to employ specialists in medicine and surgery, calling first this doctor and then that, according to the anatomical location or supposed pathology of their ills, and where scores of nurses card-catalogued according to their specialities are patiently waiting for work, the grotesqueness of the present conditions is not fully appreciated. But in the smaller towns and in the country, where specialists do not thrive, the old-fashioned untrained nurses are in little danger of being supplanted by graduate nurses who are either unable or unwilling to take cases as they come. I believe the same is also true as regards the large bulk of the population of cities. In general family practice trained nursing is not likely to be common until nurses are properly trained for such service, and this desirable result will not be attained until training schools are established and managed with the primary purpose of educating nurses for the general practice of their profession. In view of the recent introduction of trained nursing in this utilitarian country, it is not strange that educational ideals have been made secondary to the needs of the hospitals where training schools have been established, and that hospital nursing has consequently advanced to its present overweening importance. But it is remarkable that trained nurses themselves should continue so ignorant of the history of their own profession and so oblivious of other and equally important departments of nursing as to rank themselves according to the number of beds in the hospitals where they were trained. To such length has this folly gone that the Association of Training School Superintendents admits to membership only such as have been trained in hospitals of over fifty beds, unmindful of the fact that by such a test many of the greatest nurses living — even Florence Nightingale and Elise Aberdieck — are ineligible. With such false standards flaunted before them what hope is there of abatement of the insufferable hospitalism that now hinders many graduate nurses in making their way in private nursing!

In Germany, where the modern profession of nursing began, the great training schools still control and operate the hospitals in which the student nurses receive that part of their training. In Great Britain the matron of the hospital is the real as well as the nominal head of the whole institution. Only great teachers of nurses are given these matronships, and in the training schools under their leadership the profession of nursing steadily advances. In this country most training schools are mere adjuncts of the hospitals, designed and managed solely for them, indeed, some of the smaller hospitals are in part supported by the student-nurses' earnings in private service. The cart is before the horse, and if not going backwards at least no general advance is being made in our system of training nurses.

Among the graduate nurses, however, there are many encouraging signs of awakening professional spirit, which will most surely lead to higher educational ideals. The medals and diplomas of their own particular schools mean far less to the graduates of to-day than to those of a few years ago. Post-graduate courses for nurses in the specialist hospitals as fast as introduced are flooded with applications. Clinics and lectures for graduate nurses are multiplying and improving.

In Canada there is now being established, in commemoration of Queen Victoria's Diamond Jubilee, an order of District-visiting Nursing that promises to be of immense advantage to the profession of nursing. In this Victorian Order nurses who have been graduated from approved training schools will be trained in the art of district-visiting nursing, which is as different and distinct from hospital nursing as general family practice of medicine is different from practice in the wards and amphitheatre. The underlying principles in both are, of course, the same, but the methods and means employed bear slight resemblance to each other. For this very reason extra training in district-visiting nursing, as now offered in Canada, will bring into due prominence the essentials of the art. After such a course nurses will be less bound to fads and more willing to believe there may be several other equally good ways of working besides their own.

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[1] Read before the Obstetrical Society of Boston, May 17, 1898.

[2] Nurses and Nursing.

Not least among the advantages of the Victorian Order will be the establishment of an educational standard for training schools. Graduates from only such schools as are approved will be accepted as probationers of the Order. And schools that fall below will thus be forced to rise to the standard required.

But the chief advantage of the Victorian Order is the rescue of district-visiting nursing from its present obscurity. Henceforth, at least in Canada, it will receive deserved attention. And it is greatly to be hoped that in the United States also more attention will be paid to this too neglected department of nursing.

There are, it is true, a few district nursing stations in some of our cities, and, doubtless, some of the visiting nurses in such employ have picked up some parts of the art. But there is no instruction given in this department of nursing in the large training schools. And so little is this great lack appreciated that graduates of such schools have offered their services as teachers of district-visiting nursing and as superintendents of the recently established stations in Canada. Such sublime self-confidence is ahead of the Irishman's who was sure he could play on the violin although he had never tried; but he did not offer himself as a teacher.

In the large training schools little change need be expected. They serve their hospitals admirably, and admirable hospital nursing is all that is there wanted. Hope for the professional improvement of nursing rests upon the development of the smaller schools, which, not being fast bound to the service of large hospitals, may follow more and more faithfully high and truly educational ideals. Fortunately in the training schools connected with small hospitals hospital nursing cannot overshadow other branches of nursing. And as these small schools are rapidly increasing in number, and as their student nurses even now in this State outnumber the student nurses of the large hospital training schools, the time perhaps is not far off when graduate nurses will no longer rank themselves by the size of the hospitals which own their respective schools, but rather by the educational breadth and thoroughness of the training given therein.

In the more general training, that is of necessity given in the smaller schools, neither obstetric nursing nor district-visiting nursing is slighted. Indeed, both branches are taught simultaneously; for a large part of the visiting nursing is for obstetric service, where is afforded the best possible opportunity for teaching to student nurses the art of obstretic nursing.

Having for the past thirteen years devoted much time to this kind of teaching I venture to submit this outline of what I try to teach.

The first principle of district-visiting nursing is the adaptation of service to the needs of the family, and thus securing the willingness of the family and patient to accept such service. This implies the carrying out of one's method of nursing only so far and so fast as can be done without provoking opposition.

PREPARATION OF THE LYING-IN ROOM AND BED.

There will always be found too much furniture in the room to be prepared for labor, as the room will have been used for other purposes. The nurse should have an idea of what the room should contain before she enters, and then as she moves about, by making little changes here and there the room will get nearer and nearer to the best possible condition for labor. Getting out of the room the useless furniture I put first in the process of making ready, and storing it in that part of the house through which it will not be necessary to run a few minutes later. Rocking-chairs are a special abomination but bric-a-brac is worse. A table with a bare top should be ready for the doctor's use when he comes. The top should be clean, or if altogether too dirty it can be made fit for use by spreading newspapers or clean cloth over it. The blinds should be open, if it is daytime, and newspaper curtains should cover the sashes if windows of opposite houses command the room. Plenty of light is more often lacking in the daytime than at night when artificial light can be had, and good light is sometimes of life-saving importance. The right side of the bed should be accessible and should receive the greatest supply of light. The protection of the carpet often fails. It is easy to spread papers over it but hard to make the papers stay in place. A low tub or some such vessel underneath the bed is the best protection. It can be pulled out to project a little where and when it is wanted.

A suitable narrow bed can seldom be had. Sometimes a little cot-bed may be found for the labor and the other bed used for the patient afterwards. The beds we find in district-visiting work are generally unsuitable in every way. The most expensive part of the bed is generally the mattress, not so much so among the people of some nations as of others. A feather bed is a very expensive thing; a hair mattress is also expensive, and the cheapest kind is too valuable to let it be damaged needlessly. It is very essential to protect the mattress from liquids soaking into it, so the best protective obtainable should be used for this purpose, especially on the right side of the bed. Stout wrapping paper is almost as good as a rubber sheet. Newspapers are better than nothing. The under sheet should be drawn smoothly and carried well under the right side of the bed. The draw-sheet should likewise be tucked well under the mattress on the right side and also fastened in some way on the left side of the bed. If not long enough to tuck under, it may be pinned to the mattress ticking. This much of the bed may be regarded as permanent. For its temporary protection a second draw-sheet should be put on so as to cover the bed and also the right side of the bedstead. In each draw-sheet should be folded either rubber sheeting or some sort of waterproofing.

PREPARATION OF THE PATIENT.

Braiding the hair is quite necessary, especially if the hair is plentiful. When it comes to cleaning the patient it must be remembered that more than half find themselves unable to take care of themselves as pregnancy advances, and to have a young nurse come in and urge a bath upon the patient as preparation for the doctor's visit may offer great violence to her feelings. If tact is used the patient will probably be grateful to be put in order for the doctor's visit. There is no necessity for antiseptic treatment of much of the body. It is impossible to conduct an obstetric case in an absolutely aseptic manner. The body can be made aseptic only by violent chemical agents, such as permanganate of potassium and oxalic acid. Soaking in these agents, after soap and nail-brush work, will produce an aseptic condition. But when it comes to sterilization of the vagina and vulva by such extreme precautions as are taken in operating-rooms on patients under ether, in obstetric cases such treatment cannot be thought of. It is sufficient to clean with soap and water between the hips and knees, especially the vulva, inner thighs and nates. Then cloths soaked in corrosive sublimate, 1 to 1,000, should be pressed against these parts instead of scrubbing them. The cleansing enema must not be forgotten. If washed out beforehand, the rectum will at the last discharge only mucus.

The nightdress should be well rolled up and pinned under the right arm. If a shirt is worn it should also be fastened up in the same way. There is little comfort in a clean nightdress after labor, if the shirt is soaked. The dressing of the patient is completed by tying, at the right-hand side of the patient, a sheet folded over the waistband.

Vaginal examination of patients in labor is absolutely essential in district-visiting nursing. But after graduation nurses are employed more in families where the doctor is expected to be dancing in attendance, and he, rather than the nurse, is depended upon for such examinations. In Waltham, physicians have come to depend upon the nurse's knowing how in this way to keep watch of the labor and to report its progress, while physicians elsewhere can hardly believe that nurses can be depended upon for such work. And indeed, some otherwise fine nurses teach to the contrary, in their ignorance maintaining that such work is not proper for nurses. Nevertheless, the custom will surely grow in spite of what physicians and nurses feel and say. It properly belongs to obstetric nursing. The necessity of physicians running into the house often during labor exists only where the nurse is incapable of informing him when he is needed. At the beginning of the century it was considered outrageous for any man physician to attend women in labor. That was left to the midwives. It was because they were so uneducated that the man obstetrician has come into fashion, but there is no intrinsic fitness in his serving as a watchful nurse at the bedside for forty-eight hours before he is wanted.

In order to examine properly it is necessary first to have the patient way out at the right side of the bed, well over the edge, hips firmly placed, their weight on left trochanter resting firmly on the bed where supported by the sideboard of the bedstead. The left thigh should be flexed forty-five degrees. The right thigh will be steadily supported and properly flexed if the right foot is caught under the hollow of the left knee. With the thighs in this position the axis of the vagina is then in the direction of the left thigh. Thorough scrubbing with soap and water, and afterwards in corrosive sublimate, 1 to 1,000, while it does not prepare hands for handling ligatures or for wringing out sponges for abdominal operations, does prepare well enough for vaginal examinations. There is no need of any lubricant, if the vulva is properly separated by the fingers and thumb of the left hand before inserting the two first fingers of the right hand. Sterile vaseline might be used, but for repeated examinations even that is objectionable because very hard to wash off, and it catches all the dirt it encounters. In separating the vulva for examination, pass the left hand in front between the thighs. Such examinations ought to be made in plain sight of what one is doing. Always enter the vagina posteriorly, keeping well to its posterior wall, with two fingers in line with the long diameter of the vulva from front to back, rotating arm and shoulder as you lean forward over patient, so that the ball of the finger comes forward against the surfaces to be examined by touch. Explore one quarter after another. Remember that what is wanted is mainly information as to the os, the condition of the cervix and the presentation.

If the physician has not already visited the patient, the nurse as soon as possible after her arrival at the case should send him a note describing the condition of the patient and the progress already made. Unless otherwise instructed it is her further duty in normal cases of labor to send for the physician when the first stage is nearing its end. The nurse is therefore responsible for the proper summoning of the physician, and in the mean time for the assurance to patient and physician that all the conditions are normal. Proper training and experience amply qualify the nurse for this service.

I pass over the nurse's duties during the second and third stages of labor, as the physician's assistant or, in case of his absence, as his lieutenant. I have already attempted to do that.[3] And in this paper I want to set forth the especial duties of the district nurse in midwifery service.

In washing up after labor no intra-vulva washing is permissible. The line between the mucous membrane and the skin limits the nurse's service. Any intra-vulva cleaning must be done by the physician or under his orders. I remember some years ago a nurse's being called to account very severely by one of our famous obstetricians because on the labia minora, when perineal stitches were being removed later on, was found some of the vernix caseosa. That nurse would now be applauded. It would be officious and reprehensible for the nurse to attempt to scrub off that tenacious stuff. What better dressing could be applied? The line limiting the nurse's province may be found by holding the labia majora together while washing the vulva. In this way thorough cleansing can be effected without hurting or harming the patient.

If the bed has been properly made and the patient properly prepared it is astonishing how little needs to be done afterwards in removing every trace of the labor. After washing the patient and once rolling her half over, the sheet-skirt and the provisional draw-sheet can be removed, the binder and napkin applied, the nightdress brought down into place and all this in a very few minutes. I need not picture the confusion, the fuss and bother to all concerned where the clothing of both patient and bed has all to be changed. Nor can I now consider the great advantages to the baby in being first washed and dressed by a nurse who among other things knows enough *not* to fill its eyes with soap-suds, nor to stick the belly-band pins through its skin and then to give it gin to stop its howling. But let us hurry on to the consideration of the blessings to both mother and child that the district nurse can bring on her after-visits.

Were it necessary for the poor woman to choose between the service of a district-visiting nurse for an hour or so each morning for the week of her confinement and the calls of the physician, there can be no question which she should choose. For almost all the skilled nursing she needs can be given her on such calls, and for her care during the rest of the time she can safely depend upon her sister or daughter or friendly neighbors. Indeed it is in the instruction of these helpers that the district-visiting nurse has almost her greatest opportunity for good. They can be taught how to make the gruel and broth, how to dress and undress the baby, and how to do the thousand and one services needed in the lying-in room.

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[3] Monthly Nursing. D. Appleton & Co., N. Y.

The especial service of the trained nurse in confinement cases lies in precaution-taking, in the prevention of troubles. But for this it is not necessary that she shall be on constant duty at the case. It is enough, for instance, in the proper care of the nipples and breasts if she teaches the patient how to bathe and anoint the nipples, and if at the proper time she bandages the heavy breasts. And so in the care of the bladder. If eight or ten hours after the labor the nurse visits the patient and helps her to empty her bladder, the danger of retention and catherization is much diminished. The same is true in the care of the rectum. And indeed, over the whole range of the lying-in period, most of the usual suffering and trouble can be prevented by proper nursing and most of this advantage can be had where only district-nursing visits can be afforded.

To the very poor woman who otherwise could not have any nursing and at most only the occasional help of a kindly neighbor, the district nurse comes as an angel from heaven. During her labor she need not suffer the inquisition of the neighborhood, and during the following days she can at least rest in bed.

But, after all, it is not only to the very poor mothers and babies that district-visiting nursing comes as a blessing. It is neither for the submerged tenth, who cannot have either the luxuries or the necessaries of life, nor for the sublimated tenth of the population who can have everything except contentment, that there is the greatest need for planning improvements. Our chief responsibility is rather to the great middle class of self-respecting families of moderate means who pay for everything they have and yet can afford but few luxuries. To such families the maternity service of district nursing is indeed a boon. Instead of the cheap, untrained nurse, who fails both as nurse and house servant simply because she tries to serve in that dual rôle, a perfectly trained nurse can be had for the labor and for the few hours on following days, that is, for only such time as trained nursing service is needed. By paying full price to the district nurse by the hour; and by paying servant's wages to a servant, the total cost is less than for the service of even the cheapest kind of nurse who undertakes to do everything.

Inasmuch as in district-visiting nursing there is such grand opportunity for acquiring experience, which after all is the professional nurse's real capital, nurses are very willing to work in it for far less money return than they rightly expect when half their time is spent in waiting and much of the remainder in unnurse-like work or idleness in wealthy homes.

Wherever introduced, this sort of nursing will surely take deep root, because

(1) Nurses themselves recognize the opportunities so afforded for advancing in their profession.

(2) Physicians once accustomed to the assistance of such nursing in their midwifery practice will never be long without it.

(3) Families soon learn so to depend upon visiting-nursing service that the demand for it becomes steady and strong.

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A STUDY OF THIRTY CASES OF ANTRAL EMPYEMA.[1]

BY FREDERIC C. COBB, M.D., BOSTON.

The object of this paper is to study a series of cases of antral disease as to cause and treatment. The etiology is, of course, of the greatest interest since upon it hinges the prospect of cure. The antrum has always been considered a most intractable cavity, and we find in cases cited during the last ten years that surgeons have made wide openings in it, and even removed the bony walls in order to bring the mucous membrane of the two sides in apposition to each other, and thus stop suppuration. From my experience in these cases, I believe that the antrum is one of the most readily healed of cavities, if the cause of the suppuration is removed. This theory was invariably borne out in all cases due to dental causes. Even cavities which had suppurated for months healed in a few weeks with no other treatment than cleansing washes. One of the most surprising things to me has been the fact that teeth with diseased crowns but perfectly sound roots, as proved after extraction by the dentists, may give rise to antral empyema, since after their removal the disease promptly subsided. To this fact Grünwald alludes in his book "Die lehre von der Nasenhohlen Eiterungen." It is a practical point in the treatment of cases of dental origin to instruct the patient, where removal of a tooth is necessary, to bring to his physician the tooth after its extraction by the dentist, that he may see for himself that no root remains to keep up irritation. Where no tooth appears to be the cause of the empyema the x-ray will afford us valuable information as to the existence of old carious roots in the alveolus. I have seen two cases, one in which the dentist himself, after extracting a tooth, found some weeks later that he had left behind a small root, and another instance in which, although it gave no sign in the alveolus of its presence, such a root remained after extraction of the tooth by a dentist of good reputation. In spite of a long course of treatment the antrum failed to improve until on visiting a second dentist, while under treatment for another tooth, the former root was discovered and extracted, with immediate relief to the empyema. Such tooth roots will, I am informed by the dentist, sometimes work their way downward and outward very much as any foreign body in the tissues, and finally cause a projection which can be felt or seen in or above the alveolar process. Two of the dental cases should perhaps be ranked under foreign bodies in the antrum rather than as purely dental cases, although their cause was plainly attributable to the teeth. These, I think, are of sufficient interest to be individually described.

Miss C. came to me in March, 1896, referred by a very good dentist, who had washed and treated the antrum for some time through an empty tooth-socket. The history she gave was of a severe cold contracted about a year before, which had continued up to the present. On inquiry as to the teeth, it was learned that a second molar had given her pain at about the date of the beginning of her cold. The dentist had filled the tooth, and her nasal discharge which was bilateral, but rather more marked on the corresponding side, began soon after this and lasted all summer. In the fall the tooth was extracted and the antrum washed through the empty tooth-socket by the dentist into whose hands she then came. The antrum, however, showed no signs of healing, and in March of the next year she was sent to me. A careful examination of the teeth failed to show any imperfect ones. The socket of the second molar was empty and communicated with the antrum. Pus was seen oozing from under the middle turbinated bone. The odor was foul and very offensive to the patient. No signs of ethmoiditis were found, and she improved rapidly on thorough flushing of the antrum with antiseptics, but at once relapsed when treatment was discontinued. Finally, she brought me a small piece of black, hard substance, which she had passed from the nose, and which on heating gave out the characteristic smell of rubber.

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[1] Read (by title) before the Society of Rhinology, Otology and Laryngology, at Pittsburgh, May, 1898.

The only means of its introduction into the antrum was evidently through the dental cavity so long ago filled in the now extracted second molar. The rubber must have been injected in a melted condition and passed through an open dental canal into the antrum, solidifying as soon as cooled. The question now arose as to whether more rubber existed in the antrum, and the continuance of the symptoms rendering this probable, a larger opening was drilled in the alveolus, and the antrum was packed with gauze in the hope of entangling in its meshes some more pieces of rubber. The first attempt was unsuccessful, but on second trial the gauze was found to contain several small pieces of rubber similar to that first found.

The symptoms at once began to improve and in a few weeks they subsided, except for a slight irritation caused by the wound. As soon as the opening in the alveolar process healed all symptoms subsided and the patient has remained perfectly well.

A second case, also dependent on dental conditions, is cited because it is unusual, and because it shows that a long-continued antral empyema may subside quickly even after a tedious suppuration. R. H. P. came to the Boston Dispensary complaining of a foul unilateral discharge from the right nostril. Transillumination showed darkness on the right side. Examination of the nose revealed pus in the middle meatus, apparently coming from under the middle turbinated bone. On examination of the teeth the absence of the first molar was noted, and from the jaw above it pus was seen to be oozing. A sinus containing necrosed bone was suspected and a probe passed into the opening found its way into the antrum. As the probe seemed to encounter loose bone the alveolus was opened as near this point as possible, and a foreign body extracted which lay between the alveolar process and the antrum. On removal of this a clear passage to the antrum remained, in size about the diameter of a slate pencil.

This foreign body proved to be a twelve-year molar. As the boy was eighteen years of age and the discharge dated but three or four months back, the interesting question arises as to why the tooth lay so long encysted without having given rise to an emypema. The prompt subsidence of the discharge in this case is another proof of the tendency towards rapid healing of the antrum. In all other cases of carious teeth removal of the tooth was followed by prompt relief. The number of cases due to dental causes, including foreign bodies, was ten, or one-third of the whole number.

Seven cases were due to acute catarrhal conditions, and were characterized by severe rhinitis followed by discharge of muco-pus from one side only. The antrum on transillumination showed dark on the corresponding side while after the subsidence of the discharge it was again bright. An interesting point in this condition is the question whether or not the discharge in such cases is ever foul, as is the case in antral empyema due to bad teeth. In the seven cases mentioned it was not foul, although in one of them a bad taste was noticed. The average duration of these cases was three or four weeks. They required no treatment except cleansing sprays and washes. In one case out of the seven the antrum was washed through an opening in the canine fossa, but this case seemed to subside no more rapidly than the others which were not opened. The question arises in acute inflammation of the antrum whether the disease is primary in that cavity or not. Of course, if the ethmoid cells, as I believe to be the case, often discharge their contents into the antrum through the infundibulum, then these cases may have been acute ethmoid or frontal inflammation. At all events, the antrum, after the process was over, transilluminated as well as that of the other side, showing that it no longer contained purulent material. Another interesting point is the cause of the darkness on transillumination. That this cannot be due simply to the presence of pus is evident from the fact that no change can be noted after thoroughly washing out the cavity. That it is due to thickening of the mucous membrane was proved by microscopical examination of a core of bone removed on trephining the antrum through the alveolar process. The mucous membrane can be seen in the preparation to be enormously thickened, but the cilia remain intact, showing that the process does not necessarily destroy its integrity. The specimen referred to was removed from a patient who had undergone suppuration for more than a year.

Syphilis is a cause always to be considered in questions of antral disease. Of the total number of cases cited, four were undoubtedly syphilitic, and were proved to be so by the immediate effect of antisyphilitic treatment. They have unfortunately passed out of our observation, but were nearly well when last seen. The discharge in such cases is usually very foul, and has the odor peculiar to the necrosing condition of bone, and sequestra from the walls of the antrum or from the lower turbinate are often discharged with the pus. Of the thirty cases only one was malignant. In this instance the antrum was opened through the alveolar process and curetted, but the hemorrhage was so profuse that suspicion of a malignant growth was entertained, and some of the fragments curetted off were submitted to the pathologist and a diagnosis of sarcoma was returned. The tendency of the opening into the antrum is to close under ordinary conditions, but in cases of malignant growths it tends rather to increase in size, and this enlargement should always awaken suspicion of a malignant process. Marked hemorrhage on curetting should always awaken suspicion of malignancy, as should also the presence of considerable pieces of tissue or bone in the discharge.

Ethmoid disease was associated with antral suppuration in seven cases. Most of these were rebellious to treatment except where marked signs in the region of the middle turbinate were discovered. In one of these removal of the middle turbinate, which was enormously hypertrophied and polypoid, and carefully clearing out the ethmoid region was followed by complete cure. The antrum became bright again and the discharge ceased without opening into the antral cavity. Microscopical examination of the bone showed the presence of osteoblasts and new-formed osteoid tissue. When this was removed all discharge ceased and the patient has remained perfectly well.

In another case the removal of the middle turbinate was followed by cure, but coincidently one or two teeth were removed, and although these were found to have apparently sound roots, yet they render dubious the effect of turbinotomy. The general conclusion with regard to these cases is that where ethmoid disease complicates antral empyema the prospect of cure of the antrum is dependent on the curability of the ethmoid lesion. In such cases my experience is that it is unnecessary to open the antrum, but that all the attention should be directed to the ethmoid. In obscure cases where antral empyema exists, but where ethmoid disease is doubtful, packing the antrum with gauze and observing whether the discharge ceases or not is a good means of diagnosis. If the pus discharged still continues almost as profuse as before, then the ethmoid region is probably affected, but if it ceases at once we are justified in concluding that the source of the trouble is in the antrum itself.

Of thirty cases only one was plainly due to nasal obstruction. In this instance there was a polypoid growth, on removal of which the discharge and all the symptoms promptly ceased. I have been impressed in the study of these cases with the very large part played by affections of the teeth, and believe that no physician should neglect to have an examination of them made by a competent dentist. If any doubt exists as to the presence of tooth roots in the alveolus the x-ray should be called upon to decide the question. In cases where ethmoiditis, as shown by a cleft in the middle turbinate, necrosed bone in this region, or any other signs of ethmoid disease exist in connection with antral empyema, the former should be treated as the probable cause of the latter.

Syphilis and malignant disease should always be considered as possible factors, and the interior of the nose and mouth should be carefully examined for signs of either. Finally, acute cases not due to the teeth may and do get well without other treatment than cleansing washes, and this may be proved by the test of transillumination when used both before and after the subsidence of the symptoms.

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A CASE OF PERNICIOUS ANEMIA COMPLICATED BY TUBERCULAR INFECTION OF THE LYMPH NODES, LIVER AND SPLEEN.

BY FREDERICK L. HILLS, M.D., CONCORD, N. H.,
First Assistant Physician at the New Hampshire Asylum.

The following case is deemed worthy of record on account of the remarkable degree of anemia and of the unusual pathological findings.

The patient, a widow in her sixty-first year and a native of New Hampshire, was admitted to the New Hampshire Asylum for the Insane, December 6, 1893, with the following history:

Her mother died of cancer, her father of consumption. "Twenty-three years ago she had a tumor and at that time took to her bed." Symptoms of the "tumor" disappeared with the occurrence of the menopause, about which time she began the use of morphine. For twenty-three years she did not leave her bed, although there seemed to be no adequate cause for her invalidism. Upon the withdrawal of the morphine and about ten years before her removal to the asylum, she developed delusions against her husband and the girl who did the housework.

The diagnosis on admission was hypochondriasis.

She was of a cheerful disposition, quite intelligent and hopeful of recovery which she felt must be slow "as any physical exertion irritated the nerve and was very painful," as she expressed it. She had a habit of nodding her head for half an hour or so. This was caused by the nerve, she said, but when any one was about or her attention was engaged, the nodding did not take place. She had incontinence of urine.

She continued in the same frame of mind, and was induced to sit up in a reclining chair for a few hours, two or three times a week. By the middle of January, 1894, her general health had improved and she had gained in flesh. During the following month she made several attempts at walking, but only succeeded in taking five or six steps when supported by a nurse. She soon concluded that exercise was not good for her and gave it up. She then had frequent periods of despondency, but again took courage and in about two months made further attempts in the same line with more success. May 9th, the following entry was made in the case book: "Lately she has improved very much physically, has an excellent color, has gained in flesh and altogether is much better. Her friends were advised to take her home in the hope that the stimulus of a change would incite her to more effort and she was accordingly discharged. At home she improved rapidly. In a few months was able to walk and travel considerable distances without fatigue, visiting friends in Massachusetts and New Hampshire, and was considered remarkably well by her relatives.

About January 1, 1897, she began to be troubled with indigestion and frequently vomited her food, but retained a good appetite and ate heartily. She grew weak, however, and a month later went to bed, being unable to walk or even to stand upon her feet. About this time her daughter first noticed anemia. Four weeks later she refused all food except milk, soft custards and gruel. Her bowels were generally regular; she slept well, had a nervous cough and complained of pain in her back and bowels.

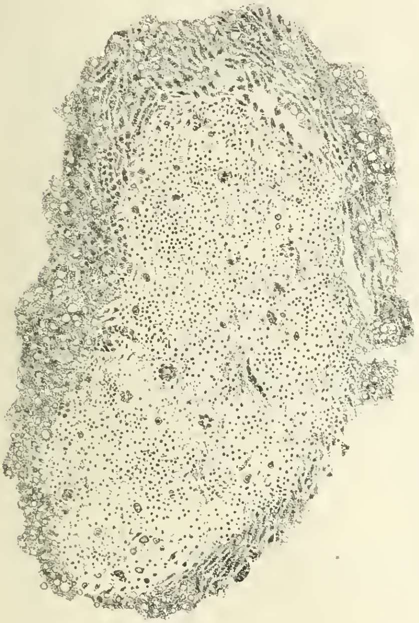
May 1st she was brought to the asylum in an ambulance, being very weak. She seemed stronger than she was willing to admit, helping herself in many ways when the nurses were not around. Unable to stand or sit upright; no paralysis apparent. She was not emaciated; her limbs were plump, and no edema was discoverable. She was very anemic, her skin was dry and of a peculiar parchment hue. Her tongue was coated, large and flabby; she did not retain solid food. Palpation of the abdomen revealed an area of marked hyperesthesia in the epigastrium and pain upon pressure about the umbilicus. The bowels were constipated; she urinated every half hour but had control over the bladder. Lungs gave no abnormal physical signs. Heart was rapid, a little irregular, the apex beat feeble and in normal position; there were no cardiac murmurs.

In the right axilla were four enlarged lymph nodes, varying from the size of a hickory nut to that of an average hen's egg. There were two smaller nodes in the left axilla and those in the neck were slightly enlarged. She said these enlargements had existed for one year and followed an eczema of the right breast.

The urine was slightly increased in amount, pale, specific gravity 1.012, acid in reaction and did not contain albumin or sugar.

At first she retained milk, gruel and soft custards, but vomited all solid or semi-solid food. Later she retained the milk only when given with lime-water.

She was generally cheerful and appreciative, but very hypochondriacal; craved attention and was fearful that the nurses would fail to carry out the physician's directions. There was an irregular febrile movement from the time of her admission, her temperature ranging during the first three weeks from 98° F. to 101.2° F., only on two or three occasions going above 99.8° F. She was not deluded and until towards the end, her mind was quite clear. She was always hopeful of recovery. During the day she was restless; but would frequently become drowsy and sometimes fall asleep while speaking with the nurse. At night she slept well.



A blood examination on May 8th, at 2 45 P. M., gave

Red corpuscles	501,600
White corpuscles	13,000
Hemoglobin	28 per cent.

There was great inequality in the size of the red corpuscles; some very large, others correspondingly small. No accurate measure of their size was made, but I think the average diameter was greater than normal.

During May she seemed to gain somewhat in strength, but early in June an increasing weakness was apparent, she vomited more frequently and had several slight attacks of diarrhea lasting one or two days.

Blood examination June 12th, at 3 P. M.:

Red corpuscles	223,200
White corpuscles	14,000
Hemoglobin	23 per cent.

She was drowsy, talkative, confused and incoherent. On this and the following days she took and retained nourishment regularly. There was no more diarrhea.

June 14th, blood examination at 3 P. M.:

Red corpuscles	172,000
White corpuscles	12,000

June 15th, blood examination at 3 P. M.:

Red corpuscles	155,280
White corpuscles	14,000

She was growing weaker. For several days there had been an increased dryness of the skin and blotches of brownish pigmentation were noticed over knuckles and wrists.

June 16th, blood examination at 3.30 P. M.:

Red corpuscles	155,760
White corpuscles	20,000

Cover-glass preparations were made June 16th, and stained with the Ehrlich-Biondi triple stain with the following result:

Lymphocytes	12 per cent.
Polymorphonuclear leucocytes	61 "
Mononuclear leucocytes	26 "
Eosinophyles	1 "

Four nucleated red corpuscles were discovered in examining five cover-glasses. They were all of small size with deeply stained nucleus. The contour of the red corpuscles was strikingly good; no poikilocytes were discovered although careful search was made at each examination.

On June 17th she talked pleasantly with her daughter, and although showing a little mental confusion, she was cheerful and seemed to think she was improving. In the evening she slept and at 8 P. M. quite suddenly lost consciousness. Her eyes were turned a little to the left and there was rigidity and semi-contraction in the muscles of the right hand. The pulse could not be felt at the wrist; her respiration failed rapidly, and she died at 2 A. M.

Autopsy. — Eight hours after death. There was a considerable deposit of subcutaneous fat. The largest mass of lymph nodes in the axillæ above referred to was composed of several small nodes adhering together. All were of firm consistency. The bones of the skull were rather soft. Considerable edema was present over the left hemisphere and both frontal lobes of the brain. The costal cartilages were very soft. There was considerable fat about the heart which appeared normal and weighed ten ounces. In the mediastinum were several enlarged lymph nodes, the largest the size and shape of a lima bean. The lungs were normal.

The omentum and mesentary contained a fair amount of fat; no enlarged lymph nodes were found in the abdomen. The stomach and intestines appeared normal to the eye but were not examined microscopically. The liver and spleen contained many hard, yellowish-white nodules from one-sixteenth to three-eighths inches in diameter, contrasting sharply with the surrounding tissue from which they could be shelled out easily leaving a cup-shaped cavity. The liver was somewhat fatty and weighed sixty-six ounces. Weight of spleen, nine and one-half ounces. It was slightly enlarged and of firm consistency. The pancreas, suprarenals, kidneys and uterus appeared normal. No enlarged lymph nodes in the groins. All the organs were extremely anemic.

Portions of the liver, pancreas, spleen, suprarenals and lymph nodes were sent to Dr. William L. Worcester, Pathologist at the Danvers Lunatic Hospital, Mass., for examination. He returned the following report of the

MICROSCOPICAL EXAMINATION.

Lymphatic Nodes. — These represented the ordinary lesions of caseating tubercle. They consisted mainly of finely granular, structureless substance, staining faintly and diffusely with hematoxylin. Attempts to stain tubercle bacilli in them were unsuccessful.

Liver. — The whitish nodules in the liver were found to consist mainly of spindle-shaped and irregularly polygonal cells. A few giant cells were scattered through them. Nothing was found which could be identified with certainty as blood-vessels, but there were some aggregations of irregulary shaped cells surrounding a lumen, suggestive of a possible circulatory apparatus. There was no appearance of necrosis in any of the nodules examined (see illustration).

The liver cells presented a pretty extensive fatty infiltration.

Spleen. — In this organ nodules were found resembling in the main those described in the liver, though no giant cells were seen in them. There was a large quantity of coarsely granular brown pigment about the trabeculæ.

Remarks. — In view of the evidently tubercular condition of the lymph nodes, the presence of giant cells and the apparent absence of blood-vessels, the nodules in the liver and spleen must, I think, be considered tuberculous, notwithstanding their different appearance from that of ordinary tubercles in these situations. They do not present the character of the lymphoid tumors of Hodgkin's disease.

The pancreas and suprarenals were practically normal.

The question of the possibility of Hodgkin's disease being present had arisen; but the tubercular character of the lesions being thus determined, the diagnosis as given in the title of this report seemed justified.

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Clinical Department.

INTESTINAL SUTURE OF TYPHOID PERFORATION; RECOVERY FROM OPERATION; DEATH NINE DAYS LATER FROM THE ORIGINAL DISEASE.

BY SAMUEL B. WOODWARD, M.D., WORCESTER, MASS.,
Surgeon City Memorial and St. Vincent's Hospitals.

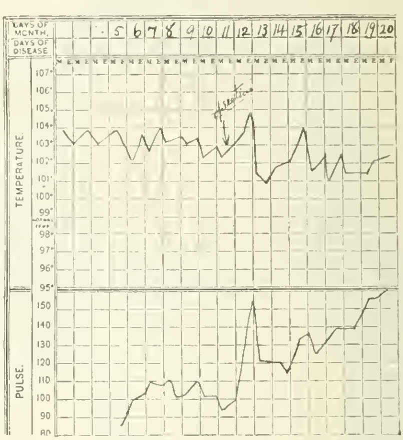
Operation for closure of typhoid perforation is not yet so common that it does not deserve record. Generally in the nature of things unsuccessful, an occasional case has been saved, as was for a time apparently the one reported below, and the possibility of successful interference in this almost universally fatal, though fortunately somewhat uncommon, accident cannot but be prominently kept in mind.

F. B., male; age eighteen; student; entered the Worcester City Hospital, January 5, 1898. Ill one week; five days in bed with a history of headache, backache, epistaxis, anorexia, etc.

The patient was poorly nourished and ill developed; facies dull and apathetic; gurgling in the right iliac fossa; two abdominal rose-spots; the spleen palpable below the ribs. The temperature was 103.8°, the pulse 100. Diazo reaction was present. The leucocytosis was 7,000. Serum reaction showed distinct clumping in ten minutes.

Six days later at 11 A. M., severe pain was complained of in the right iliac region, where there was slight tenderness without muscular rigidity. This continued during the day until 6 P. M., when it suddenly became very severe. Tenderness was now extreme, and there was marked muscular rigidity but no abdominal distention. The pulse was 104, and of good character.

Soon after the temperature, which at 4 P. M. was 103°, fell to 98° and then to 96°, while the pulse-rate rapidly increased; the house physician, Dr. Spaulding, who had diagnosed perforation, summoned the visiting physician, Dr R. W. Greene, and at 8.30 I saw the patient for the first time.



He could not be roused, showing no consciousness when the previously tender abdomen was palpated. There was now moderate general distention, the tongue was dry, the lips open, respiration rapid and the pulse 148 and thready. The outlook was most unfavorable.

A three-inch median incision in the hurriedly prepared abdominal wall brought to light a coil of small intestine lying to the right of the incision, thickened, red and coated for six inches with lymph. Abundant lymph, a white fluid (milk?) and some fecal matter were free in the abdomen. A perforation of the size of a pea was found near the centre of the inflamed intestine, opposite the mesenteric insertion. Its edges were freely excised, and it was closed with a double row of Lembert sutures. Several gallons of normal hot salt-solution were then washed through the abdominal cavity, much of the lymph picked off, and the abdomen closed with silkworm-gut sutures without drainage.

The patient was almost moribund. Abundant stimulation, bandaging the legs, oxygen by inhalation, elevation of the bed foot, etc., finally established the circulation, and the next day the patient was conscious and taking nourishment.

He lived nine days in a typhoid state with no local symptoms suggesting peritonitis.

An autopsy could not be obtained, but the abdominal wound was found ununited and gangrenous at the edges, falling apart when the stitches were removed. The abdominal cavity was dry, the intestines uninflamed with the exception of a local dry peritonitis about the originally damaged coil.

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TWO CASES OF STRAMONIUM (?) POISONING.

BY EDWARD A. TRACY, M.D., BOSTON,
Fellow of the Massachusetts Medical Society.

On April 21st last, at half-past six in the morning, I was called to see Mamie, aged nine years, and Patsy Connors, aged seven years, who were both suffering from delirium since two o'clock that morning.

Their mother informed me that they had the measles a week before, and that she feared the measles "had gone in."

Both children were wildly delirious; the girl inclined to be joyous, singing snatches of tuneful melodies; the boy belligerent, yelling to imaginary playmates, and using profanity. This astonished his father who apologetically stated that he had never heard his boy talk so before. The children were too restless to have their pulses taken, but listening over their hearts with the phonendoscope I counted 240 beats for the girl's, and 196 for the boy's. (At six hours later I was able to get the wrist pulses, the girl's 120 and the boy's 98 — both numbers being just half of the previous countings — I am strongly inclined to believe that the first countings took in both sounds of the heart, they being of equal intensity, and just double the correct pulse.)

Their pupils were widely dilated and did not contract to a lighted match brought near to them. Their countenances were flushed — but general erythema was absent.

On seeing the patients I asked the mother what medicine she had given the children. She replied that at half-past eight the night before, she had given Patsy a heaping teaspoonful of "licorice" powder, and Mamie a teaspoonful.

They had slept till two o'clock when Mamie awoke her older sister sleeping with her by pinching and kicking her. A noise was heard in the room where Patsy slept and he was discovered under the bed acting in a most bellicose manner. I asked the mother where she had obtained the "licorice" powder and was informed that a near-by druggist had given away sample packages the previous Saturday.

The packages had been emptied into a jar and the envelopes lost.

My diagnosis was poisoning. Treatment, a strong solution of Epsom salts, three or four teaspoonfuls every twenty minutes until the bowels moved very freely.

Patsy had vomited a little, the vomit not seen by me. The bowels of both were constipated. An emetic was not considered, as eleven hours after the ingestion of poison the emptying of the stomach is not called for. The speedy emptying of the bowels and the production of what may be termed an osmotic catarrh into them appeared to be rational treatment. I also gave each child five grains of Dover's powder, for its sedative and eliminative effects, and requested the mother to apply hot moistened flannels to the children, and to wrap them in blankets, to assist in the elimination of the poison. This was not done.

Soon after this visit I called upon the druggist said to have given the samples. He told me he had given away samples of "Powers' Asthma Specific," but no licorice powder. He gave me a sample package of the powder, and upon reading the directions "to set fire to the powder and inhale the smoke" I called for stramonium leaves and compared them both. Their characteristics were alike. My diagnosis of the cases became therefore stramonium poisoning.

I suspected at first belladonna poisoning — though the characteristic general erythema was absent.

Reading the printed matter accompanying the "Asthma Specific," I came across the word (in capitals) CAUTION! I supposed that under this caption the public would be warned of the poisonous character of the drug. But no! the public was cautioned to see that the name of E. C. Powers was on every package!

To return to my patients. During the day the salts operated well five times. The first movements I examined and saw many green specks. At about ten o'clock P. M. the children fell asleep and slept till half-past five the next morning, the 22d. They raved somewhat in the morning, were dull and listless in the afternoon. All day they were thirsty. Their pupils were dilated, but reacted sluggishly to light. Patsy's pulse was 88, Mamie's 96. Their temperatures were one-half a degree above normal. On the previous day the temperatures were not taken because of the convulsive movements of the patients. On the next day the children's pulses and pupils were normal; the patients were discharged well.

I have placed an interrogation point after stramonium in the title of this paper, not because I have any doubt that the cases were poisoning by stramonium — but because no rigorous scientific demonstration of the samples obtained was made.

The important query arises in connection with these cases, Who could have been held responsible, under the law, had death occurred as the result of the ingestion of the poison? Nobody. Therefore ought not manufacturers of such like "remedies" be compelled to warn the public of their danger when used otherwise than as directed? Ought not they be compelled to put a poison label on the package? A registered pharmacist is compelled by law to use such a label. Why should quack-remedy purveyors be above such a law?

Some Observations during Human Cremation. — It has been found that fat people burn more easily than thin, and women who have died in childbirth are most easily cremated, while persons who have died of consumption require more time and more fuel than any other class of cases. These observations were made in Japan, where the fuel used is fire-wood, placed directly in contact with the body. On an average about seventy-five pounds of wood is required for each complete cremation. — *Medical News.*

Medical Progress.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

IMMUNIZATION AND SERUM-THERAPY IN STAPHYLOCOCCUS INFECTION.

Dr. Walter Peterson[1] has reported the results of his investigation of this subject. A *résumé* of his work shows the following conclusions: That the disease occurs as a toxic infectious condition usually. That one attack does not procure an absolute or permanent immunity from a second, but that clinical observations occasionally show a temporary or relative immunity. That antagonistic substances are recognizable in human blood-serum after convalescence from severe staphylococcus infection. It was found that a previous injection of sterile culture (sterile by heat) protected an animal from an otherwise fatal dose, or at least definitely delayed death. The use of filtered cultures failed to immunize. In regard to immunization by weakened or dilute cultures the results varied widely, and while attended with a fair degree of success, a method of preparing a serum suitable for clinical work was not discovered. The method of experimentation consisted in treating animals with serum obtained by diluted cultures which had been inoculated with fresh cultures.

RESUSCITATION FROM NARCOSIS FOLLOWING ANESTHESIA.

Herzog[2] has experimented with animals to demonstrate the value of the Laborde method of resuscitation in cases of apparent death from anesthesia. The Laborde method consists of intermittent traction on the tongue at the rate of twenty times per minute. After actual trial with dogs asphyxiated by chloroform or ether, Herzog concluded that the method was valueless in severe cases. That it was a useful accessory when employed with other methods.

ARTIFICIAL ANEMIA AS A LOCAL ANESTHETIC.

The *Centralblatt für Chirurgie*[3] publishes an article by S. Kofmann describing a method of producing local anesthesia by producing a local anemia by the application of an elastic tourniquet. He reports several cases in which the results were quite satisfactory. Foreign bodies were removed from the hand. Ingrowing nails from the toes. Tumors removed, abscesses opened, etc. He claims to be so pleased with the method that he now rarely operates on the extremities in any other way. The extremity is raised, the elastic ligature applied and the operative area cleaned. The constriction should be complete, and the anemia marked, the skin white and bloodless. The cases reported mention complaints of pain due to the constriction of the elastic ligature, which the writer seems to consider as unimportant. The operation must not be begun at once after the application of the tourniquet, but time must be allowed for the anemia and anesthesia to appear.

TREATMENT OF TRAUMATIC JACKSONIAN EPILEPSY.

Graf[4] has written an interesting article describing the results of the operative treatment of these cases. Convulsions beginning in such a manner as would seem to indicate irritation in special motor tracts were considered to indicate that those centres were the seat of the trouble, and that their removal would be followed by recovery of the patient. The results, according to Bergmann's experience, do not always correspond with this expectation. In some cases not the slightest pathological changes have been found, either on the inner surface of the skull, the dura, or the surface of the brain. In other cases, when the supposed cause was found and removed, the convulsions returned. Bergmann, therefore, would restrict this method of treatment (namely, trephining and removal of supposed affected motor centre) to cases of tumors; for example, a cyst which lies in or over a cortical motor centre.

Graf collected 146 cases treated by operation. In 71 the brain was not touched; in 75 the cortex and the pia were attacked. Bone fragments were removed, cysts incised or extirpated, cicatrices cut out, or a cortical centre as demonstrated by electrical irritation excised. In this list 9 patients died as a result of the operation. The recoveries were not confined to any one class of lesion, that is, either where there was a bony depression of the skull or the excision of a cyst, or an apparently normal cortical centre. Even Horsley's radical method did not always prevent a nonrecurrence of the convulsions. Thirty-five patients remained free from attacks longer than six months, twenty-two were improved, thirty-six were not relieved, fifty-three were not sufficiently studied to enable the result to be stated. In connection with this report of Graf's, that of Braun, who has reviewed the literature since 1889, is of interest and value.[5] Braun concludes that the clinical data are not yet suficient to state positively if extirpation of the motor centre is necessary to cure the patient. Cases exist where many have recovered without this extra operation being done.

THE RESULTS FROM LARYNGECTOMY FOR CANCER.

Graf[6] (Berlin) has published a review of von Bergmann's operative work for removal of cancer from the larynx during the period of 1883 to 1896. During this period forty-eight patients were treated by operation, as follows: 20 cases of total extirpation, 19 cases of unilateral and extensive resection of cartilage, 9 cases of removal of small portions of the larynx, 47 cases were cancer, one a malignant enchondroma. The article is an interesting one. It describes the method of operating used, the pathological condition of the patients, existing complications, and the after-treatment. For details the reader is referred to the original report, which contains so much of interest that only a *résumé* of results can be stated in this abstract.

Results. — Complete extirpation, 1883–1890:

	Cases.	Deaths.	Mortality.
	11	3	45.5%
Since 1890,	9	1	11.1 "
No recurrence in 2 cases			10%

Unilateral operation (extensive):

	Cases.	Deaths.	Mortality.
Before 1891,	11	4	36.4%
After 1891,	8	1	12.5 "
No recurrence in 4 cases			21%

Unilateral operation (small portion removed):

	Cases.	Deaths.	
	9	3	
No recurrence in 4 cases			44.4%

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[1] Beiträge f. klin. Chir., Bd. xix, Heft 2.
[2] Deutsche Zeitschr. f. Chir., 1898, xlvii, p. 492.
Band 25, 1898, s. 993.
[4] Arch. f. klin. Chir., 1898, Bd. lvi, s. 591.
[5] Deutsche Zeitschr. f. Chir., 1898; Bd. xlviii, p. 223.
[6] Arch. f. klin. Chir., Bd. lv, s. 399.

NEPHRORRHAPHY.

Sottocasa[7] describes a method which he has devised for fixing the kidney, which consists of attaching the kidney to the quadratus lumborum muscle. This is done by making an incision in the upper third of the convex border of the kidney after it has been exposed by the usual vertical or angular incision. This cut is two centimetres long and one deep. This is tamponed with gauze, while a flap one centimetre thick is cut from the quadratus lumborum muscle on the same level as the incision in the kidney. This flap is then fastened into the incision of the kidney by two sutures of silk. In order to make the union more secure, several sutures through the kidney capsule are added. The muscles and fascia are then closed by a catgut suture, and the skin incision with silk. Dogs treated in this manner and killed forty days after the operation showed that the muscular flap had become white fibrous tissue, and that even by a strong pull the kidney could not be torn free and removed.

BONE CLAMP IN FRACTURES.

An interesting and well-illustrated article describing the Parkhill method of treating ununited fracture of the long bones, cases where malunion exists or recent fractures with a tendency to displacement, has been recently published by him.[8] The method was described two years ago at the annual meeting of the American Surgical Association and consists in fixing the fractured bones in accurate position by a metal clamp which is attached to the bones by metal pins screwed into them. This present article gives the writer's experience with the method since his last report. It includes fourteen cases of complicated fractures, cases of non-union, pseudo-arthrosis, union with deformity requiring resection, etc. For details those interested in the subject are referred to the article itself, which is too extended to be given here. The author's conclusions are:

(1) That union has been secured in every case against 56 per cent. by other methods.

(2) It is easy to apply and works accurately.

(3) It prevents either longitudinal or lateral motion of fragments.

(4) Its presence stimulates the production of osseous tissue.

(5) Nothing is left in the bone to reduce vitality, cause pain or infection.

(6) No secondary operation is required.

RENAL TUBERCULOSIS.

Tuffier[9] divides renal tuberculosis into a miliary form, and one called tubercular infiltration. The latter is subdivided into (*a*) a nodular infiltration with or without cold abscess; (*b*) the tubercular pyelonephritis; (*c*) the moderate degeneration of the kidney; (*d*) the tubercular hydronephrosis. The different forms occur alone or combined. Often the perirenal tissue and the upper part of the ureter are involved.

Tuffier considers that since removal of the diseased parts of the kidney or the whole kidney has not been followed by a recurrence after several years that the disease in a large number of cases must be primary.

Nephrotomy is selected for cases where there is sepsis from retention. Primary nephrectomy is justifiable only when one can be sure of the sound condition of the other kidney. If one cannot be certain, then the surgeon should do a nephrotomy, and later, if desirable, the nephrectomy can be done. When the kidney is removed as large a piece as possible of the ureter should be removed also.

His statistics show seven nephrotomies, namely, two died from the operation; three improved, but healed with a fistula; two became well, in one at the end of two years, in another at the end of five years; nine nephrectomies; seven primary, two secondary cases; no deaths; two cases well at end of five and a half and six and a half years.

THE TREATMENT OF URACHUS FISTULA.

E. Lexer has written an interesting article on this subject.[10] He concludes that the congenital and acquired varieties differ essentially as regards the facility with which a patient is cured. The cause in the congenital cases is essentially some slight obstruction to the escape of urine in the normal direction; for example, phimosis, contraction of the urethra, a fold of the vesical mucous membrane. Such cases often heal if the urine can be made to escape normally and the fistula closes by cicatricial contraction produced by simple cauterization or by resection of the urachus and suture of the mucous membrane wound, as has been done by Delagénière and Stierlin.

In acquired fistulæ it has been found that frequently the lowest part of the fistula has not been destroyed, but that in the lig. vesicæ medien there exists an epithelial tube patent to a sound. Under these conditions a fistula first appears when a valve-like fold of mucous membrane at the bladder opening is insufficient. In such a case v. Luschka operated successfully by tracking the fistula to its junction with the fundus of the bladder, cutting it off at this point and suturing the bladder opening. The bladder had in this case, as in one of v. Bramann, the shape of a long, thick-walled tube. It is possible only by a microscopic examination to distinguish such cases of fistulæ of the urachus from an abscess of the bladder wall which has perforated.

An attempt should be made to close congenital fistulæ directly after birth by the simplest means, such as excision of orifice and suture. If unsuccessful one should make a radical operation later in life, since the peritoneal cavity is, as a rule, opened.

In the acquired cases Lexer advises the Bramann operation without injuring the peritoneum, that is, the fistula is split open from the umbilicus to the bladder and the epithelial layer dissected off. When the epithelial layer unites with the abnormally shaped fundus of the bladder the entire tube and a sufficient layer of the thickened fibrous wall is dissected free, cut off at the fundus of the bladder and the bladder sutured.

LIPOMA OF THE VAS DEFERENS.

A description of such growths which are quite rare has recently been published.[11] These growths arise from the adipose tissue of the cord or the sub-serous fat layer but always develop within the tunica vaginalis corum. Gabryszeski, the author of the article, has collected 29 cases, one of which was his own and was operated. Gabryszeski found in fifty cadavers that in each case in the loose, perivascular, connective tissue about the "processus vaginal peritonæi" macroscopically visible fat lobules which usually were continuous with the subperitoneum fat layer. When the lipoma develops from these fat lobules it is called primary in distinction to those which begin in the neighborhood of the cord, and later by increasing occupy its position. The tumor is usually discovered accidently. The patient happens to feel a small mass in the scrotum which gradally grows and by its size causes discomfort. A positive diagnosis is often impossible. The treatment is enucleation and on account of the difficulty in making a positive diagnosis should be done early.

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[7] Centbl. f. Chir. 1898; Bd. xxv, s. 1013.

[8] Annals of Surgery, 1898, vol. xxvii, p. 553.

[9] Paris, Masson & Co, 1898, 288.

[10] v. Langenbeck's Arch., Bd. lvii, Heft 1.

[11] Deutsche Zeitschr. f. Chir., 1898, Bd. xlvii, s. 317.

(To be continued.)

Reports of Societies.

THE NEW YORK STATE MEDICAL ASSOCIATION.

FIFTEENTH ANNUAL MEETING AT THE MOTT MEMORIAL HALL, NEW YORK CITY, OCTOBER 18-20, 1898.

DISCUSSION ON INTESTINAL OBSTRUCTION, HELD ON THE SECOND AND THIRD DAY OF THE SESSION.

THE discussion was opened by DR. PARKER SYMS, of New York County, who presented a general introduction to the subject. No pathic condition of more importance, he said, could engage the attention of the profession, for, while it frequently proved fatal, it was in reality one which was absolutely curable if promptly recognized and properly treated. Unfortunately, however, it was too often neither so recognized nor so treated, and it could not be doubted that a more thorough knowledge of the subject would lead to the saving of many lives that were now sacrificed. The condition was apt to be mistaken for simple constipation with more or less ptomaine poisoning from retained products, yet the symptoms were really very different. Whenever any portion of the intestine became incarcerated and a loop was being strangulated, we always had the element of abdominal shock.

As a rule, the general practitioner was loathe to resort to operative procedures, and, consequently, while he was temporizing, most valuable time was lost. It was folly to attempt to reduce an intestinal strangulation by means of cathartics, which not only did no good, but were even liable to cause much injury. As well might we attempt to remove a tourniquet from the thigh with internal doses of calomel.

Having enumerated the principal causes of obstruction, he said that the class of cases due to impaction of feces was an exception, in that medication might possibly prove of service, but even here it was better to operate before waiting very long for medicines to act. Enemata, however, might be thoroughly tried before resorting to laparotomy. The diagnosis of fecal impaction having been satisfactorily made, it was proper to use high injections, reaching as far as the ileum, but if these failed to relieve the condition, an early resort to operation was called for. If done promptly we would probably have a comparatively vigorous patient to deal with; while, if delayed too long, we would have a dying patient with a gangrenous intestine. If there were any doubt as to the diagnosis, laparotomy should be performed for the purpose of exploration. Volvulus was a comparatively rare variety of obstruction, and one in which it was impossible to make a diagnosis without laparotomy. It was always acute and very dangerous. It was a matter of the utmost importance to recognize chronic forms of obstruction attended with signs of strangulation. As soon as the region involved was determined, laparotomy should be done. According to the special circumstances of the case the operation might be very simple or one of the most difficult and intricate in the domain of surgery. There was always the dual problem to deal with, the cause of the obstruction and the actual condition of the affected parts.

DR. E. D. FERGUSON, of Troy, Rensselaer County, read a paper on

THE CAUSES OF ACUTE INTESTINAL OBSTRUCTION, WITH A DESCRIPTION OF THEIR MECHANISM.

He said that the term *obstruction* was not always strictly descriptive of the condition, as, for instance, when the trouble was due to intestinal paralysis; and he thought the Anglo-Saxon word *stoppage* would be a better one for it. In three cases in which he was about to operate it had been his good fortune to find out before doing the laparotomy that the stoppage of the bowels was due to lead paralysis. Having referred to paresis from peritonitis, ptomaines, toxins, etc., he said that while some doubted the possibility of occlusion of the intestines from mere dynamic causes, there could be no question that cases of this kind, without any mechanical obstruction, were sometimes met with.

As to mechanical causes of obstruction, they could be classed in three divisions:

(1) Conditions without the intestinal walls.

(2) Conditions within the walls.

(3) Conditions relating to the intestinal wall, as, for instance, intussusception caused by a polypus.

In the first class of causes we had first tumors and displaced viscera. In over seventy-five cases of this kind the obstruction was in the fixed part of the intestines, and the rectum led in frequency. In view of the commonness of abdominal growths of various kinds, it was somewhat singular that this cause was not oftener met with. When the seat of obstruction was above the pelvic brim it was more frequently due to traction, and in this connection Dr. Ferguson related a case caused by a retroverted uterus which had attained the size of a gravid uterus in the third month, where relief was afforded by the reposition of the organ. In the next place, we had compression by bands and cords. In the majority of cases these were the result of peritoneal inflammation, and the segment of bowel affected was almost always in the small intestine, and generally the ileum. Still, any portion of the peritoneal cavity might be involved; but, curiously enough, the omentum, which, from its position we might expect to be the frequent seat of trouble, was rarely affected. Another curious fact was the rarity of more than one band or cord. The length and position of the band determined in a measure the character of the obstruction, and the mechanism of the obstruction was usually very simple. The cords met with in the abdominal cavity might become detached, and, like a whip-lash, get knotted, and the practical point was to discover in any case whether we had to deal with a loose cord or a fixed band. Strangulation by Meckel's diverticulum was mentioned as sometimes occurring. In the third place we had compression in apertures. This was the largest class, and included the hernias.

Having spoken of the mechanical details of causation, he passed on to the second division of causes, conditions operating within the intestinal walls. In these were included impacted feces, gall-stones and foreign bodies of various kinds, among which it was now necessary to mention the Murphy button.

The most important of the third division was the telescoping of the bowel known as intussusception, which constituted more than one-third of all the cases of intestinal obstruction. The external of the three layers thus formed was known as the intussuscipiens or sheath, the innermost the entering layer, and the middle one, the returning layer. There might be double and even triple intussusceptions, but they were rare. There were spasmodic forms and paralytic forms, and the latter showed that the innervation of the bowel was an important factor. Another important element in the causation was peristalsis on the part of the sheath.

In obstructions due to physical conditions relating to the wall of the intestine were included stricture and volvulus. Stricture was usually chronic and either cicatricial or cancerous in character. It became acute only under special circumstances. Volvulus, or the twisting of the intestine so that its lumen became occluded, might be either around the mesenteric axis of the bowel, or more or less directly along the line of the bowel; the transverse twist and the longitudinal twist. Volvulus was most commonly met with in the sigmoid flexure, and among the circumstances favoring its production was a long mesentery. The degree of twisting varied greatly in different cases, and if it was pronounced there was very little hope of a natural restoration of the parts. One event to be looked for was the early development of peritonitis.

DR. GEORGE D. STEWART, of New York County, read a paper on

THE CAUSES OF CHRONIC INTESTINAL OBSTRUCTION.

The acute and chronic forms of obstruction were so closely associated, he said, that the distinguished authority, Treves, made no distinction between the two. Most writers agreed that chronic obstruction was usually a partial occlusion of the bowel which might at any time assume an acute form under favoring conditions. By far the most common cause was stricture, either benign or malignant. Simple stricture, partial or complete, usually followed the healing of an ulcer. The character of the primary ulcer had much to do with the production of stricture. Round or longitudinal ulcers were rarely followed by this condition, those of irregular outline being usually responsible for it. It was doubted by Treves whether typhoid ulcerations ever resulted in the formation of stricture. Stricture might also result from injury and it might be congenital. The latter form was very rare and usually complete. That the stricture produced was chronic rather than acute was due to the slow contraction of the cicatricial tissue resulting from ulceration and the gradual involvement of the intestinal wall.

Having spoken of the characters of stricture due to malignant disease, and mentioned that secondary carcinoma closely resembled primary, he said the next most frequent cause of chronic obstruction was paresis of the intestinal wall, with fecal impaction. It was apt to occur during an apoplexy or other exceptional call upon the patient's forces, but sometimes resulted from simple lack of exercise. He described the conditions usually present, and then said that when a localized peritonitis resulted in cure we might have chronic intussusception produced. Again, adhesions due to peritoneal inflammation-bands might produce obstruction by their slow contraction, while an adhesion lying over the intestine and not joining it to any viscus might cause obstruction by puckering the bowel. Mesenteric gland disease was a very common cause of these false ligaments, and they might also result from tubercular peritonitis. Strangulation by diverticula, such as Meckel's, sometimes caused obstruction. A loop of intestine might either become fixed under an arch of the diverticulum, or the latter, when unattached and with a clubbed extremity, might tie itself in a knot about the pedicle of the loop. Benign growths of the intestinal wall were rare. In conclusion, he spoke briefly of volvulus of the sigmoid flexure, obstruction by the pressure of tumors, etc., external to the bowel, foreign bodies, gall-stones, etc.

DR. J. W. S. GOULEY, of New York County, read a paper on

INTESTINAL OBSTRUCTION DUE TO IMPACTION OF FECES, GALL-STONES, FOREIGN BODIES, ETC.

Impaction of feces, he said, was preceded by long-standing constipation. The patient might perhaps even have one or two stools of a certain character every day, and be deceived into the belief that his bowels were acting regularly, but the impaction was going on all the time. The best method of treatment for the condition he believed to be the slow and gradual irrigation of the intestines with warm saline water, together with two or three large enemata at intervals of two days. As an adjuvant laxatives in small doses were of service. Large doses of cathartics he thought were more likely to do harm than to be helpful. The enteroliths liable to cause obstruction were at least five different kinds, namely, (1) gall-stones; (2) fecal masses largely composed of calcareous matter, such as is seen in the stools of dogs; (3) masses largely composed of vegetable matter, such as the avenolith, or oat-stone, resulting from excessive use of oat-meal; (4) masses composed of solid medicinal substances, such as magnesia, bismuth, etc.; (5) foreign bodies serving as nuclei for the formation of hard masses of various size. When enteroliths of any of these kinds caused obstruction of the bowels they were to be removed by laparotomy. Foreign bodies, he went on to say, entered the intestinal tract by way of the mouth and the anus, and sometimes through penetrating wounds of the abdomen. The swallowing of coin, though of common occurrence, seldom caused any serious inconvenience. The remainder of the paper was devoted to the citation of a large number of curious cases collected from various sources, in which foreign bodies of unusual character were taken into the alimentary tract.

DR. J. D. RUSHMORE, of Kings County (Brooklyn), read a paper on

THE DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.

The usual symptoms were pain, nausea, vomiting and collapse, with the possible presence of an abdominal tumor. There was generally failure to pass either feces or gas, but in cases of intussusception, at least in the earlier stages, diarrhea was present. The usual situation of the trouble was in the small intestine. In every case it was of the utmost importance to bear in mind the possible existence of hernia. Clinically it was the most frequent form of obstruction. Again, the symptoms of acute obstruction might all be present in some other conditions, such as peritonitis and lead poisoning.

Our first duty to the patient, then, was to find out whether he had a strangulated hernia or not. If there was any doubt about the matter a simple exploratory incision under cocaine anesthesia should be resorted to. When the obstruction was located in the large intestine Kelly's rectal tubes might be of service in the diagnosis. The cases presenting the greatest difficulty were those in which the trouble was entirely intra-abdominal. We had to differentiate between mechanical and non-mechanical causes, and little or no help could be derived from the use of cathartics. An exploratory laparotomy furnished, in fact, the only means of making an exact diagnosis. This was a certain and not unsafe method, and it was one justified by the condition of the patient. In regard to the statistics of operation Dr. Rushmore quoted extensively from the paper of Dr. Fitz, of Boston, read before the Congress of Physicians and Surgeons, 1898.

There was no symptom that was always present. Even pain might be absent. Fecal vomiting was most frequent where the obstruction was caused by gall-stones, but the figures at our command were of such a character as to show that little reliance could be placed on them in making a correct diagnosis. The previous history of the patient and other concomitant circumstances might perhaps guide us to some extent. The use of cathartics, as has been mentioned, was of no avail, and puncture of the intestines could give but little assistance, and was not devoid of more or less risk. General anesthesia would usually throw much light on the case by abolishing muscular rigidity and allowing the physician to make a more thorough examination of the parts. If this failed to establish a reasonably satisfactory diagnosis the only means left was an exploratory laparotomy. This enabled us in a few minutes to recognize the exact condition, so that we could then definitely pronounce whether the obstruction was due to a mechanical or a septic cause. The risks of the procedure were very slight, and on account of the complete examination it enabled us to make, it could be confidently asserted that we could be more certain of our diagnosis in the abdominal cavity than in either the cranial or the thoracic. This was a field of exact diagnosis.

The indications for treatment were simple. No where in surgery was it more important to remove the cause of trouble as soon as found. The danger of delay was great. The earliest possible diagnosis having been arrived at, the case was to be treated according to the conditions found present. As to imperforate anus, for instance, there was no dispute as to what was to be done. So, in strangulated hernia there was no dispute. Taxis having failed to reduce it, an immediate operation was called for, and this might be either partial or complete, according to circumstances. As a rule, a patient suffering from acute intestinal obstruction should not be allowed to go more than forty-eight hours without an operation. Even in septic peritonitis laparotomy should be resorted to in selected cases. Certainly nothing else could possibly save the patient, and while the mortality was necessarily larger in this class of cases, a sufficient number of recoveries had been observed to amply justify the operation.

The statistics of acute intestinal obstruction showed a mortality under medical treatment of 75 per cent. In obstruction from intussusception, volvulus and strangulated, the chances had been shown to be largely in favor of operation. Without operation the mortality was 95 per cent., and with operation 67.3 per cent., a saving of nearly 25 per cent. The percentage of recoveries was much larger than those in cases where the operation was done early, and the figures of Wiggin (1896) showed a mortality of only 22 per cent. in all cases operated on within forty-eight hours, or before the bowel had become gangrenous and the patient exhausted. In speaking of the statistics of other authors, he said that the time-limit (forty-eight hours) seemed largely to explain the discrepancies met with. Thus, in a series of cases collected by Fitz the mortality was only about 60 per cent. in those treated medicinally, and 80 per cent. in those treated surgically; but an examination of the list showed that in only two cases was the operation performed before the third day.

This point was to be emphasized, that not only was there very great risk in delay, but also in the use of mechanical force for distending the bowel with water or air in the non-operative treatment. Such risk, he believed, was far greater than that from anesthesia and the performance of laparotomy. Dr. Fitz had concluded his valuable paper with the statement that it was advisable usually to keep up the use of injections for three days. If by that time these had proved inefficacious, the case was no longer medical but surgical. Dr. Rushmore thought the case should be considered a surgical one *before* the third day. In cases of this kind the general practitioner was too often wont to say, "Let us wait and see." The surgeon, however, pointed out a better way, *to see and wait.*

(To be continued.)

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THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Meeting, May 17, 1898, at 8 p. m., Dr. F. H. Davenport in the chair.

Dr. Alfred Worcester read a paper entitled

DISTRICT-VISITING NURSING IN OBSTETRICAL PRACTICE.[1]

Dr. J. P. Reynolds spoke of the duties of the obstetrician and the importance of the proper preparation of the patient for labor, and also of the burden that "trained nurses" are to the class of patients Dr. Worcester has referred to. He hoped that it might prove possible to carry into effect the reforms advocated in this paper.

Dr. A. D. Sinclair: In the early days before trained nurses, of course the physician had himself to do everything that Dr. Worcester has outlined as part of the nurse's duty. When the "trained nurse" appeared, her extraordinary knowledge was often the most noticeable thing about her and she often was a sore trial to both the patient and the physician. District nursing as described by Dr. Worcester must work most admirably.

Dr. J. G. Blake asked for more definite information as to the actual working of the system in Waltham.

Dr. Worcester: In Waltham I have a district nurse at every lying-in case I attend, the majority of which are among the poorer classes, or at least among those who cannot afford to have an ordinary costly trained nurse. When I am engaged to attend upon a case, the patient at the same time engages the nurse. The nurse stays with the woman from the first symptom of labor until an hour or two after the baby is washed and dressed; she makes another visit ten hours later, and then a visit twice a day for ten days, receiving one dollar for her service at the labor and twenty-five cents for each subsequent visit. This system now obtains in many of the smaller cities in Massachusetts. Ten years ago we thought that six nurses would be an over-supply for Waltham; we now keep forty or fifty busy. These nurses, I wish it understood, are in course of training, and the money goes to the hospital. The value of the experience is so great that graduates often come back for a course.

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[1] See page 537 of the Journal.

Dr. Blake: Is it your desire to have schools established in the smaller cities or how are you going to educate the nurses away from the large towns?

Dr. Worcester: The idea that nurses can be trained only at the large hospitals is a very modern notion indeed. Trained nursing started in the little town of Kaiserwerth. As it is now the aggregate number of nurses at the schools in the smaller towns is greater than that of those in the schools in the large cities. Now almost every town of 10,000 inhabitants has its training-school, and their nurses get practical obstetrical experience in the way I have outlined. In London now the instruction obstetrical nurses have is of the practical kind and not in hospitals.

Dr. Higgins spoke of the system in vogue in Boston, under which the care given by out-patient nurses connected with the Boston Lying-in Hospital is limited to after-treatment, the preparation, etc., being done by medical students who needed the experience. At the Lying-in Hospital the nurses get the instruction Dr. Worcester has outlined, and are quite competent to carry on a case in the manner he describes. While recognizing the value of the practical work, the speaker did not see how it could be given in our larger hospitals. At the City Hospital, for instance, they have a didactic course but no practical work.

Dr. Cushing: The question of the legal responsibility of the physician arises. I fear that if a physician trusted to a nurse to notify him when needed, and an accident occurred, it would go hard with him if he gave that excuse. The midwife seems to me the logical outcome of Dr. Worcester's methods. With the great struggle for existence it is a great question how desirable it is to turn over to nurses much of the work now done by the doctor, and I doubt very much whether the younger men will thank us for it. Finding that nurses are dependent upon obstetrics after graduation, I have carried out much of this system with my own nurses, sending them out when occasion offered while still under my control.

Dr. Boardman: I am strongly opposed to the higher education of nurses. I believe in their proper education — not as physicians or obstetricians. Of course the point at which to stop is an arbitrary one. I recognize the value of a good nurse; I know also how that value is diminished if she knows too much. I am in sympathy with the idea of nurses, while still in hospitals, having work in families. A nurse graduating with high rank is often at sea when she comes into a private family.

Dr. Engelmann: I confess to a certain amount of interest as to what this is going to lead to. If the nurse is sufficiently educated to know enough to summon the doctor at the proper time, she is quite able to conduct a normal case. It seems to me that this will involve the midwife system, and American women are too ambitious to remain midwives. I certainly should think the result of so much teaching would be to place normal cases in nurses' hands.

Dr. Washburn: As far as the practical results of the training nurses have at Waltham goes I can only say that it is very good. I have had several Waltham nurses, and have yet to see any tendency to assume undue responsiblity. The difficulty in supplying obstetrical nurses for families of moderate means is great, and has been discussed at length in this Society. At that time we could see no method of obtaining suitable nursing at low wages. Nurses that were worth having would not go to a case for less than fifteen or eighteen dollars. If the system Dr. Worcester describes could be carried out it would be a great advantage to the patient. The great difficulty would be in supplying a nurse with sufficient work to make her willing to take up that line, and in a city like this it would be hard to start a hospital with that for its main work. If the lying-in hospitals in our large cities would undertake it the problem would be solved.

Dr. Breck: I am surprised that no one has mentioned the fact that we have in Boston three nurses, two of whom are graduates, who do this work already, charging two dollars for assistance during labor and a dollar for each subsequent visit. Of course the problem of supplying competent nursing to the lower middle class is a very difficult one. I would suggest that it might be met by the establishment of a well-appointed hospital to which any reputable physician might send his cases and attend them himself.

Dr. Blake called attention to the fact that there were already in the city one or two houses of this nature conducted by nurses.

Dr. Cumston asked how many cases a nurse is supposed to attend before she is regarded as competent to determine the position.

Dr. Worcester: I never try to teach them to determine the position. They are taught the presentations on a mannikin and are expected to be able to tell that.

Dr. Kingman: I think Dr. Worcester is deserving of much gratitude from patients for his persistent fight in this direction. There can be no question but that patients are dissatisfied with the present conditions, and with justice. One cannot get a nurse for less than fifteen dollars that is worth having, and this ought not to be so.

Dr. Worcester: It would be perfectly possible for Boston to obtain a large amount of competent nursing for the poorer classes at low rates if the training schools would adopt a three years' course, and during it give outside training under physicians connected with the schools. Then Boston would regain the position and reputation as a teaching centre for nursing that she certainly has lost; for while other places have advanced, Boston has stood still. If this were done, the poor in Boston could have the same care at the same low rates their country sisters do. I must emphatically protest against the idea expressed here tonight that there is danger that nurses can be taught too much. The more they are taught the less is the danger of their overstepping the proper bounds of their position. I have never known a Waltham graduate undertaking to conduct a labor, although they all know well enough that a normal labor will take care of itself. The trouble in Boston is that the instruction is all to the student and not to the nurse, and this at the expense of the patient. As has been said to-night the graduates of our large hospitals are not trained in obstetrics. It is a common thing for Boston nurses to go to New York or Philadelphia for a course in obstetrics, and it is upon obstetrics that most of them must depend for their bread and butter. What are the objections to providing an outside course in obstetrics to the nurses? Women do not want to go to the hospitals, as Dr. Breck suggests, and I know a low-rate competent student nurse would be welcomed by thousands of women. Fears have been expressed at the practical working of our system at Waltham. There is, however, absolutely no opposition on the part of the profession in places where it has been tried. There should be ten times as many nurses as doctors; as it is, there are only one-tenth as many.

Dr. Grant demonstrated the specimens from a case of

EXTRAUTERINE PREGNANCY RECENTLY OPERATED UPON BY DR. BAKER.

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BOSTON SOCIETY OF MEDICAL SCIENCES.

The Boston Society of Medical Sciences met November 15th, the President, Dr. H. C. Ernst, in the chair, and the following communications were made.

Dr. Theobald Smith spoke of

A TUBERCLE BACILLUS HAVING A LOW DEGREE OF VIRULENCE.

The organism was obtained from a patient, who, during life, had presented a suppurating swelling of the neck, which had yielded numerous tubercle bacilli. The autopsy showed also a healed lung tuberculosis. The inoculation experiments made by Dr. Smith showed that the bacilli had an unusually slight virulence, that there were no foci in the lungs of rabbits inoculated in the ear vein, and that there were certain unusual variations in the lesions produced in guinea-pigs.

Dr. W. T. Porter gave the results of work done by W. Baumgarten on

INFARCTIONS IN THE HEART.

He had studied the distribution of the coronary arteries in the dog and cat by aid of the Röntgen rays, after injecting the vessels with a mixture of starch and subnitrate of bismuth. Important conclusions were, that branches of the large trunks of the coronary artery do not encroach upon the distribution of other large branches; that the ischemic area remains contractile many hours after ligation of its nutrient artery, and that the heart-sounds are not affected by the presence of infarctions in the heart walls.

Dr. Porter also described an experiment which proves that the co-ordination of ventricular contraction does not depend upon nerve cells.

Dr. J. Orne Green gave the results of one hundred and twenty-four blood-counts in forty-four patients, relative to the question of

LEUCOCYTOSIS IN TYMPANIC SUPPURATIONS.

He found that leucocytosis was present in 79.5 per cent. of the cases, and absent in 20.5 per cent., and that it was, therefore, of no value in differential diagnosis from other intracranial suppurations.

Dr. E. A. Darling reported an interesting case, in which a mother died of typhoid fever on the 21st day, having given birth during the fever to a seven months' fetus. Examination of the child, which died in a few days, showed no evidence of the transmission of the disease, and did not give the Widal test.

Dr. G. B. Magrath gave a lantern demonstration of elastic tissue in the walls of arteries. His general conclusion was, from a large number of arteries examined, that the distribution of elastic tissue bears no relation to the size of the vessel, but probably has some definite relation to its function.

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Recent Literature.

Medical Diagnosis; A Manual of Clinical Methods. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S. Ed., Assistant Physician to the Royal Infirmary, Edinburgh; Lecturer on the Principles and Practice of Medicine in the School of Medicine of the Royal Colleges, Edinburgh. Fourth edition, revised and enlarged. With one hundred and twelve illustrations. Philadelphia: P. Blakiston, Son & Co. 1898.

This useful manual, which has been for some time out of print, has been recently revised, and largely rewritten, the chapters on the examination of the gastric contents, the blood, the urine, and the nervous system having been greatly amplified. Numerous illustrations have been added, which add considerably to the clearness of the descriptions, so that the book in its present form is a very complete and comprehensive manual of clinical methods, both general and special.

A Manual of Surgery for Students and Practitioners. By William Rose, M.B., B.S., London, F.R.C.S., Professor of Clinical Surgery in King's College, London, etc., and Albert Carless, M.S., London, F.R.C.S., Senior Assistant Surgeon King's College Hospital, etc. 1162 pages, 392 illustrations. New York: William Wood & Co. 1893.

This book, like many recently published, aims to "present the facts of surgical science in a concise form" adapted to the needs of the medical student or even those preparing for the more advanced English examinations in surgery. The requirements of the general practitioner has also been considered. The writers admit that it has been difficult to compress modern surgical science into a small text-book and state that they have only been able to outline much that could easily have been more elaborately described had space permitted. The first eight chapters of 234 pages are devoted to general subjects, such as inflammation, suppuration, ulceration, gangrene, sepsis and infection, tumors, cysts, wounds, hemorrhages, etc. The remaining ones describe specific traumatic and pathological conditions of special regions. Plastic surgery and amputations occupy each a chapter, and the book concludes with a chapter on anesthesia.

The book is very concisely written, in some instances so markedly so as to be little more than a good index of the special subjects under consideration. Operative technique is quite briefly described, and is usually included in the treatment of particular lesions or diseases. The field, however, has been quite thoroughly covered and the reader will find few things relating to surgery that do not appear in these pages in some form or other. At times the allusion is very brief, but in other instances an extended article appears. The book will well fulfil the purpose for which it has been written, that is, a text-book for students, and is a good *résumé* of the subject. It is a neat, well printed, somewhat heavy volume, so indexed and paragraphed that references to an especial subject or part of a subject is an easy task for the reader.

Elements of Histology. By E. Klein, M.D., F.R.S., Lecturer on General Anatomy and Physiology in the Medical School of St. Bartholomew's Hospital, London, and J. S. Edkins, M.A., M.B., Joint Lecturer on and Demonstrator of Physiology in the Medical School of St. Bartholomew's Hospital, London. In one 12mo volume of 506 pages, with 296 illustrations. Philadelphia and New York: Lea Brothers & Co.

As stated in the preface, this book, already well known to students of the subject, has been revised, and in part rewritten to meet the progress of research in minute anatomy. Particularly is this noticeable in the chapters on the nervous system, in which the recent ideas of cell structure and arrangement are given due weight, and the text much increased in value by numerous illustrations. An attempt has been made in this section to use the method of photography, and always with striking success; for example, the illustrations on page 205 and page 220 are not so instructive as diagrammatic representations would be, owing to the inadaquacy of reproduction of the original section. In other portions of the book less effort has been made to depart from the ordinary diagrammatic drawings, on the whole, with advantage in a text-book of this character.

The volume is well printed, not bulky, and in general is certainly to be recommended to the class of students for whom it is intended.

The Essentials of Histology. By Edward A. Schäfer, F.R.S., Professor of Physiology in University College, London. New fifth edition, revised and enlarged. Octavo, 350 pages, with 325 illustrations. Philadelphia and New York: Lea Brothers & Co. 1898.

This book is probably better known and more universally used than any similar text-book in the English language. With the advent of its fifth edition its popularity will no doubt be still further increased. The arrangement of this, as of previous editions, is intended to enhance its value in the class-room. It is divided into forty-six lessons, each of which is designed to occupy the student from one to three hours. No effort has been made to introduce the newer methods of illustration by means of photography, a conservatism which detracts nothing from the usefulness of the book as a laboratory guide. It is admirably printed on rather thin paper in the American edition and it may safely be predicted that this volume will occupy the same place of respect that its predecessors have before it.

A Woman Medical Inspector. — According to the *N. Y. Medical Journal,* Dr. Mary H. Murray has been appointed a medical-inspector of schools in New York.

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THE NATIONAL QUARANTINE CONVENTION AT MEMPHIS.

The Memphis Quarantine Convention, to which reference was made in the last issue of the Journal, ought to bring us within measurable distance of a settlement of the vexed question of the nature and limits of the quarantine service of the country.

The call for the meeting, issued by the Memphis Chamber of Commerce, was addressed to those only who were in favor of a comprehensive control of quarantine under the authority of the national government, and thus were cleared away many of the difficulties which have hitherto beset such conventions.

Nearly one hundred and fifty delegates were present, representing States, cities, commercial organizations and some of the great railroad systems of the southwest. Though many medical men were present as delegates from the various public health authorities of the country, still the physicians were, upon this occasion, in a minority. The South was, naturally, more fully represented than the North, and the State of Mississippi, which suffered more severely from the effects of yellow fever panic, than did any other Southern State during the recent epidemic, had the largest delegation of all.

The men composing the various delegations are distinguished in many walks of life. The very efficient chairman of the meeting was Gen. Luke E. Wright, of Memphis, formerly attorney-general of his State. At the head of the Mississippi delegation was ex-Governor Shands, professor of law in the University of Mississippi.

Ex-Governor Bullock, of Georgia, was an active and influential participant in the work of the body, both in committee-room and on the floor of the Convention, and was ably seconded by the very capable Mayor of Atlanta, Mr. Collier. The chairman of the Louisiana representation was a very prominent member of the Cotton Exchange of New Orleans, and though he had been instructed by that organization to resist the attempts of "the doctors" to obtain possession of the administration of quarantine, was able to support heartily and ably the resolutions which were finally adopted.

Under the energetic direction of the Chairman of the Convention, no time was lost in the usual and useless discussions upon the nature and proper treatment of yellow fever, for he discovered the happy expedient of relegating several papers upon these subjects, together with an exhaustive statement of our duty to the new possessions of the United States beyond the seas, to the evening sessions of the Convention, while the sub-committees of the meeting were at work upon the matters referred to them.

For a proper consideration of the difficulties which attend such Conventions as this, in Southern States, it should always be remembered that *yellow fever* is the one disease always present in the minds of the Southern people when the question of quarantine is under discussion, and it is quite apparent that this collection of men offered no exception to the rule. A considerable number of those present, especially among the representatives of the transportation companies, would undoubtedly have preferred to vote for some measure which gave absolute power to the general government in times of yellow fever epidemic and to stop there, rather than to go on with the consideration of a general system for the protection of the public health. It was well therefore for Dr. Hamilton, one of the delegates from Illinois, to call the attention, as he did, of the Convention to the necessity of a wider view of the great subject of the spread of the preventable diseases other than yellow fever. Dr. Hamilton's complete familiarity with the work of the Marine-Hospital Service gives to his opinions upon a national public health service great value, — a value which has not been essentially diminished by the apparent uncertainty as to the disinterested quality of his utterances upon this subject.

He represents the recorded opinions of the great medical associations of the land, and of the most influential public health organizations, and they are all in favor of some national organization, intelligent enough to comprehend the great problems presented by preventable diseases, and strong enough to use all the power of the general government in case of need, to control the spread of pestilence.

The Convention devoted two days to the consideration of the question of the best form of national organization, and as the result of their deliberations, adopted the resolutions which we have already printed.

These resolutions were prepared by a committee consisting of one delegate from each State represented in the Convention; this Committee was presided over by ex-Governor Shands, of Mississippi, and was again not under the control of the medical profession, and was able to come to a unanimous report. The report was adopted by a vote of 136 to four, and was then upon motion of a member of the minority made unanimous.

Those of our readers who are familiar with the proceedings of a quarantine convention in a Southern city will understand how important a result has been reached by this united report.

For the general interests of scientific medicine it is to be hoped that some agency may now be established for a wise and patient investigation of the one preventable exotic disease which is of more consequence than any other to this country. It is true that now and again officers of some of the medical services of the government at Washington have been sent into the tropics for brief periods of time to study yellow fever, but thus far we have gained little by such efforts, and cannot hope to do so until such studies can be carried on under the direction of a well-established department of government which shall not be compelled to fight for its existence at every session of Congress — as was the case with the National Board of Health.

The conditions which can meet the requirements of the resolutions of the Memphis Convention are substantially those of the so-called Spooner Bill, now before Congress, for the creation of a Bureau of Public Health with a commissioner at its head aided by a council composed of a delegate from each State. The council would serve many useful purposes: it would unite the activities of the various States in health matters, it would bring about an immediate connection between the authorities of the States and the office at Washington; every member of the council, having had experience in public health administration in his own State, would be a useful counsellor in the new board; and finally would exercise a most important function, in procuring, each in his own State, that support on the floor of Congress which is essential to the satisfactory maintenance of a public department, a support which cannot easily be refused to one who can speak with authority among the constituents of the respective members of Congress.

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SANITATION AND SMALL-POX.

Walter Lloyd has written on "Sanitation and Small-Pox" in the *Westminster Review* for November, 1898, and pointed out the fallacy of the anti-vaccination contention that improved sanitation, apart from vaccination, has brought about the diminution in the spread of small-pox during the present century. Sanitation, he declares, has done little if anything either to destroy the power of the infection or to prevent its casual introduction developing into an epidemic. He shows from the statements of opponents of vaccination, like Dr. Wallace, that small-pox is different from zymotic diseases such as cholera, typhus and enteric fever, which are believed to be communicated through the dejecta of the patient contaminating drinking-water, and which can be controlled by sanitary measures, — for small-pox "is spread either by bodily contact or by transmission of germs through the air." It is obvious that sanitation cannot prevent the communication of infection which is diffused by these means, though isolation may do a great deal; but isolation partially failed in Leicester in 1893 and much more markedly in Gloucester and Middlesborough subsequently. The difficulties of effecting isolation when an epidemic prevails are so serious as to be almost insurmountable, as boards of health in the large cities of England have testified.

We have place for only one piece of evidence bearing on this question which now especially interests sanitarians across the water, namely, the remarkable decline of small-pox in Glasgow in the early years of the present century. We have, first, the fact that small-pox did decline enormously in Glasgow from about the beginning of this century, and, secondly, that there were no sanitary improvements to account for this decline. A third fact in its bearing on the question is no less important: the general adoption of vaccination as a prophylactic measure synchronously with this decline.

The facts relating to the decline of small-pox were recorded by Dr. Robert Watt, of Glasgow, in 1813. The statistics cover thirty years, from 1783 to 1812. In the period prior to and including the year 1800, 19 per cent. of all deaths were due to small-pox. The actual figures are: total deaths, 31,088; and from small-pox, 5,958. After 1800 there was a great change; the actual figures for the five periods of six years each are given as follows:

Period.	Small-pox death-rate per 100 deaths from all causes.
I. 1783-1788	19.55
II. 1789-1794	18.22
III. 1795-1800	18.70
IV. 1801-1806	8.90
V. 1807-1812	3.90

The fact of the decline in the death-rate from small-pox is thus very apparent, as it was also in the mortality from the same disease in numerous other cities in England and elsewhere during the same period.

Dr. Watt now shows that while this decline went on, there were no such hygienic improvements in the city of Glasgow as to account for it on the hypothesis that it must have been due to defective sanitation. There was a rapid increase in the population from 1780 onwards. In that year the population was 42,832; it kept on augmenting every year till in 1811 it amounted to 110,000.

The earliest descriptions of the sanitary condition of Glasgow show that it was unspeakably vile. The lanes and alleys were reeking with disgusting filth, and "here and there was an opening for a pool of water from which there was no drain, and in which all the nuisances of the neighborhood were deposited in endless succession, to float and putrefy and wash away into noxious gases." Pigs, cows, dogs and human beings often occupied the same tenement, which too often was a cellar. Continued fevers were very prevalent, spreading from the ill-ventilated and ill-drained habitations. (See report of Dr. McVail in a pamphlet entitled "Vaccination or Sanitation.")

In 1837 Dr. Cowan, Professor of Medical Jurisprudence in Glasgow University, attributes the general prevalence of contagious diseases "to the total want of cleanliness among the lower orders of the community, to the absence of ventilation in the more densely peopled districts; and to the accumulation for weeks and months together of filth of every description in our public and private dunghills; to the overcrowded state of the lodging-houses resorted to by the lowest classes, etc." This report was followed by similar reports from Dr. Symons, Dr. Neil Arnott, and Mr. Chadwick, — the latter thought in 1842 "that both the structural arrangements and the condition of the population of Glasgow was the worst of any to be seen in any part of the kingdom." Dr. McVail declares that in dealing with this subject "we are dealing with a population in which sanitation is unknown; a population, moreover, whose health conditions appear to have been steadily going from bad to worse, owing to the rapid growth of the city." He adds (and this indicates the startling fallacy of the contention of Wallace *et id omne genus*): "Thus while insanitation was hurrying from bad to worse, till the startling conditions described in 1818 and later years were being approached, and while other infectious diseases of infancy were on the increase, small-pox was diminishing by leaps and bounds."

The above facts seem to dispose of the thesis that, as far as one important city in the United Kingdom is concerned, small-pox is a filth disease to be remedied and stamped out by improved sanitation; and the conclusion of Mr. Lloyd seems warranted that the decline in the mortality and spread of small-pox during this century must be due to some other cause or causes than those alleged by the anti-vaccinationists.

MEDICAL NOTES.

Typhus in London. — Three cases of typhus fever were reported in London during the week ending November 5th.

Resignation of Mr. Frederick Treves. — Mr. Frederick Treves has resigned from the Surgical Staff of the London Hospital, owing to the demands of his private practice.

A New Will of Dr. Thomas W. Evans. — Word was recently received at Philadelphia that a later will of Dr. Thomas W. Evans, the millionaire dentist, had been discovered in Paris and is now on its way to this country.

Empyema at Camp Thomas. — The Pittsburgh (Pa.) Academy of Medicine will hold its eleventh annual meeting on Friday evening, December 2d, and Dr. Nicholas Senn will deliver an address on "Empyema at Camp Thomas."

Disease Among German Cattle. — It is reported that according to official statistics German cattle are suffering to a large extent from tuberculosis. At least 40 per cent. of all the German cattle are reported to have tuberculosis, and in some districts the percentage is as high as 79 per cent.

German Toys and Poison. — Dr. D E. Salmon, chief of the Bureau of Animal Industry, in his report for the year ending June 30, 1898, states that in connection with the examination of imports from Germany, it was found that German toys and colored goods were poisonous, and all highly painted German toys may be regarded as very dangerous to children, who may suck off the paint or swallow pieces that may be chipped off.

Professor Virchow Re-elected. — At the general election of Deputies in Prussia, on November 3d, Professor Virchow was returned by the third electoral district of Berlin. The great pathologist, who is a Radical in politics, received 1,358 votes against 782 polled for a Conservative opponent. Professor Virchow this time received nearly 200 more votes than at the election of 1893.

Dr. William Pepper Memorial Meeting. — We learn from the *Philadelphia Medical Journal* arrangements have been perfected for the holding of a meeting in commemoration of the late Dr. William Pepper, in the chapel of the University of Pennsylvania, on the evening of November 29th. Governor Hastings, as president *ex officio* of the Board of Trustees, is expected to preside, and addresses are to be made by Drs. S. Weir Mitchell, Jas. Tyson, Mr. Daniel Baugh, and others.

The Comparative Longevity in European Nations. — According to the *Bulletin Général de Thérapeutique* the average duration of life amongst the chief nations of Europe is as follows, the figures being based upon the bills of mortality for the decade 1881–90: Sweden and Norway, 50 years; England, 45 years and 3 months; Belgium, 44 years and 11 months; Switzerland, 44 years and 4 months; France, 43 years and 6 months; Austria, 39 years and 8 months; Prussia and Italy, 39 years; Bavaria, 36 years; and Spain, 32 years and 1 months.

A Fatal Glove Fight. — A fight with four-ounce gloves at the National Sporting Club in London, recently resulted in the death of Thomas Turner, twenty-three years of age, one of the contestants, who received in the thirteenth round a light blow close to the right eye. He collapsed, recovered sufficiently to stand up and shake hands with his opponent, and then became unconscious and soon died, the autopsy showing a clot of blood on the right side of the brain. The physician who made the post-mortem said that Turner's heart was weak and small, and the jury returned a verdict of "accidental death" with a rider suggesting that the Club require that contestants in glove fights be required to pass a medical examination before contesting. It is doubtful if a medical examination would have excluded Turner, whose death appears to have been due to the too great strength of his heart in pumping blood out of a ruptured artery than to its weakness.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, November 30, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 52, measles 178, typhoid fever 21.

Bequest to the Harvard Medical School. — By the will of the late Edward Austin, of Boston, the sum of $10,000 is bequeathed to the Bacteriological Laboratory of the Harvard Medical School.

The "Investigating Committee." — The President's Committee on the management of the War Department is sitting in Boston this week. Drs. H. L. Burrell, Myles Standish, E. G. Brackett, R. C. Cabot and others have given testimony before the Committee.

An Addition to the Boston Dispensary. — At a recent meeting of the Board of Managers of the Boston Dispensary, it was decided to begin work at once on the additions and improvements which have been planned. The estimated cost of these improvements is $65,000, and it is expected that they will be completed by next autumn.

Is the Practice of Christian Science Dangerous to Life? — The Boston *Sunday Globe*, of November 20th, contained a signed editorial symposium upon this question, to which Dr. S. W. Abbott, of the State Board of Health, contributed a concise and judicious statement. We fear that, notwithstanding such statements, "pseudological inanities" will continue to succeed each other through brief periods of notoriety, and that the ignorant will continue ignorantly to declare what is wisdom.

NEW YORK.

The Dangers of Lay Interference. — In filing a certificate recently at the Coroner's office, regarding the death of a two-year-old child from diphtheria. Dr. John F. Woulters accompanied it with a note to the effect that the case had been seriously complicated by outside interference. When he was called to see the child he found that upon the advice of a neighbor rags soaked in kerosene had been applied to its breast, and kept there for several hours. As a result the skin was denuded for a space of six or seven inches, and the whole surface became rapidly covered with diphtheritic membrane. Death ensued in consequence. The use of the kerosene as a counter-irritant was undoubtedly due, he thought, to ignorance, as certainly only good intentions existed, but this act seriously complicated the case, and rendered a cure impossible. In conclusion, he stated that he reported this occurrence for the reason that the practise of interfering with the treatment of a physician is too common among the ignorant classes, and ought to be checked at every opportunity in the interest of humanity.

An Immigrant Dies from Small-Pox. — A Syrian child, one year old, which was removed a few days previously from the steamer *La Normandie* of the French line, died of small-pox at the Riverside Hospital on North Brother Island on November 25th. This is the first death from small-pox reported in the city for many months.

Intracerebral Injection of Tetanus Serum. — In a case of lockjaw resulting from the accidental amputation of the end of a finger, in the practice of Dr. F. L. Johnson, of Corona, in the Borough of Queens, an intracerebral injection of tetanus antitoxin was made by Drs. Albert C. Coombes and Deranbard, of Manhattan, on November 25th. The operation was followed by immediate improvement, and the patient is reported to be in a fair way of recovery.

An Embolus of Muscular Tissue. — The death of a patient in St. Catherine's Hospital, Brooklyn, is reported from a very curious cause. He was a young man whose face was terribly mangled by a gunshot accident, and the surgeons of the hospital had regarded their successful treatment of the case as a triumph of plastic surgery. On November 25th, while chatting in excellent spirits, he fell dead without a moment's warning, and the autopsy showed the sudden fatal result was due to a minute portion of muscular tissue from the wound which had been forced into the circulation, and finally made its way to the heart.

A Dinner to Dr. John P. McGowan. — On November 23d Dr. John P. McGowan was given a complimentary dinner at Fleuret's by the New York Celtic Medical Society, and was also made the recipient of a handsome loving-cup in token of the appreciation by his fellow-members of his services during the war. Dr. John Aspell presided, and among the speakers were Drs. Constantine McGuire, F. J. Quinlan and T. J. McGillicuddy. Dr. McGowan patriotically gave up a lucrative practice to become a surgeon in the New York Naval Reserve, and served with distinction on board the cruiser *Yankee.*

The New York State Association of Railway Surgeons. — At the eighth annual meeting of the New York State Association of Railway Surgeons, held in the Academy of Medicine Building on November 17th, the following officers were elected: President, Dr. T. D. Miller, Middletown; First Vice-President, Dr. J. L. Eddy, Olean; Second Vice-President, Dr. G. N. Hall, Binghamton; Secretary, Dr. C. B. Herrick, Troy; Treasurer, Dr. H. P. Jack, Canisteo. The morning session was devoted to a general discussion of "Surgical Service on Railways." In the afternoon the President, Dr. Herrick, delivered an address on "Surgical Technique," and a number of papers on various surgical topics were read and discussed.

The New Jersey Village for Epileptics. — The New Jersey village for epileptics has just been opened. The property, which is in the vicinity of Princeton, consists of 187 acres in a high state of cultivation and has an excellent water-supply. It was formerly known as "Maplewood Farm," and the old Voorhees mansion on it will constitute the nucleus of the village. The State authorities have also secured the right to purchase a tract of 213 acres adjoining, which will eventually be added to it.

Craig Colony Prize for Original Research in Epilepsy. — The President of the Board of Managers of Craig Colony offers a prize of $100 for the best contribution to the pathology and treatment of epilepsy, originality being the main condition. The prize is open to universal competition, but all manuscripts must be submitted in English. All papers will be passed upon by a Committee to consist of three members of the New York Neurological Society, and the award will be made at the annual meeting of the Board of Managers of the Craig Colony, October 10, 1899. Each essay must be accompanied by a sealed envelope containing the name and address of the author and bearing on the outside the motto or device which is inscribed upon the essay. The successful essay becomes the property of the Craig Colony, for publication in its Annual Medical Report. Manuscripts should be sent to Dr. Frederick Peterson, 4 West 50th Street, New York City, on or before September 1, 1899.

Miscellany.

"SURGICAL INTERFERENCE" OR "SURGICAL INTERVENTION"?

We have never understood why authorities in surgery use the word "interference" when speaking of operative or surgical treatment. When a surgeon performs an operation for the correction of a deformity, the mitigation of pain or the saving of life, does he mean to say that he interferes? If it be interference, then he is culpable; but certainly no operator will plead guilty to the charge of doing meddlesome surgery, and the inevitable conclusion is that the term "surgical interference" is a misnomer. Whenever we read it in text-books, or in current literature, we feel like substituting the word *intervention* for "interference," using the word intervention in the sense of interposition, or, better still, mediation — a coming between for a friendly purpose. The word interference suggests the idea of collision, clashing, opposition, officiousness, intermeddling, etc.

According to Webster: "A man may often *interpose* with propriety in the concern of others; he can never *intermeddle* without being impertinent or officious; nor can he *interfere* without being liable to the same charge, unless he has rights which are interfered with."

Let us see what Trench has to say. We quote: "In our practical use, *interference* is something offensive. It is the pushing in of himself between two parties on the part of a third who was not asked, and is not thanked for his pains, and who, as the feeling of the word implies, had no business there; while interposition is employed to express the friendly, peacemaking mediation of one whom the act well became, and who, even if he was not specially invited thereunto, is still thanked for what he has done."

A few days ago we suggested this improved phraseology to two of our surgical friends, both of whom are teachers of surgery and liberal contributors to surgical literature. They agreed with us that the point was well taken, and announced it as their intention to adopt the suggestion. Speaking for ourselves, this journal will hereafter use the term surgical *intervention* instead of surgical interference, and we shall hope to see its general adoption by surgical writers. — *Richmond Journal of Practice.* November, 1898.

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DIETARY CRANKS.

The *Alienist and Neurologist* finds some amusement at the expense of the "dietary crank." It says: "A sect has lately arisen which has evolved a theory which is truly ponderous in the way in which it tramples down the joys of the table. The Ralston Club has solved the mystery of arterio-sclerosis. Their logic is simple. The arteries calcify; the lime-salts cause calcification; all foods except fruits and all natural waters contain lime-salts; *ergo:* eat nothing but fruit, drink nothing but distilled water. They apparently assume that with this one mighty brain-throb they have solved the problem of life, and that they have left men no shadow of an excuse for dying under two hundred years of age. The monkey, the nearest of kin to the hairy progenitor of man, is appealed to as a touching instance of plain living (we wish we could add high thinking, but though the apostles of Ralston may believe it they do not expressively say so). The monkey, they tell us, eats only fruits, and never drinks water with his meals. Presumably the reason why he fails of the double-century mark in respect of age is because he does not drink distilled water. The Ralstonites pause in their consideration of the animal kingdom with the monkey. This was unfortunate. The raven, for instance, lives to be one hundred years old. He lives on carrion. The next army of cranks may be induced to follow his example.

"The fruit-eating craze is possibly the most degenerate of the many recent fads. The fruit-eating and pot-bellied natives of the tropics and their next lower relatives, the apes, are truly inspiring objects of imitation by civilized man; not even their outdoor and arboreal lives save them from the consequences of a meagre and irritant regimen. It is truly pitiful to see the army of neurasthenics, dyspeptics and rheumatics, starving their tissues and acidulating their blood at the beck of a few, to put it charitably, hair-brained enthusiasts. It is fair to suppose that a troop of rickety children will later rise up and call them anything but blessed, a fate from which the ape saves himself by abundant potations of river water. The fact with regard to fruit is that although it contains little nourishment it agrees well with many people endowed with a vigorous gastric mucosa and fairly alkaline blood. To them it brings looseness and joy. In many dyspeptic states it is the first food-stuff to disagree, and to the ill-nourished neurasthenic it is a miserable substitute for the better tissue builders. An appeal to the facts of evolution gives little comfort to the cranks of one dietary idea. Primitive man has as hunter and herdsman thriven on an animal dietary. Nuts and fruits have served his turn as well, and encouraged him to the cultivation of the cereals. There is no evidence to show that the people of any nation have become longer lived or shorter lived on account of an exclusively vegetable dietary, or that any association of cranks has increased the longevity of its members by any exclusive system whatever." — *Food and Sanitation.*

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THERAPEUTIC NOTES.

Treatment of Tetanus. — In a circumstantial address on tetanus delivered before the Society of German Naturalists and Physicians,[1] Prof. R. Stintzig reviews the present status of serum-therapy in tetanus. His personal experience is such as to prevent him from forming any positive opinion regarding the value of the injections. Of three cases treated by the antitenaüic serum, two, of great severity, but in whom the injections were made rather late (twelve and five days after the beginning of the convulsions), terminated fatally, while the third, a mild case however, recovered; the author is inclined to think that this third case might have recovered without the use of the serum. Even if we are to keep strictly to Behring's and Knorr's rule, that the injection is to be employed, at the latest, thirty-six hours after the appearance of convulsions, the results are not infallible; for out of fifteen cases thus treated (as collected from the literature of the subject) five recovered and ten were fatal. The difficulty in applying the treatment effectively is ascribed frequently to the impossibility of recognizing the disease early enough for treatment. He also brings forward the recent attempts of Krokiewicz to treat tetanus by the injections of an emulsion of brain matter, as it is thought that the spinal cord and especially the brain of every known animal species, including man, possesses certain properties which counteract the effect of tetanus poison. Krokiewicz treated one patient suffering from traumatic tetanus with injections of emulsion of brain matter in a normal salt solution, with a successful result.

Fatal Sulfonal Poisoning. — O. Wein[2] tells of a case of fatal sulfonal poisoning, the symptoms of which began first with gastric phenomena, followed by various pareses, and only on the eighth day there appeared hematoporphynuria, which is ordinarily considered as a warning symptom that the drug has been pushed too far. Based on the result of this case, the author advises not to administer the drug but f few days at a stretch, and then interrupt it for a longer than four or five days, as has been cons sufficient heretofore.

Chloranemia — (Subcutaneous injections of ir

℞	Ferri ammon. citratis	gr. x
	Aquæ destil.	℥ ii

M. Inject into the interscapular region from eight to fiftee of the solution, which will equal one or two grains of the ci iron.

For Uric-Acid Gravel (Golding Bird):

℞	Sodi bicarb.	ʒ iss
	Acidi benzoin	ʒ ss
	Sodi phosph	ʒ iiss
	Aquæ bullient	℥ iii
M.	Dissolve and add:	
	Cinnamon water	℥ vi
S.	Two teaspoonfuls three times a day.	

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[1] Münch. med. Woch., October 4, 1898.

[2] Berliner klin. Woch., No. 39, 1898.; Münch. med. Woch., Octobe 4, 1898.

[3] Semaine Médicale.

Correspondence.

GLANDULAR THERAPEUTICS.

Boston, November 23, 1898.

Mr. Editor: — In reading Herodotus the other day, I came across the following statement (Book IV, Par. 109): "By the Greeks, however, the Budini are called Geloni, though erroneously so called. Their country is thickly covered with trees of all kinds, and in the thickest wood is a spacious and large lake, and a morass, and reeds around it: in this otters are taken, and beavers, and other square-faced animals; their skins are sewn as borders to cloaks, *and their testicles are useful for the cure of diseases of the womb.*" As Herodotus flourished in the fifth century B. C., it would seem from the above quotation that the therapeutic application of animal glands is of somewhat ancient date.

Very truly,
J. W. Courtney, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, November 12, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1088	305	8.64	16.11	1.89	1.89	2.88
Chicago	1,619,2-6	—	—	—	—	—	—	—
Philadelphia	1,240,226	397	102	12.75	11.25	2.75	1.25	6.75
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	200	51	8 00	16.00	.50	2.50	3.50
Baltimore	506,389	171	46	12.76	11.02	.58	4.06	6.96
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	—	—	—	—	—	—	—
Washington	277,000	98	22	13.00	8.00	2.00	5.00	4.00
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	40	7	2.50	2.50	2.50	.—	—
Nashville	87,754	48	17	20.80	12.48	4.16	2.08	14.56
Charleston	65,165	—	—	—	—	—	—	—
Worcester	108,240	26	4	3.85	7.70	3.85	—	—
Fall River	95,919	25	—	16.00	8.00	12.00	4.00	—
Cambridge	89,724	21	8	14.28	14.28	—	4.76	—
Lowell	88,641	24	9	16.64	12.48	—	8.32	—
Lynn	66,703	17	6	5.88	—	—	—	—
New Bedford	66,340	20	7	15.00	—	10.00	—	5.00
Somerville	66,101	10	2	10.00	—	—	—	10.00
Lawrence	57,263	13	4	7.69	7.69	—	7.69	—
Springfield	56,501	17	2	—	5.88	—	—	—
Holyoke	43,424	8	2	—	25.00	—	—	—
Brockton	37,278	6	0	—	—	—	—	—
Salem	36,883	—	—	—	—	—	—	—
Malden	34,613	—	—	—	—	—	—	—
Chelsea	33,468	9	2	—	11.11	—	—	—
Haverhill	32,022	7	1	14.28	14.28	—	14.28	—
Gloucester	30,589	5	—	20.00	—	—	—	—
Newton	29,716	6	2	—	16.66	—	—	—
Fitchburg	29,438	5	1	40.00	—	—	20.00	20.00
Taunton	28,167	10	1	10.00	—	—	10.00	—
verett	25,538	11	4	9.09	—	—	—	—
y	23,549	4	0	—	—	—	—	—
ld	22,643	—	—	—	—	—	—	—
m	22,296	6	0	16.66	—	—	16.66	—
Adams	20,971	5	1	40.00	—	—	20.00	20.00
pee	17,842	1	0	—	—	—	—	—
ord	16,511	5	1	20.00	—	—	20.00	—
uryport	14,915	4	1	—	50.00	—	—	—
se	14,032	1	0	—	—	—	—	—

ths reported 2,303; under five years of age 608; principal ious diseases (small-pox, measles, diphtheria and croup, o-spinal meningitis, diarrheal diseases, whooping-cough, elas and fevers) 236, acute lung diseases 310, consumption phtheria and croup 97, typhoid fever 55, diarrheal diseases ooping-cough 11, cerebro-spinal meningitis 11, scarlet s, measles 5.

n whooping-cough New York 6, Philadelphia 4, Washing- From cerebro-spinal meningitis New York 6, Baltimore ston, Lynn and Gloucester 1 each. From scarlet fever New 5, Philadelphia, Boston and Washington 1 each. From sles New York 4, Boston 1. From malarial fever Philadel- ia 3.

In the thirty-three greater towns of England and Wales, with an estimated population of 11,218,378, for the week ending November 5th, the death-rate was 17.0. Deaths reported 3,663; acute diseases of the respiratory organs (London) 237, diarrhea 123, fever 91, diphtheria 69, measles 68, scarlet fever 43, whooping-cough 26.

The death-rates ranged from 6.7 in Croydon to 22.2 in Liverpool; Birmingham 18.8, Bradford 13.8, Bristol 13.0, Gateshead 16.6, Hull 16.8, Leeds 18.6, Leicester 16.7, London 16.1, Manchester 21.7, Newcastle-on-Tyne 18.7, Nottingham 18.5, Portsmouth 15 1, Sheffield 17.8, Sunderland 18.1, Swansea 18.4, West Ham 18.4.

METEOROLOGICAL RECORD

For the week ending November 12th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Maximum.	Minimum.	Relative humidity. 8.00 A. M.	8.00 P. M.	Daily mean.	Direction of wind. 8.00 A.M.	8.00 P. M.	Velocity of wind. 8.00 A. M.	8.00 P. M.	We'th'r.* 8.00 A. M.	8.00 P. M.	Rainfall in inches.
S....6	29.63	57	61	53	89	86	88	S.W.	S.W.	18	10	R.	C.	.56
M.. 7	30.09	42	44	40	66	58	62	W.	W.	16	5	C.	C.	
T...8	30.29	48	60	36	67	63	65	S.	S.W.	12	16	C.	C.	
W.. 9	30.33	52	59	46	63	78	70	W.	E.	6	7	O.	O.	
T..10	30.00	45	48	42	85	100	92	E.	N.W.	20	9	R.	R.	.99
F..11	29.82	42	47	37	96	70	83	W.	N.W.	10	20	O.	C.	.31
S...12	30.30	40	48	31	60	44	52	N.W.	W.	12	7	C.	C.	
☞	30.07	47	52	41	75	71	73			13	11			.24

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 19, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from: Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	1075	198	7.92	17.82	1.80	9.90	3.24
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	222	67	4.95	23.85	.45	.45	1.35
Baltimore	506,389	179	62	17.36	12.32	2.80	2.24	11.76
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	91	33	21.80	11.99	8.72	1.09	7.63
Washington	277,000	—	—	—	—	—	—	—
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	64	20	4.68	12.54	1.56	—	1.56
Nashville	87,754	36	8	2.77	2.77	—	—	2.77
Charleston	65,165	28	4	—	3.57	—	—	—
Worcester	108,240	27	9	7.40	7.40	—	—	7.40
Fall River	95,919	27	13	22.20	7.40	22.20	—	—
Cambridge	89,724	16	5	6.25	25.00	—	—	6.25
Lowell	88,641	31	6	16.15	16.15	3.23	6.46	6.46
Lynn	66,703	14	1	—	—	—	—	—
New Bedford	66,340	20	8	25.00	10.00	5.00	10 00	—
Somerville	61,101	16	3	25.00	12.50	12.50	—	—
Lawrence	57,263	15	6	13.33	13.33	—	—	13.33
Springfield	56,501	6	2	50.00	16.66	—	33.33	16.66
Holyoke	43,424	—	—	—	—	—	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	10	5	10.00	10.00	10.00	—	—
Malden	34,613	—	—	—	—	—	—	—
Chelsea	33,468	8	2	—	25.00	—	—	—
Haverhill	32,022	10	1	—	10.00	—	—	—
Gloucester	30,589	13	5	46.14	—	7.69	—	—
Newton	29,716	7	1	—	—	—	—	—
Fitchburg	29,438	9	2	—	11.11	—	—	—
Taunton	28,167	6	2	33.33	16.66	—	16.66	—
Everett	25,338	2	0	—	—	—	—	—
Quincy	23,549	6	3	—	—	—	—	—
Pittsfield	22,643	7	2	28.56	—	14.28	—	14.28
Waltham	21,812	—	—	—	—	—	—	—
North Adams	20,971	3	1	—	—	—	—	—
Chicopee	17,842	5	0	—	—	—	—	—
Medford	16,511	—	—	—	—	—	—	—
Newburyport	14,915	2	0	—	—	—	—	—
Melrose	14,032	—	—	—	—	—	—	—

Deaths reported 1,988; under five years of age 584; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 167, acute lung diseases 325, consumption 167, diphtheria and croup 76, typhoid fever 27, diarrheal diseases 25, whooping-cough 14, scarlet fever 9, cerebro-spinal meningitis 8, measles 5, erysipelas 3.

From whooping-cough New York 6, Boston and Pittsburg 3 each, Providence and New Bedford 1 each. From scarlet fever New York 7, Boston and Providence 1 each. From cerebro-spinal meningitis Worcester and Somerville 2 each, New York, Boston, New Bedford and Haverhill 1 each. From measles New York 5. From erysipelas New York 2, Baltimore 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending November 12th, the death-rate was 17.2. Deaths reported 3,706; acute diseases of the respiratory organs (London) 248, fever 96, diarrhea 85, diphtheria 77, measles 71, scarlet fever 42, whooping-cough 40.

The death-rates ranged from 11.3 in Croydon to 23.3 in Preston; Birmingham 18.0, Bradford 15.2, Cardiff 13.2, Gateshead 22.6, Huddersfield 15.8, Hull 18.1, Leeds 18.4, Liverpool 22.5, London 16.3, Manchester 21.5, Newcastle-on-Tyne 18.9, Nottingham 16.6, Portsmouth 17.6, Sheffield 16.8, West Ham 14.7.

METEOROLOGICAL RECORD

For the week ending November 19th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...13	30.16	44	52	37	65	73	69	S.W.	S.W.	3	9	C.	O.	
M...14	29.81	46	50	42	83	67	75	W.	W.	12	10	O.	C.	.20
T...15	30.17	42	48	35	73	57	65	W.	S.W.	7	9	C.	C.	
W...16	30.30	46	54	38	63	68	66	W.	S.	7	3	O.	C.	
T...17	30.19	43	48	38	79	91	85	N.W.	E.	5	14	O.	R.	.22
F...18	29.92	46	47	44	96	98	97	N.E.	N.E.	12	4	R.	R.	.09
S...19	29.35	44	46	42	98	95	96	N.E.	N.W.	14	15	R.	R.	1.25
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE THIRTY-ONE DAYS ENDING NOVEMBER 17, 1898.

Wheeler, W. A., surgeon. To rejoin station at Cincinnati, O. October 28, 1898. Granted leave of absence for fifteen days from November 16. November 15, 1898.

Banks, C. E., surgeon. To rejoin station at Washington, D. C. November 1, 1898.

Kalloch, P. C. To rejoin station at Cairo, Ill. October 28, 1898.

Glennan, A. H., surgeon, Granted leave of absence for fifteen days. November 1, 1898. To rejoin station at St. Louis, Mo. November 17, 1898.

Wasdin, Eugene, surgeon. Granted leave of absence for ten days. October 27, 1898. Upon expiration of leave to report at Bureau for special duty. November 1, 1898. To proceed to Havana, Cuba, for special temporary duty. November 8, 1898.

Williams, L. L., passed assistant surgeon. Granted leave of absence for one month and fifteen days. November 1, 1898.

Magruder, G. M., passed assistant surgeon. To rejoin station at Memphis, Tenn. October 28, 1898.

Cobb, J. O., passed assistant surgeon. Upon completion of duties at Oxford, Miss., to proceed to Detroit, Mich. November 2, 1898. To report at Bureau for special temporary duty. November 10, 1898.

Geddings, H. D., passed assistant surgeon. To proceed to Havana, Cuba, for special temporary duty. November 8, 1898.

Stimpson, W. G., passed assistant surgeon. To rejoin station at St Louis, Mo. October 28, 1898. To inspect unserviceable property at Memphis, Tenn. November 1, 1898.

Rosenau, M. J., passed assistant surgeon To inspect unserviceable property at San Francisco, Cal. November 7, 1898.

Nydegger, J. A., passed assistant surgeon. Granted leave of absence for fifteen days from November 15, 1898. November 4, 1888.

Tabb, S. R., assistant surgeon. To report at Stapleton, S. I., for temporary duty. October 29, 1898. To report at Bureau for special temporary duty. November 1, 1898. Relieved from duty at New York and directed to assume temporary charge at Vineyard Haven, Mass. November 1, 1898.

Hastings, Hill, assistant surgeon. To proceed to New York for duty at Immigration Depot. November 4, 1898.

Lavinder, C. H., assistant surgeon. To report at Bureau for orders. November 15, 1898. To proceed to Delaware Breakwater Quarantine and report to medical officer in command for temporary duty. November 17, 1898.

Von Ezdorf, R. H., assistant surgeon. Granted fifteen days' extension of leave of absence on account of sickness. November 8, 1898.

Foster, M H., assistant surgeon. Granted thirty days' extension of absence on account of sickness. November 8, 1898.

Lumsden, L. L., assistant surgeon. To proceed to Egmont Key for temporary duty. November 12, 1898.

White, M. J., assistant surgeon. Granted leave of absence for thirty days on account of sickness from November 13, 1898. November 14, 1898.

Heiser, V. G., assistant surgeon. To proceed to New York for duty at Immigration Depot. November 7, 1898.

McAdam, W. R., assistant surgeon. To proceed to New York for duty at Immigration Depot. November 7, 1898.

Gwyn, M. K., assistant surgeon. To proceed to Boston, Mass., for duty. November 7, 1898.

Board convened to meet at Washington, D. C., at 10 o'clock A. M., November 9, 1898, to examine candidates for appointment as assistant surgeon. Detail for the Board: Surgeon George Purviance, Chairman, Surgeon Charles E. Banks, Passed Assistant Surgeon R. M. Woodward, Recorder. November 1, 1898.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held in the Anatomical Lecture Room, Harvard Medical School, on Monday evening, December 5th, at 8 o'clock.

The subject of the evening will be "The Medical Work of the Massachusetts Volunteer Aid Association at Santiago, Puerto Rico, Montauk Point, Chickamauga, Camp Alger and Boston." Communications are expected from Drs. E. G. Brackett, J. B. Clarkson, R. C. Cabot, W. H. Prescott, T. B. Shea, M. Standish, M. Prince, J. B. Blake, F. G. Balch and H. L. Burrell.

All members of the Massachusetts Medical Society are invited to attend.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, December 7, at 8.15 o'clock.

The meeting will be devoted to the presentation and discussion of a number of interesting surgical cases which will be shown by various surgeons.

"Spina Bifida with Report of an Operation on a Case Eight Hours after Birth; Recovery," Dr. R. W. Lovett.

The presentation of specimens, apparatus, etc., of surgical interest is also invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

RECENT DEATH.

Josiah Mark Blood, M.D., M.M.S.S., died in Ashby, November 19, 1898.

BOOKS AND PAMPHLETS RECEIVED.

A Note on the Bedborough Trial. By Havelock Ellis. London. 1898.

Tannigeno e Tannalbina. Pel Dott. Francesco Corletto. Bologna. 1898.

Vitality: An Appeal, an Apology and a Challenge. By Lionel S. Beale. Reprint. 1898.

Exiled for Les Majesté. By James T. Whittaker. Cincinnati: Curtis & Jennings. 1898.

Sporadic Cretinism in Ontario. By Alexander MacPhedran, M B., Ontario. Reprint. 1898.

Transactions of the Medical Society of the State of West Virginia, held at Martinsburg, May 18, 19 and 20, 1898.

Ergot Aseptic. The Pharmacologic Assay of the Heart Tonics. By E. M. Houghton, Ph.C., M.D., Detroit, Mich. Reprints. 1898.

A Case of Forcible Reduction of the Deformity of Vertebral Tuberculosis; Death after Three Months and the Autopsy Report. By Harry M. Sherman, M.D., and Harold Brunn, M.D., San Francisco, Cal. Reprint. 1898.

Original Articles.

EXPERIENCES AT THE VARIOUS HOSPITALS IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES PREVALENT IN THE ARMY.[1]

EXPERIENCES IN THE CARE OF THE SOLDIERS AT THE MASSACHUSETTS GENERAL HOSPITAL. BY H. F. VICKERY, M.D.

I INTEND to speak only a few minutes about this subject, which has been already so thoroughly gone over, and I would like, first of all, to say how much I am indebted to my chief assistant, Dr. G. W. Moorehouse, for very careful work in preparing the data for a review of my cases. Under my care came ninety soldiers in all, of whom three died — one from malaria of the remittent form and dysentery, one from typhoid fever with a very severe hemorrhage, one from typhoid fever complicated by that rare form of pneumonia in which the bacillus capsulatus is found — Friedländer's bacillus — which is a very fatal form of the disease.

About the general appearance of the soldiers, I was very much struck by the change in them, from what they were when they left the United States. They looked almost like foreigners, were very much emaciated, and very much pigmented; not merely sunburned, as seen upon covered parts of the body. This I ascribed to the destruction of the blood cells and a consequent deposit of blood pigment. In very many cases the nails showed this pigmentation. I never to my knowledge saw the nails after yellow fever, but the large majority of the men from Cuba had a line on their nails of natural color near the root, corresponding to the time since they had left Cuba, and nearer the end of the finger a pigmented portion acquired in Cuba. Almost all of them had enlargement of the epitrochlear and other glands, and almost all, without regard to the disease they had, had big spleens; and it was our experience that whatever disease they had, quinine seemed to be good for them. If quinine was omitted from the treatment, some malaria popped up before they left. With the majority a very rapid improvement was noticed, beginning visibly the next day after arriving. The malaria of all kinds in our experience seemed to be benefited by quinine and the largest doses we used were fifteen grains at a time. That was given six hours before a chill if we knew when that was, or as the temperature began to fall after the chill. It was given in one large dose at either of those times, and at other times a common way was three grains three times a day, or four times a day, and sometimes as much as five grains three times a day. One or two cases had bisulphate of quinine injected subcutaneously. The one who died was treated so. The places where it was injected looked rather bad, looked something as I have seen places look where fluid extract of ergot has been injected. None of them came to sloughing in this man, perhaps he died too soon, but the benefit was not very great. Fowler's solution, in doses of about three minims, seemed to be of value in the severe cases, or those with crescentic forms. We had cases of dysentery, but never found any amebæ, and did not find any advantage in quinine as a rectal irrigation compared with other things, using also nitrate of silver, and normal serum solution and pure water. Much benefit seemed to come from a dose of castor oil in some of the cases of dysentery. The worst cases of dysentery did not seem to mind much anything we did; they kept on and apparently stopped when they got ready. It may be there were deep ulcers which took time to heal, but it was rather discouraging watching the patients. Diet did not seem to have much influence — I mean whether it was a diet of boiled milk, or, on the other hand, nitrogenous diet — it could not, to my mind, be proved that one was better than the other, but I was inclined to think that a complete change, as with a baby from a milk diet to a purely nitrogenous diet, seemed of some value, merely on the theory that if one kind of germs were being well nourished on, for instance the milk diet, a complete change in diet would cause that kind to wane or disappear. It had been said about these cases that a great many of them had had their stomachs all upset by quinine. So far as our experience went there were only one or two who vomited much, so that we did not find this injury from quinine. What was a remarkable thing, we seemed to get a good deal of benefit in the malarial cases from quinine, and yet cinchonism was not caused in more than two or three of all our cases. The benefit was got without those symptoms of the drug. Dr. Moorehouse has done an immense amount of work, which I mean to put in better shape to print, but it is no time to-night to read it. I think some of these charts might illustrate facts in a simple way, if they were passed around.

As to the prognosis of these soldiers, I think it is very likely that they will be troubled more or less off and on for a long while; the malaria will come and go, as they have bad luck. Here is the chart of a man who had the Widal reaction when he came in, and no plasmodia, and then, after almost three weeks, he had a chill and the malaria organism was found. Here is a typhoid that all of a sudden had a very typical malarial rise, although nothing was found. And here is a man who went out about ten days after he came in, his temperature having been normal a week, but I am sorry to say he was a hard drinker. He went out the 8th of August and came back the 22d of September, after a spree, very ill indeed. The crescentic forms had developed meanwhile. I will send the two charts around — the innocent one and the way he was finally. He got well. Here is a chart which shows how apparently amenable to quinine this crescentic form was. Here is a man who said he could not bear quinine in any dose, who took ten grains every morning for three mornings and it cured him. He did not feel it at all until he was told what he had had, and then he said he had had a headache every day. Here is a man who had severe dysentery and tertian fever. He had about six weeks of diarrhea and finally got well.

DISEASES PREVALENT IN THE ARMY AT THE BOSTON CITY HOSPITAL. BY HENRY JACKSON, M.D.

I was asked by the Secretary of our Society to say something on the soldier cases that I have seen this summer. I told him it was an immense piece of work to take hold of, and that the time was too short in which to write a paper giving a full account of the various phenomena; all I could do would be to give a short *résumé* of the general types which I had seen, and to say a few words on each of the types.

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[1] Read at a meeting of the Suffolk District Medical Society, October 19, 1898.

In the City Hospital there were, from the end of July to the first of October, somewhat over 400 cases admitted from the army. Of those, 126 were under my care. I have classified them roughly as follows: 65 cases of malaria, of whom 2 died; malaria and dysentery, 5 cases, of which 3 proved fatal; typhoid fever, 22 cases, of which 3 died; typhoid fever and malaria, 3 cases, one of which died; dysentery, 7 cases, none of which died; amebic dysentery, 1 case, which I will speak of later; he seems now on the fair road to recovery. I classed in a general way as debility 15 cases. In almost every one of those cases there had been a preceding history of fever, probably malarial: a more proper definition might be recovery from malaria. Two cases I classified as collapse: both of them got well; 2 cases were convalescents from yellow fever: they both recovered. In this preliminary list I have made I put down 3 cases as of doubtful diagnosis. The list perhaps ought to be much larger; some classified as malarial and typhoid fever ought to be thrown into the indefinite class. There was 1 case of simple jaundice.

Now to take up the 65 cases of malaria. The cases which I saw may be divided into four types: First, an irregular type of fever in which the temperature might on entrance be 101° or 102° F., in a day or two practically normal, in a day or two more rising to 101°, then normal, and again rising to a moderate point. I will pass about some of the charts. To refresh our minds I pass about on another sheet the ordinary tertian malaria we see about us. On that is also a chart of fatal typhoid fever from Chickamauga. In many of our cases of malaria the course of the fever was undoubtedly very much modified by quinine which had been given in Cuba in moderate doses and oftentimes in large doses in the ships on their return. Those on the *Bay State* were treated with large doses of quinine; those on the other transports received a certain amount of quinine. Then there was a remittent type of fever in which the fever ran along normal a few days, and then again passed through such a period of which I send around two charts. One is a very fair sample of remittent fever. It is not typical in that the first rise of temperature was not long continued though it was high on entrance, and we could not say what it was before he entered the hospital. The second part of the chart of his course in the hospital is perfectly typical of remittent fever. Then there was a type of fever of which I had a good many which I should call a sub-class of remittent fever, in which the course of the temperature was very long continued. These charts represent three weeks, and as you can see at a distance the temperature ran a course throughout that period, running at no time very high, averaging 101° to 103° F. A third type of malaria which we had was a type of what we might call intermittent fever, and yet there was not a single case in which we had the pure, absolute intermittent chart which we see in the Northern cases. I have no charts here to-night. The temperature would rise on one day, sink not absolutely to normal on the second day, as it does in the ordinary Northern type, that night be absolutely normal, to rise again the next day. The cases of this type, three in number, were very mild. They were amenable to treatment by quinine. After a single large dose of quinine the fever did not recur, which was very different from the other cases; the other cases had quinine during the whole course of the fever. The organisms found in these cases were apparently the tertian organisms; that is, it was not possible to differentiate them. In one case the diagnosis was made by the house-officer. He reported the tertian organism before he saw the course of the fever. Then comes the pernicious type. After we had had a good many cases of malaria I was talking with Dr. McCollom one day, and he said: "You must look out for the pernicious malaria. Before you know it some of these cases will develop a tremendously severe type of disease and die."

I had of what I call the pernicious type three cases; two died, one recovered. One of those who died was apparently in a fair way to recover, but he developed pneumonia. Whether that pneumonia was dependent upon the malarial organism or not I cannot say. The Southern writers claim that there is a pneumonia dependent upon the malarial organism in itself. I pass around two charts of this malignant type. The first man came in, as you will see by the chart, with a temperature of 98.6°, with a pulse of 90. In the course of the afternoon there was a tremendous rise of temperature to 105.8°, his pulse rose to 130, he was unconscious, his circulation was extremely sluggish, he was bluish and continued in an unconscious condition for the better part of two days. On the third day he was partially conscious, noticed the physicians, appeared to recognize his brother and we felt very hopeful about the case. Then he became very much worse. I found at each lower axillary region bronchial respiration and râles. I did not examine the backs. The autopsy showed he had a double lobar pneumonia, the process extending throughout both lower lobes. The second one came in unconscious and made a fairly rapid recovery, the temperature dropping in the course of three days to 100° and then to normal. Judging from this single case, which was the only one that recovered of the three, having passed through these severe paroxysms, they were apparently safer from subsequent fever than those of the remittent type.

Now the organisms which were found in these cases were the very fine hyaline intracorpuscular organisms and crescentic organisms with black dots in the centre. With the crescentic organisms go the oval organisms, sausage-shaped organisms. When the crescents were found at all they were found in great numbers. I have seen many fields of the microscope in which there were two crescents, and on moving the slide about with a little care you would find cases where there were three of these crescentic or oval organisms in a single field of the microscope. Associated with these hyaline and crescentic forms there were, in many of the cases, a few intracorpuscular, pigmented organisms. The pigmented organisms when present were different from the tertian pigmented organisms, in that the granules were larger; they were more motile, and the organism itself was smaller. In a very large number of the cases no organisms were found. I judge that the cause of that was that in so many of these cases quinine had been given; in many in large doses, and in most of them in some dose. I am more sure of that position in that in those cases that stayed a long time in the hospital organisms were often found late in the disease which had not been found previously, — the patients who stayed two or three weeks. Also, two cases went out of my wards and returned after two or three weeks. During the first time that they were in the hospital no organisms were found, and on their return organisms were found in abundance.

Treatment of the Cases. — I treated all of these cases by large doses of quinine. I used what I should call a mixed treatment, that is, combining the so-called Dock method, of giving a single large dose of quinine when the temperature has fallen a degree, with the method of giving the continued doses of quinine. All of these cases received twenty grains of quinine when the temperature had fallen one degree after a rise in temperature. The temperature was taken every two hours. When it had dropped one degree twenty grains of quinine were given, and given always in capsule. I gave it in capsule because I was afraid to give it in solution on account of the danger of causing vomiting simply from the taste of the quinine, and I did not feel confidence in giving quinine in pills. To give twenty grains you have to give four capsules, it being so light. In addition to this single large dose which I tried, I think in every case (and in some cases I succeeded in stopping the temperature, though not in many) I gave fifteen grains of quinine during the day. Some of my colleagues gave that in one dose. I usually gave it in divided doses during the day. That was during the course of the fever. To every case that came into the hospital I gave two grains of quinine three times a day, on the theory of the Southern physicians, that you cannot cure anything in Florida, as I have heard them say, without quinine. Then, as to the treatment of these severe cases with collapse, the pernicious types. One case died, I am sorry to say, before I had known of the efficacy of treating pernicious malaria by subcutaneous injections of quinine. I found out afterwards that the Southerners say, that is the only way you can save them. I gave the case that recovered quinine subcutaneously. I gave it in large doses subcutaneously to the man who apparently was on the high road to recovery from his malaria, though he subsequently died from pneumonia. Quinine is very difficult, I found, to give subcutaneously. I had to give many large injections subcutaneously. I think about five grains to the drachm is the best I could do, adding tartaric acid to the bisulphate of quinine. I found that I could not dissolve the hydrochlorate of quinine in anything like the proportion of water which Thayer claimed. I was in Baltimore lately and hoped to ask him about it, but he was not there. He says the hydrochlorate of quinine is soluble in equal parts of water. I went to several apothecaries, who told me that was impossible. The form I used was five grains of bisulphate of quinine and five grains of tartaric acid in the drachm of water.

As to the course in these cases, it varied extremely. Some ran a very mild course, represented in two charts I passed about, perfectly well, clamoring to eat and get out, the temperature every now and then rising to 101° or 102° F. Some of the cases reacted very quickly to quinine after a single large dose, having no further fever. But of those there were only a few — some half-dozen out of the 65. The average number of cases ran a course of several days, so far as I could see, the course of the disease unmodified by the quinine given.

In malaria and dysentery, of which there were five cases, the diagnosis was made by the finding of plasmodia or by post-mortem examination. One of these cases was a typical case of remittent fever, with tremendously severe dysentery. The others represented the atypical forms of malaria, the temperature rising only occasionally. The treatment of dysentery was as follows: I gave them all irrigation, boric acid or soda or saline, bearing in mind the danger of rupture of the gut. In giving the injections the fluid was not forced into the bowel. In none of them did I raise the hips high, as you would raise them in giving an injection in a perfectly healthy gut, or in a gut that was not ulcerated. Morphine was necessary in most of the cases to relieve pain. So far as I saw, it had no effect whatever in controlling the movements; they would go on uninterruptedly, though morphine was given in as large doses as we cared to give it — I mean morphine and the various opium compounds. I had in several cases a good deal of success in treating them with a combination of mild saline with very small doses of morphine. I did not in most of these cases use a treatment. I suppose most of us here wash out the bowels thoroughly with large doses of salines, and attempt to keep the bowels quiet by morphine. I did not use that, as most of the cases were so sick that I felt any such method as that would wash the patient away as well as the bowel. In four of the cases I used the entirely empirical method of treating dysentery, which is employed so much in India and in China, namely, to treat by morphine and ipecac. I was very much surprised to find that I got fairly good results in two cases, and that in one case there were very good results; the character of the stools changed within forty-eight hours. Whether it was due to the treatment or not I do not even pretend to say, but it did no harm. I gave it to two extremely sick men — men as sick, I felt, as men could be. They were not nauseated; they were not depressed by the ipecac. I gave one-sixth grain of morphine, and half an hour later twenty grains of powdered ipecac in capsule. It apparently caused no nausea in any of the cases; there was no vomiting excited by the ipecac. In one case there was vomiting, but he had vomited for several days before that treatment was instituted.

Of the diet, all I can say is that I stuck as nearly as I could to albuminous diet, avoiding milk in large quantities. When I used milk it was peptonized.

There was one case of amebic dysentery. This case was of great interest to me, in that it was, so far as I could tell, the only case that I had seen shortly after the process had arisen. Such cases of amebic dysentery as I have seen have been cases that have, through months and sometimes through years, run the course of so-called chronic diarrhea, the amebæ being found late in the course of the disease. This was a perfectly healthy man, went to Cuba the first of July, taken sick some time the latter part of July, and so came under observation within a month after the process had started. There was no fever in this case; the leucocytes were normal. I gave him the treatment of amebic dysentery usually employed — quinine by rectum, and also quinine by mouth. He improved rapidly and went out yesterday apparently well. I feel there can be no doubt as to the amebæ being present. The diagnosis was confirmed by several observers, fortunately by Dr. Councilman, who, of course, is the most able to make the diagnosis. Also, the course of the disease was entirely different from ordinary dysentery. He would pass little bits of blood and mucus without any pain, without tenesmus.

Herpes was common in dysentery — herpes facialis.

In one patient I had a tremendous case of herpes zoster.

In general, in all these cases of malaria, and malaria and dysentery, one great factor was very prominent, — they had no chills. The temperature would shoot up to 104° or 105° F. without chill, without rigor. I think there were only two or three cases in which there was rigor, and when present it was not severe. There was not a single case where the bed would shake as it does in the ordinary case of stay-at-home malaria. Many of the cases were very anemic, several were severely anemic. In one there was intense anemia, so marked that there was apparently as a result of that a general edema. The urine was at no time abnormal. As soon as he recovered his color the edema disappeared. The average pulse in the cases of malaria was not very high, running 80 to 90 and to 100. Only in the pernicious cases was it very high; in those it ran to 130, 140 and 150.

Of the typhoid cases, several of them were convalescent when they appeared. The diagnosis was practically made by the Widal test, and, as a rule, all of the cases were mild; the fever was not high. One of the fatal cases arose late in the course, after the men returned from Cuba, and it was complicated by delirium tremens, which was apparently the immediate cause of death. The cases of typhoid which came from Cuba were not as severe as those which came from Chickamauga.

Of typhoid malaria there were three cases. In two of the cases, during convalescence, there was a sharp rise of temperature, and the organisms were found. In the other case the disease was not apparently modified by the malaria; the organisms were found, the Widal was positive, and the general condition of the patient was that of typhoid and not of malaria.

Of the cases that I have classified as debility, many of them were probably convalescent from malaria; many of them were markedly anemic. There were two cases only that were complicated with a tenderness which would suggest the presence of neuritis. Dr. Bullard was much interested in that process at the time, trying to find out whether the severe exposure these men had been through could start up a neuritis; it apparently had not.

Two cases I classified as collapse; and collapse they were without any definite etiology. The first case, my house-officer rightly said, was a case of cholera infantum. The man came in unconscious, vomiting everything, having movements constantly; he was cold, the temperature not quite 97° when he came in, and his pulse could not be felt. I arrived within an hour, and at that time there was just a flutter to be felt. That man recovered. He was not extremely anemic; he was not extremely emaciated; it seemed to be a sudden breaking-down. The second one was not so severe. I do not believe the first case I have spoken of would have stood a ghost of a chance of living if he had not been met at the station by Dr. Stedman, who gave him powerful stimulants subcutaneously, and he reached the hospital just alive. Stimulants were continued there; no food was given, and when I did give him food I treated him as you would a laparotomy — with half-teaspoonful doses of boiled water, as hot as he could take it. The other case was unconscious, but the pulse not very rapid.

All I wish to say about the two cases of yellow fever is to draw attention to what Dr. McCollom told me about, namely, that after convalescence from yellow fever you would find a yellow discoloration of the nails. It is rather uncanny to see about half of the nail yellow, and the pink at the lower part of the nail appearing, which had grown out since the convalescence. I do not know whether that is an original observation, but original or not it does not appear in the works on yellow fever. Both the cases showed it to a marked degree. Dr. McCollom said that that had enabled him many a time to make the diagnosis.

Then the mild cases of questionable etiology — of course there is nothing to say about these. The case of jaundice was apparently simple, mild catarrhal jaundice, and had nothing whatever to do with the fever.

Two or three points I wish to speak of in general. In the first place, as this is the first meeting of the Society, I think I may be allowed to speak of the general *morale* of these men. It is the most impressive thing I have seen in my life. The character of the men impressed one deeply. Their character was borne out by what I can tell you, that not only did they make no complaint of the treatment which they had had in the war, or in the hospitals or transport ships, but, what to me was still more remarkable, there was not a single case in which those soldiers boasted to me of what they had done, or even offered the suggestion that they had given their life for the country, and that therefore everything ought to be theirs. I think that is more remarkable than that they did not complain. That from a social point of view. From the medical point of view, the saddest, and yet the most encouraging, point about these soldiers was their vitality, the strength of their pulse — the most encouraging thing, because it enabled these men to pull through diseases that would seem impossible that men could live through, and the sad sight that men with such constitutions as that should be so reduced. Man after man came into my wards that were mere skeletons, men emaciated to a degree that I had not seen, except in the most advanced cases of lingering cancer, where the cancer may be situated in such region that it would not interfere immediately with life, and allow the patient to live as long as there was any vitality left. That is what a good many of these cases lived through; they lived as long as the heart could go. I was surprised to find the good condition of their skin. No cases came in with evidences of abrasions, or with evidences of lesions from vermin.

The diet was a very important factor in these cases, as it is difficult to feed those who have gone a long time without food in any walk of life, and we had the same factor to deal with in these soldiers. Their stomachs and intestines were not in a condition to stand large quantities of food, and we were obliged to feed them with the greatest care.

EXPERIENCES AT THE LONG ISLAND HOSPITAL.

BY J. J. MINOT, M.D.

I had at the Long Island Hospital about seventy cases all told, none of them as severe as some of the cases Dr. Jackson and Dr. Vickery have spoken of. I have almost nothing to say after these gentlemen have spoken, as they have covered the ground entirely. I saw all the different types that Dr. Jackson has spoken of except that I did not have any of the pernicious ones and none of my cases died. They were all regular soldiers with the exception of a few recent admissions from the Ninth Regiment discharged from other hospitals and who had had a subsequent attack of malaria. They were all in pretty good condition, and have all done pretty well. There were about ten cases of typhoid fever. The interesting part was, that in those ten cases there were no plasmodia found until after they got through with what appeared to be the typhoid process, and had had a normal temperature a week or ten days, when several had what appeared to be a malarial process, and in some of these the plasmodia were then found. The chill in some was very distinct, and in one or two very severe; the severest were in men who had their first chill while in this hospital. A great many of them vomited in place of the chill; many had headaches, and many had no symptoms at all, that they or we knew, except the temperature. One of the interesting things was the length of the rise and fall of the fever. That varied in different cases; in some cases about twelve hours, and in some six, after it had started to rise until it returned to normal. Sometimes these rises would occur every day, for a number of days, sometimes every other day, and again irregularly. Many of my cases have stayed a good while, and some have had constant rises, some had no rise at all until they had been in hospital two or three weeks, but were very anemic and in wretched general condition on admission. They all got quinine in varying doses, and by all the methods usually employed. I could not see it had any immediate effect on them in any way, whether given in single large dose or a large dose combined with doses of five or more grains three times a day, or given in smaller doses. It seemed to me they had their temperature go up about when they got ready, and I could not have any effect on it at all, except of course as time went on the rises in temperature became less and less frequent and I suppose will eventually disappear. Some of the cases were interesting to me, in that they showed the Widal reaction, but did not have symptoms of typhoid fever. Where they got their Widal reaction from I don't know. One admitted he had typhoid fever three years ago, but that was the only one. I should think I had five or six of that kind, but they were unable to give a previous history of themselves; some had been sick a day or two, some had never been sick until they got on board the steamer coming to Boston, when they began to vomit, — quite a common history. One of the things that has impressed me very much was that we were able to distinguish inside of twenty-four hours, practically in a very large number of these cases, whether they were typhoids or malaria, malaria of the remittent type, where the temperature runs a number of days. One case in particular had no plasmodia nor Widal reaction, though repeatedly examined, but he had a temperature almost exactly like one of Dr. Jackson's remittent cases and like one of the cases at the Carney Hospital, which is now under my charge, where both Widal reaction and plasmodia were found.

THE CARE OF THE SOLDIERS AT THE CARNEY HOSPITAL. BY H. F. HEWES, M.D.

About one hundred and twenty of the soldiers who saw active service in the late war in Cuba were treated at the Carney Hospital. Of these eighty-eight came under my charge at some time in their illness. Of these eighty-eight cases seventy-three had malaria alone, none fatal; ten typhoid, none fatal; and eight dysentery, none fatal; seven of the typhoids had malaria also, and six who had the dysentery had malaria also; three of the cases had no disease which could be diagnosed at the time of their entrance. Of the eighty cases of malaria all had malarial organisms in the blood. I saw the blood of each case admitted at least once myself. If the finding was negative, the house-officer looked at the blood twelve hours afterwards; if this was negative, the blood was examined every third or fourth day as long as the case remained in the hospital. But eight cases remained in which the malarial organism was not found at some time. Of those, three were typhoid and two dysentery. The organism was found in the majority of cases upon the first examination, but in several it was found only on the fourth or fifth examination. Of the eighty cases of malaria sixty belonged to the type known as estivo-autumnal; six were pure tertian and six showed a mixed infection of the estivo-autumnal and tertian organisms. The differentiation between these forms of malaria was made entirely on the blood finding. A great variety of forms of parasite was found in the blood in looking over all the cases. In the thorough examination of the blood of as many of the eighty cases as possible, both in fresh and stained specimens, the following forms of organisms were found: In the first place, by far the most common form of organism was a small form known as the hyaline form, an intracorpuscular, slightly motile, non-pigmented form, as a rule, eccentric and perhaps one-fifth or less of the size of the corpuscle in which it lay. This was either in the form of a sphere or had to the eye the form of a ring, frequently of a signet ring. Perhaps the next most common form was an irregular form, often slightly pigmented, in some cases looking very much like a cross; in others like a ring with one side broader than the other. Then we found in a great many cases clearly pigmented forms. These were either very sluggishly motile, with a few pigment granules of light color, typical of the estivo-autumnal cases, or perhaps of the same size or larger, but much more pigmented and actively motile; very different looking organism, although the size might be the same — the tertian form. Then there were found also in a few cases — the tertian cases — a form of this kind filling the corpuscle, full of pigment, very active; and also in some cases the segmented or sporulating form with a good many segments, and in a few cases even the flagillate form. In a considerable number of cases, in addition to these forms, there were found a crescent-shaped organism, sometimes taking an ovoid shape, intra- or extra-corpuscular, pigmented, the pigment as a rule bunched, but not always. In some cases a large extra-corpuscular form, fully as large as a red corpuscle, with pigment in it, very sluggish; in some cases forms which had the pigment all collected in the centre in a block. That represents, practically, the variety of organisms found in fresh and stained specimens.

Now as I put these down on the board they represent the cycles of the two types of malaria I have been describing. This upper line will represent fairly well the regular cycle of the estivo-autumnal organism seen in the circulating blood; the rest of the process takes place in the internal circulation. This line down here represents the cycle of the tertian organism very fairly, except that in addition we did find in one or two of the tertian cases a form like this, which is the very earliest form of the tertian, a kind of thin spider form with thread-like processes. Now, as you see, the hyaline and ring forms are common to both. The hyaline form of the estivo-autumnal form is slightly smaller than of the tertian, but unless you measure them in each case you cannot tell the difference. These irregular forms are common to both. The pigmented form, one-third to one-half the size of corpuscle, is common to both, but has such different characteristics that the differentiation can be made. When you get beyond this point in the tertian you have forms which never can be confused with the estivo-autumnal, the full-sized pigmented and the sporulating forms. The sporulating forms occur in the estivo-autumnal, but I have never seen them in the peripheral blood. The crescentic form is the form which occurs out of the regular cycle. It may appear spontaneously after the other forms have been present. Several observers claim that they had seen the pigment in the crescent, not collected as in this drawing, but moving, and had seen the crescent change shape, become round and sporulate. This view is not held by most observers of American estivo-autumnal malaria, and Koch has recently published the result of his investigations on tropical African malaria, in which he says definitely that the crescent form is innocuous; may last in the blood an indefinite time, but cannot give rise to paroxysms or to auto-infection. He finds it unaccompanied by other forms.

MacCallum considers it to have the property of reproduction by a sexual process, distinct from sporulation. His investigations do not suggest that the crescent is innocuous.

To differentiate the estivo-autumnal and tertian types of infection we work upon the following lines:

If pigmented forms one-half to full size of the corpuscle, with fine pigment granules, numerous and very active, are present, or if sporulating forms are present, the infection is tertian. If pigmented forms less than one-half size of corpuscle, with few pigment granules with slight activity, be present, the type is estivo-autumnal. If hyaline or small ring forms only are present the development must be watched for diagnosis. If the development in the peripheral blood ends with the non-pigmented large ring, or the sluggish, slightly pigmented form less than one-half the size of the corpuscle, the type is estivo-autumnal. If the full-sized or active pigmented forms develop it is the tertian. If crescents are present the type is estivo-autumnal.

Both varieties of organism may be present together when we have mixed infection.

The afebrile period is the time to take the blood for diagnosis of estivo-autumnal. Within a few hours of the paroxysm is the time to diagnosticate tertian.

The characteristics of the blood in the two diseases differ in some other ways than in the organisms. The estivo-autumnal blood, as a rule, showed much deeper anemia. I have never seen such deep anemia in the blood of malaria about here as in many of these cases. The loss of hemoglobin in the corpuscles was particularly marked, and blasts were present in many cases. The tertian blood showed the large red corpuscles, larger than normal, characteristic of that malaria which did not occur in the estivo-autumnal. The estivo-autumnal blood showed a large amount of pigment in the leucocytes, which is characteristic of this form of malaria against the other forms. The blood seen in periods of quiescence, between weekly paroxysms, showed often only the small ring form.

I should say, that in the examination of fifteen cases the rings were the only form found on first examination, and it was impossible to make the diagnosis at once. In later examinations other forms were found in eight of the cases, but in eight cases we were still in doubt. In the apyrexia, after a paroxysm, or during the days of fever, the larger pigmented round forms and rings were found in these cases, showing them estival. The temperature charts suggested that these eight belonged to the estivo-autumnal type. I have some of the temperature charts of the estival cases, which illustrate the different temperatures which you get with practically the same blood finding. All these cases had the simple ring form at the first finding, and two later developed pigmented forms, two did not. You see how the temperature differed. These were under quinine throughout. One received quinine for two doses, and then for some reason the quinine was omitted, and he ran for two weeks without quinine. For that reason I suppose his chart is more like the regular form of fever. The temperature stayed up continuously in some, in others it would be up for two to four days, then normal, or 99° to 100° for ten days, then up again.

A comparison of the temperature charts emphasizes a very important point, namely, that the method of diagnosis by the blood examination is the only reliable method of differential diagnosis between the two types of malaria, included in these cases. Here are estival charts resembling the ordinary tertian. Here are tertian with quotidian charts, with remittent charts, and one with constant pyrexia.

In regard to the other symptoms I will say nothing, save to mention that one case had a malarial paroxysm which was associated with an acute jaundice. The man, who had been of perfectly normal color before the attack came on, became jaundiced inside of an hour — it seemed so — the liver was intensely painful to pressure, and the blood was full of organisms at the time, although previously nothing but crescents had been found. The man was dosed with quinine, and the whole thing subsided in twenty-four hours. Another case came in with acute nephritis, marked general anasarca and edema of legs, the urine containing one-half per cent. of albumin and typical sediment of acute nephritis. The malarial organism was found in his blood, and he was dosed with quinine, five grains every hour until he had taken twenty-five, and then five grains every four hours continuously. At the end of five days the amount of albumin in the urine had diminished to a trace, and the edema was disappearing. The quinine was then omitted by mistake, and at the end of a week he had another malarial paroxysm, and the urine contained nearly one-half per cent. of albumin again. I call this nephritis, because the man had edema associated, which is uncommon if not unknown in hyperemia The duration of the condition does not suggest acute nephritis, but we have had little experience with malarial nephritis here.

The result of treatment was much the same as Dr. Minot has mentioned. I should say, however, the average case was benefited distinctly by quinine, but I should not attempt to claim I had cured anybody, except the tertian cases, and not all of these. I had cases go three weeks without paroxysms, and develop paroxysms on removal of quinine. I gave to a certain set of men five grains every hour, until they had taken thirty-five grains on the falling temperature, when the large estival forms were in the blood, and then five grains every four hours continuously for two weeks, and in some of these cases paroxysms developed, and during cinchonism organisms were found active in the blood. A number of other cases never had any temperature after the taking of the quinine. Chart No. III is one of the cases where the paroxysms came on after long omission of quinine. Where these paroxysms came on they seemed to follow exertion or exposure. This man walked a mile and came back, and had a paroxysm with the organisms very thick in the blood. This one sat by an open window. The absence of relapse seemed proportionate to the improvement in general condition. In closing, I will mention that in one case of typhoid (Widal positive) I found pigmented malarial organisms during the active typhoid — a finding which is rare, I believe.

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ANIMAL *VS.* VEGETABLE FERMENTS.[1]

BY A. E. AUSTIN, A.M., M.D.

It has long been known that vegetables and plants have digestive processes, almost, if not quite, analogous to those of animals; the sprouting grain, at certain temperatures, develops a ferment, the diastase, whose enzymogen doubtless exists latent in the seed until such time as conditions of temperature and moisture develop the fully active ferment from its parent or forerunner. Nor does the analogy end here; the sprouting plant can no more use the undigested starch than the animal body can, and hence the starch which the seed contains must be converted into maltose, in order to feed the young plant until it can obtain its nourishment from the earth and air in which it is placed.

The intermediate products between starch and maltose are also undoubtedly the same as those which exist in the digestion of starch by animal ferments, ptyalin and amylopsin, that is, soluble starch, erythro dextrin, achroodextrin and true dextrin, as well as isomaltose; (1) Papayotin, from the juice of the Carica Papaya, has likewise a strong digestive action upon albumins, converting them to albumose-peptone, but differing from diastase in that it seems to play a constant part in the digestion of the plant, (2) and thus differs from the action of the diastase which seems to simply meet an emergency and to be discontinued as soon as the plant has reached the point where it can provide for itself, much like those birds which instinctively digest the food for their young and feed them with the regurgitated contents of their own crops until such a time as the young can eat and digest the food in its natural state.

Nor do these vegetable ferments stop with the conversion of sugar, but some of them have the power of splitting up the glucosides into dextrose and other components. Emulsin, for instance, found in bitter almonds, has the power of splitting up, with the aid of water, the amygdalin, likewise contained in the kernels, into benzaldehyde, hydrocyanic acid and dextrose. (3) A fat splitting ferment has also been found in the castor-oil bean, in linseed and in corn. Nor do many of the plants stop with a single ferment but possess at least two and perhaps more. The juice of the fig-tree, pineapple and papaya, for instance, not only convert albumin into albumoses and peptones, but also have the power of coagulating milk in exactly the same manner as rennet from the calf's stomach, without change of reaction.

As a general thing, these ferments have been regarded by plant physiologists as having no importance, and as playing no part in the economy of the plant. This is clearly disproved by the fact that albumose-like substances have been found in the juice of papaya (2) and in that of the pineapple (2). It appears, therefore, very probable that plants have digestion exactly analogous to that of animals though the intermediate products may differ.

Becoming interested in this subject, it occurred to me that it would be of interest to compare the intermediate and final products as well as the relative strength of both kinds of ferments, and by the kindness of Messrs. Parke, Davis & Co. I was supplied with sufficient taka-diastase to carry on my experiments.

This substance is an almost white powder, and is claimed by the manufacturers to be made from a Japanese seaweed, which apparently has this power of digesting its amylaceous food like an animal.

At first my efforts were directed to determining its strength as a starch-converting medium as compared with pancreatin and saliva. In each experiment one gramme of starch was made into a clyster with 100 c. c. of water, stirred up cold, and heated to boiling while stirring. It was then allowed to cool and to one was added one-tenth gramme pancreatin, to another one-tenth gramme taka-diastase, and to the third one c. c. saliva. The flasks were then stoppered and allowed to remain in the thermostat at 40° C. for twenty-two hours. They were then taken out and the contents filtered, by which any undigested starch was removed, washed and the previous volume of 100 c. c. re-established. The sugar was determined by Fehling's test, and the sugar calculated as maltose, that is, 10 c. c. Fehling's is equivalent to .0778 grammes maltose, instead of .050 grammes as in dextrose, on account of the weaker reducing power of maltose. Then the amount of starch was calculated from the maltose found, an easy process, if we consider two of the simple molecules of starch, $C_6H_{10}O_5$, as uniting with one molecule of water to form one molecule of maltose $C_{12}H_{22}O_{11}$, from which the percentage of starch from a certain amount of maltose would be 94.736 per cent.

The result of this tabulated is as follows:

First experiment, — Conditions, etc.			Presence of starch was determined by iodo-potass. iodide solution, when no blue was found starch was reported as absent.			
Ferment.	Starch converted grms.	Per cent. of total.	Starch.	Starch converted.	Per cent.	Starch.
Taka-diastase	.613	61.3	No	.9931	99.31	No
Pancreatin	.267	26.7	Yes	trace	..	Yes
Saliva	.199	19.9	Yes	.1553	15.53	Yes

For some reason the pancreatin in the second experiment failed to act with any energy.

It was next deemed important to increase the burden placed upon the ferment by increasing the amount of starch and to vary the period of digestion so that the amounts of starch were increased in the first to two grammes, in the second three grammes, and in the third four grammes. The results are tabulated as follows:

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[1] From the Chemical Laboratory of Tufts Medical School.

Ferment.	Period of digestion.	Amt. of starch in grammes.	Starch present.	Amt. starch converted in grammes.	Per cent.
Taka-diastase	43 hrs.	2	No	1.495	74.92
Saliva	" "	"	Yes	.3013	15.05
Pancreatin	" "	"	"	.140	7
Taka-diastase	21 hrs.	3	No	2.497	83.2
Saliva	" "	"	"	1.385	46.1
Pancreatin	" "	"	"	.6483	21.6
Taka-diastase	19 hrs.	4	"	2.29	57.2
Saliva	" "	"	Yes	.204	5.1
Pancreatin	" "	"	No	1.32	33

As one can readily see from the table, a prolonged digestion does not seem to increase the product of digestion with taka-diastase; in fact, there appears to be some loss from fermentation by which the sugars are broken up. The fluids took on a beery odor and fungi were seen in great profusion under the microscope. These fungi did not appear like the ordinary yeast fungi, but were smaller and less oval in form.

In order to be used therapeutically, taka-diastase must of course pass the stomach to reach the intestine, where conditions are most favorable for its action, and hence two points of interest present themselves for solution: Will it digest in an acid medium, and will its activity be hindered by the acid, even if afterwards rendered alkaline? It is generally recognized that the diastatic action of both pancreatin and saliva ceases in a medium containing a certain percentage of acid, but in order to continue the comparison three portions, consisting each of five grammes starch and 200 c. c. water, were prepared in the same way and after fully cooled, hydrochloric acid was added until the strength of the solution was equal to that of gastric juice, that is, about 2.5 parts per thousand.

Then pancreatin, saliva and taka-diastase were added to each in the same amount as before. They were digested for twenty hours, alkalinized and tested for maltose. Starch was present in all after this period, and only the preparation containing taka-diastase showed the presence of sugar, and that only in traces too small for estimation.

Again the same experiment was performed, but after twenty-three hours' digestion in the acid solution the latter was neutralized and allowed to digest twenty-four hours longer. Starch was found in all, but in each there was a trace of maltose, larger in the solution containing the taka-diastase, but still too small for determination by the method so far used.

This process was again repeated with two grammes of starch in 200 c. c. water, digested twenty-three hours in the acid solution, neutralized, and again digested three hours in an alkaline medium, and this time with better success. True, starch was still present in all, but while there was a trace of sugar in the pancreatin and saliva digestion, the taka-diastase showed 6.8 per cent. of the starch converted to maltose.

Thinking that perhaps with a shorter stay in the acid medium the ferment might make a better showing, the next solutions prepared in the same way were allowed to remain two hours in the acid medium at 37° C., were then neutralized, and digested two hours in the slightly alkaline solution, with decidedly better results, as shown in the following tables:

	Starch present.	Starch converted.	Per cent.
Taka-diastase . . .	Yes	.149 grms.	7.4
Saliva	"	.068 "	3.4
Pancreatin . . .	"	trace	0

These results would seem to prove two facts: first, that the action of taka-diastase is not wholly annulled in an acid medium, at least of the strength of gastric juice, and second, that all of the ferments are not destroyed by an acidity of this extent, and that upon being neutralized their action continues, though with varied energy and effectiveness.

This, it must be recognized, is contrary to the views of Chittenden and Griswold, who claim that ptyalin, at least, is destroyed by the action of the acid gastric juice and not merely rendered negative during its stay in the stomach, but in these experiments the evidence against their views appears so strong that we cannot gainsay it. As can readily be seen from comparison of these results with the previous ones, the shorter the stay in the acid medium, in this case two hours, as opposed to twenty-three hours, the less the action of both the saliva and taka-diastase is impaired, while little or no difference is seen in the pancreatin.

The results of these experiments would negative very strongly also the use of pancreatin as a digestant therapeutically unless it were enclosed in some substance like keratin, which would prevent the action of hydrochloric acid upon it while in the stomach.

The temperature at which taka-diastase is most effective, 40° C., seems to place it with the animal ferments rather than with the vegetable, of which diastase is the best known, whose most effective working temperature is from 53° to 63° C., as is well known. After the starch is converted into maltose the process is not complete; this is not the product suitable for absorption. The maltose must first be split up into dextrose (4), which is done ordinarily by the invertin of saliva and pancreatin, present only in slight amount, and more particularly by that of the succus-entericus. It appeared, therefore, worth while to see in what form these respective ferments delivered the sugar, whether maltose or dextrose. It is very generally stated that saliva (5) pancreatin and malt diastase convert starch only into maltose with a slight admixture of dextrose, but the products of taka-diastase digestion are, as far as can be learned, an unknown quantity. My first efforts were devoted to removing the starch undigested from three solutions prepared in the same way, and digested three hours, clearing the solutions by subacetate of lead and reading the amount of sugar with the polariscope.

After this, 100 c. c. of the solution were cooked twenty minutes with 10 c. c. hydrochloric acid, the previous volume of 100 c. c. re-established by adding water, and the reading of the polariscope again determined. Were the original solution maltose then the second reading will be less than a half of the first reading, since the maltose will have been converted by cooking with acid to dextrose, which, as is well known, has a much less rotatory power than maltose.

This was done and the results are as follows:

	Before heated with HCl.	After heated with HCl.
Taka-diastase . . .	2.3%	2.1%
Saliva	2.4 "	1 "
Pancreatin	2.6 "	1.2 "

This would seem to show that the product of taka-diastase digestion is dextrose, while that of pancreatin and saliva is maltose, as is generally maintained, but this process is not free from error, since the amydulin and various dextrines may also play their part in the rotatory power of the original solution and may also be converted to dextrose by treating with hydrochloric acid. This, it was found, could be avoided by precipitating the intermediate product, with the exception of maltose, by alcohol, while the maltose and dextrose remained in solution in the alcohol. To this end, therefore, three starch solutions were prepared, each containing 25 grammes starch to a litre of water, to which were added respectively 25 c. c. saliva, 2 grammes pancreatin and 2 grammes taka-diastase. These were all allowed to digest sixty-eight hours at 40°, at the end of which period the digestion with saliva and pancreatin had starch remaining undigested, while that with taka-diastase had none. These digestions were taken out, warmed, filtered, evaporated to 100 c. c., filtered again and then evaporated to 25 c. c. Each of these was then poured, while hot, into 100 c. c. of hot alcohol in a flask, and allowed to stand twenty-four hours. All insoluble in alcohol was then found to be fully settled to the bottom of the flask, and the supernatant fluid poured off contained the soluble portion, containing either maltose, or dextrose, or both; 30 c. c. of this solution were diluted to 150 c. c. with water, and of this 50 c. c. were reserved for the determination of rotation by the polariscope, while the other 100 c. c. were cooked with 10 c. c. hydrochloric acid for twenty minutes, the volume of 100 c. c. re-established, after cooling by addition of water, and the rotation again determined.

The results were as follows:

	Before cooking with acid. Reading of polariscope.	After cooking ditto.
Saliva	4%	2%
Pancreatin	3.9%	3 "
Taka-diastase	3.8 "	3.4 "

This would tend to show that the results of the salivary digestion were chiefly maltose, while those of the pancreatin and taka-diastase were dextrose, with some admixtures of maltose. It shows, also, that taka-diastase converts much more starch to the final stage of dextrose than does pancreatin.

In order to verify the last result another digestion was prepared in the same way with the taka-diastase alone, and the same process of isolation of the dextrine closely followed.

This time the solution showed before cooking with acid a rotation equivalent to 5.4 per cent. dextrose, after cooking, 5 per cent. The identification with dextrose was made still surer by cooking some of the original solution with phenyl-hydrazin and sodium acetate, and only the crystals of glucosazon could be found, none whatever of maltosazon.

The microscopic differences of the crystals would seem to be sufficient to differentiate between them, though, of course, it must be acknowledged that determination of the melting-point would have aided greatly. These experiments would seem to give taka-diastase a power not possessed by malt, that of splitting up maltose into dextrose; in other words, it possesses a true invertin, an enzyme, possessed, it is true, by saliva and pancreatin, but only to a limited extent.

In summing up the results of this work some facts seem to be fairly well established:

(1) Taka-diastase possesses a greater power of converting starches, in proportion to its weight, than does saliva or pancreatin, though perhaps the test was not fair to saliva, as the amount, one c. c., was arbitrarily taken as an equivalent to one-tenth gramme pancreatin and taka-diastase; since, however, only 5½ parts per thousand of saliva are solid, 5.5 milligrammes are compared with 100 milligrammes. All of these digestants are practically nullified in an acidity equivalent to that of gastric juice, so that practically no digestion can take place in the stomach from any of these digestants.

(2) These digestants are not destroyed by the acidity of the gastric juice and there is no practical reason why their activity should not go on after they have passed into the intestines and alkalinity is re-established.

Taka-diastase apparently carries the process of amylaceous digestion a step farther than the other two, forming dextrose instead of maltose. In how far this is of value we cannot say until we know more about the condition attending the secretion of succus-entericus, which contains the major part of the invertin, and whether it is ever absent.

REFERENCES.

1. Von Mering. Ueber den Einfluss, diastatischer Fermente, auf Stärke, Dextrin und Maltose. Zeitschrift für physiolog. Chemie, vol. v, 1881, p. 185.
2. S. Martin. Journal of Physiology, vol. v, 1884, p. 213; vol. vi, 1885, p. 336.
   R. A. Chittenden, Journal of Physiology, vol. xv, 1883, p. 249.
3. Wähler und Leibig Ueber die Bildung des Bittermandeloels. Poggendorff's Annal., vol. xli, 1837.
4. F. N. Pavey, Phys. of Carbohydrates.
5. Musculus und v. Mering. Zeitschrift f. physiolog. Chemie, vol. ii.

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OSSEOUS CYSTS OF THE MIDDLE TURBINATE WITH REPORT OF A CASE.

BY TIMOTHY J. REARDON, M.D., BOSTON.

After making a careful study of the literature of this subject, I have been able to find but forty cases; this number includes those mentioned by anatomists.

It was first mentioned by Santorini in his "Observationes Anatomicæ." In the living it was probably first observed by Dupuytren, who wrote of it under the title "Kyste a parois osseous pris pour un polyp fibro-celluleux." Chantreuil was the next to mention it. He, however, was an anatomist. He wrote of it under the title "Exostose celluleuse des fosses nasales." The specimen was sent to him by Professor Richel, who had removed it. Glasmacher wrote of it in 1884. A case is mentioned by Casabianca in his thesis under the title "Exostose spongieuse du vomer"; this case, Moure thinks, is similar to one of Bayer's, which the latter reported under the title "Cysts osseux de la cavite nasales."

Besides the foregoing cases, Butlin reports one of his own and one of which be knew, by Willet. Greville McDonald claims to have seen six cases; Schaffer, four cases; Schmiegelow, three cases; Steida and Knight, two cases each; McBride, Hajek, Wright, Joucheray, Frankel, Heymann and Rousseau, one case each.

Zuckerkandl states that he has observed it eight times in one hundred and seventy-two skulls. Steir has observed it in masculine skulls. Of the forty reported cases, eleven were seen by anatomists and the twenty-nine remaining by the clinicians above mentioned. This case makes the thirtieth observed by a clinician. How many of the cases observed clinically were genuine cannot be stated, but that there is reason for doubting the authenticity of some may be seen later under my remarks on the pathology and differential diagnosis of these cysts. It would, perhaps, be a liberal estimate to state that not more than twelve are genuine.

Etiology. — Most cases were observed in adults and this led some observers (Knight and Bayer) to state that the cysts occurred in adults only. This is incorrect, as they have been seen by Steida in girls, aged seventeen and nineteen respectively. Chantreuil mentions a case in a young girl, but gives no age. It was thought that they did not occur in men, it being a curious coincidence that all cases observed clinically occurred in women, as did the one under discussion; this, however, Steir says, is incorrect, as he has seen it in male skulls. As to their origin, there are several theories which I shall discuss under the pathology of these cysts.

Case I. Miss F. N., aged twenty-two, was first seen by me February 3, 1897. She has had headaches for the preceding two years; they dated back to a time when she had had several teeth removed. The headaches were mostly frontal, and, when severe, were accompanied by pain radiating to the left eye. She had complained for several years of a bad odor from her nose, of obstruction on the left side, of dropping in her throat and of loss of appetite.

Physical Examination. — Nose. Externally the nose was small and wide, in proportion to its height. The alæ showed but slight movement. The nares were wide. Internally the lower turbinate on the right was small, atrophied and covered with crusts. The middle turbinate was also slightly atrophied. The olfactory fissure was free. After the crusts were removed, no pus was observed coming from beneath the middle turbinate in the region of the hiatus semilunaris or from the olfactory fissure. Puncture of the antrum of Highmore was negative. Irrigation of the frontal sinus on this side was negative also. On the left side the apertura pyriformis was obstructed by a mass which hung directly down from its top. A probe, however, could be passed between it and the agger nasi. Further examination with the probe showed that the mass was covered by a very little cavernous tissue; externally toward the antrum it was quite closely approximated to the wall of the antrum, which was convex outward. Between the mass and the septum there was barely space for the passage of a probe. The mass almost touched the lower turbinate. A few small crusts were adherent to it. The lower turbinate was much atrophied. By anterior rhinoscopy nothing could be seen of the hiatus or the middle meatus posterior to the mass. No polypi were seen. The hard palate was very pale in comparison with the lips and cheeks. The pharynx was covered with a muco-purulent secretion; the larynx was normal.

On February 3, 1897, an operation was performed. After cocainizing with a 10-per-cent. solution, one-half of the mass was removed with a Krause's snare. It contained no pus or mucus and nothing of note was observed except that the lining was very pale. The specimen measured one and a half centimetres in length by one centimetre in width and one centimetre in depth. It was placed immediately in 95 per cent. alcohol. The nose was packed with gauze.

February 5, 1897. Headaches gone; removed gauze and repacked the nose.

February 7, 1897. Removed the remainder of the external wall of the cyst with Hartmann's conchotome. The external wall was not wholly removed at the time of the original operation.

February 20, 1897. Ozena unimproved.

March 5, 1897. Ozena still persists, but the patient had had no headaches since the operation.

Pathology. — Stained sections under the microscope showed the mucosa to be normal with its ciliary epithelium intact except in one or two places where slight ulcerations with surrounding cell infiltration were seen. The cavernous tissue, that is, the sinuses, was situated most thickly near the bone. The bone presented the changes observed by Steida, Lubarsch, Knight and others, namely: upon the bone layer was superimposed a layer of osteoid cells internal to which was thickened periosteum; internal to this lay a thin layer of detritus composed of crystals and fat. There was no lining mucous membrane internally. No bacteria were to be seen. In the periosteal layer one or two leucocytes were present, but not in sufficient numbers to suggest any inflammatory process.

The above description is similar to that given by Landgraf of his case. Steida's examination presents practically the same picture with three exceptions; in places he found small hollows in the osteoblastic layer which he considered resorptive places; he observed, too, a thick layer of connective tissue between the periosteum and the bone, and in his case mucous membrane lined the cells but mucous glands were not found. His results were confirmed by Lubarsch. McDonald in his cases failed to find mucous glands in the lining mucous membrane. To him, however, belongs the honor of bringing forward the osteophytic theory, which Knight, Steida and Lubarsch uphold. They claim with him that the thickened periosteum is due to hypertrophy of the middle turbinate body, and that by contraction of the turbinal tissue and diseased periosteum, incurvation is produced which continues until it again meets the body of the turbinate and thus forms a closed space. The enclosed turbinal tissue which accompanies this incurving atrophies and leaves a lining mucous membrane to the cyst thus formed. On the other hand, Fränkel, Heymann, Hajek and Zuckerkandl believe these cysts are congenital and owe their growth to suppuration. I agree with them that these cysts are congenital, but that they necessarily owe their growth to suppuration I deny; for the cases of Landgraf, Rousseau, Wright, and the present case were without a suspicion of pus on the inside. Their origin, I think, is due to one of two things:

(1) Ectasia of the ethmoid which, as the turbinate develops, becomes separated from it either completely, as in Landgraf's case and that of my own, or incompletely, as in cases of Steida, Joucheray and Bayer, in which cases the cysts had multiple compartments, some of which compartments were undoubtedly original ethmoidal cells. Zwillinger cautions operators not to mistake mucocele of the ethmoidal cells for a cyst and evidently intends the remark in reference to the so-called multiple form. The statement that the separation was complete in my case is based on the absence of a lining mucous membrane internally; it is thus

evident that the cyst had no communication with the surrounding cavities;

(2) An aberrated ethmoidal cell which developed in the turbinate. This is Heymann's theory.

The case under discussion resembles McDonald's in the presence of the periosteal thickening and the osteoblastic layer, but I ascribe these to a cause other than inflammatory. The layer of osteoblasts and the thickened periosteum seemed thickest in the centre, that is, on the interno-inferior surface where the curve was the sharpest; therefore, I looked upon the osteophytic changes as physiological and considered that they were produced to reinforce the bony layer at that point against the increasing pressure from the outside, caused by the growth which had filled the middle meatus. The wall of the cyst must have been subjected to an intermittent pressure at least, owing to the constant physiological changes in the volume of the turbinal tissue; furthermore, supposing that the cells were closed prematurely but still contained air, this air would be rarefied more or less by the growth of tissue enclosing it, to say nothing of the possible absorption of the components of the air, which would demand a reinforcement of the bone tissue. It would have been interesting to have ascertained the nature of the gaseous contents, but this was, of course, impracticable, as it was very small in quantity.

Symptomatology. — Usually the leading symptom is obstruction to the passage of air through the nose, yet that this may not be prominent is shown in this case, where the most prominent symptom was persistent headache, mostly frontal. Pain radiating to the eye may be complained of. According to McDonald and McBride, either frontal, ethmoidal or antral empyema may be present, for the cyst, by obstructing the hiatus semilunaris, may lead to it. Genuine atrophic rhinitis was present in my case and was apparently due in part to the presence of the cyst. Voice changes, denoted usually by nasal twang (Zwillinger), may also be present. Glasmacher's case was especially interesting on account of the nervous symptoms associated with it, such as insomnia, night cries, cautious gait and the sensation of having a swollen head; interesting too, on account of the curious objective symptoms it presented, such as swollen feet, together with asthma and orthopnea.

Of the physical signs in this case I have already spoken. McDonald observed a slight broadening of the root of the nose; this was not present in my case.

Differential Diagnosis. — The pathological condition simulating most closely the one under discussion is a dilated ethmoidal cell, situated behind the hiatus semilunaris and called "bulla ethmoidalis." This may become quite as large as a cyst of the turbinate and may be deceiving, because it often pushes the middle turbinate upward and conceals it from view. Zwillinger states that this dilated cell has been mistaken for a cyst of the turbinate.

Careful examination, however, will distinguish between them. Osseous cysts of the turbinate are situated nearer the top of the apertura pyriformis (agger nasi); in fact, they may seem to be dependent from it, as in the cases of Zwillinger and in the present case. The presence of polypi anterior to such a mass would make it more probable that it was a dilated "bulla ethmoidalis." In some dozen cases of enlargement of the bulla ethmoidalis that have chanced to come under my observation polypi have invariably been present and it was only after their removal that the bulla ethmoidalis was seen. The bulla is always a considerable distance from the agger nasi. In these cases, if the middle turbinate cannot be seen at first, operative interference will reveal it unscathed.

Histologically, the cysts and the bulla ethmoidalis differ greatly; for, while turbinal cavernous tissue covers the cysts, the bullæ have no such covering. Lining the bulla internally there is always a mucous membrane, and in the cases I have seen pus has always been present, a fact which I think explains the distention of the bulla. In true cysts of the turbinate a lining mucous membrane and pus may or may not be present. A much curved turbinate may simulate closely a cyst of that bone, but in histological examination the location of the cavernous tissue would differentiate clearly between them.

Hypertrophy of the anterior end of middle turbinate may on account of its size and color simulate a cyst of the turbinate; but examination with the probe will eliminate it. Polypi containing bone, as described by Zarniko and Manasse, can be eliminated by their easy displacement. Furthermore, a localized spot on the turbinate may be bullous in form and there may be difficulty in distinguishing it from a cyst, but not being a complete cell, it is hemispherical in form; besides, its convexity is toward the septum and blocks the olfactory fissure. Again, an inverted turbinate may deceive us; but this, instead of having the concavity directed outward, has it directed inward and the convexity is inward towards wall of antrum.

BIBLIOGRAPHY.

Santorini. Observationes Anatomicæ.
Dupuytren. Clinique Paris, 1830, xi, 174–179.
Chantreuil. Bull. Soc. Anat. de Paris, 1869, xliv, 83.
Glasmacher. Berl. klin. Woch., 1884, xxi.
Butlin. St. Bart. Hosp. Rep., 1885, xxi, 147–152.
Willet. Ibid.
Bayer. Rev. Mens. de Larygn., Paris, 1885, 277–285.
Casabianca. Thése de Paris, 1876.
McDonald. Lancet, 1892.
Schaffer. Clin. Erfahrung. d. Rhin. u. Laryng.
Schmiegelow. Rev. Mens. Laryng., 1890, x.
Steida. Arch. f. Laryng., 111, 359.
Knight. N. Y. Med. Jour., June 20, 1892.
McBride. Brit. Med. Jour., May 14, 1892.
Zuckerkandl. Anat. D. Nasen. Taf., iv, Fig. 9–10, P.
Steir. Inaug. Diss., Rostock., 1895.
Zwillinger. Wiener klin. Woch., 1891, xix.
Frankel. Berl. klin. Woch., No. 22, p. 498.
Heymann. Ibid.
Hajek. Wiener laryngolog. Gesell.
Joucheray. Société Franc. d'Otol. et de Laryng., May 4, 1896.
Wright. N. Y. Acad. of Medicine. April 27, 1896.
Rousseau. Soc. Franc. d'Otol. et de Laryng.

Clinical Department.

A CASE OF CALCULUS OF THE UVULA.

BY J. L. GOODALE, M.D., BOSTON.

The following case is unique in several particulars, so far as is shown by an examination of the literature accessible to me.

The patient, a female, colored, two months of age, was brought to me for choking and obstruction to breathing. These symptoms had been present since birth, and within a few weeks had increased in intensity. Examination showed that respiration in an upright position was essentially normal, being performed easily through the nose. When the child was placed on the back, a considerable amount of obstruction to nasal respiration was apparent, resembling that caused by hypertrophy of the pharyngeal tonsil. The child nursed well in an upright or nearly upright position, and except for slight constipation showed no other abnormal symptoms. Inspection of the oropharynx showed on the anterior aspect of the uvula, midway between the tip and junction with the soft palate, a white globular mass, about four millimetres in diameter, lying apparently immediately beneath the epithelium. The epithelium covering it and that in the neighborhood were of normal lustre, and without reddening. The consistence of the mass, as shown by the probe and forceps, was of bony hardness. It was readily enucleated by the cutting forceps. Slight hemorrhage followed and quickly ceased. Under a pressure of about three pounds, the calculus broke into yellowish-white fragments. These were seen under the microscope to consist of amorphous particles, together with fat-crystals, fat-drops and fatty-degenerated epithelium.

One week after the removal of the calculus, the wound had healed, and respiration in the recumbent position was decidedly freer.

It seems most natural to suppose that the mass was situated in a dilated mucous gland and had arisen through obstruction of the duct of the latter. It seems also probable that the interference with nasal respiration was caused by the mass acting as a weight upon the uvula to occlude somewhat the nasopharynx.

While no cases of calculus of the uvula have been reported, so far as I am aware, there have been at least three instances recorded of calculus of the soft palate. In all probability the pathology of the two conditions is the same.

The first two cases of calculus of the soft palate are reported by Anselmier.[1] In one case, a boy, aged sixteen, presented with a history of difficulty of deglutition and respiration, which had lasted some time. Two masses were found on the soft palate, one on either side of the uvula, about the size of a hazel nut, which, on probing through the dilated mouths of the palatine glands, were found to be calcareous.

The insertion of a tampon saturated with dilute sulphuric acid into these recesses resulted in completely dissipating the calcareous masses. The other case occurred in a man, aged twenty-five, in whom were observed three of these masses. The same treatment was successful in this case.

C. A. Parker[2] reported in 1893 a case of calculus of the soft palate, occurring in a man, twenty-nine years of age, who had had post-nasal growths removed three years previously, and who complained of great soreness of the throat for the last six or eight months. The calculus was situated in the substance of the soft palate just to the right of the base of the uvula, a portion lying free and resembling a sloughing ulcer. The calculus was removed from what was apparently a cul-de-sac between the muscular layers, and when dry weighed fifty-four grains. It was composed of epithelial *débris*, spores and gladothrix mycelium, together with earthy salts.

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[1] Cited by Bosworth: Diseases of the Nose and Throat, vol. II, p. 361.

[2] Proceedings of the Laryngological Society of London, December 13, 1893.

A CASE OF CEPHALIC TETANUS.[1]

BY GARRY DE N. HOUGH, M.D., NEW BEDFORD.

On November 19, 1897, Charles Dunham was struck a blow on the nose by John Bryden. The blow made a small wound which bled quite profusely. The bleeding was checked by pressure with a dirty handkerchief.

On November 26th a physician was called for the first time, the complaint being stiffness of the jaws. Next morning the patient was sent to the hospital.

The symptoms were: trismus, inability to articulate, inability to swallow, tetanic contractions of the muscles of the neck, a few convulsions, fever, rapid and weak pulse, death. The noteworthy feature was the limitation of the tetanic symptoms to the head and neck.

On the bridge of the nose was a foul ulcer about the size of a five-cent piece, partially covered by a scab. Cultures were made from the pus under this scab, but nothing resembling tetanus bacilli was found.

When I examined the body I found, besides the ulcer on the nose, a very recently cicatrized wound about one inch long on the dorsum of the left forearm (to a part of which a scab was still adherent), and on the left great toe a tiny ulcer, due to an ingrowing nail (perhaps an eighth of an inch in diameter).

Internally I found: some congestion of the pia mater, hypostatic congestion of the lungs, parenchymatous degeneration of the heart muscle, a somewhat enlarged and softened spleen, congested kidneys, and otherwise normal organs.

Death took place on November 28th, autopsy on the 30th.

Bryden was indicted for manslaughter. I held that it was not yet established as a scientific fact that the form of tetanus called "cephalic" was necessarily the result of infection through a wound situated in the region of distribution of the fifth nerve and that, therefore, since two other recent solutions of continuity existed in the body, it could not be made out that the blow on the nose was the cause of death.

My opinion, of course, was founded on the literature accessible to me. Was this opinion, in the judgment of the Society, justifiable?

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Medical Progress.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 22, p. 548.)

INGUINAL HERNIA OF THE URINARY BLADDER.

Volume XX (1898, s. 727) of the *Beitr. Z. Klin. Chir.* contains a very interesting and valuable article relating to this rare lesion by G. Lotheissen of Innsbruck. He has observed seven cases and has personally operated on six in which the bladder was recognized and not injured. The literature at his disposal contained 138 cases. The Innsbruck records show that it occurs in 3.2 per cent. of all inguinal hernia. It is found in old people and particularly in men. The lesion is an intraperitoneal cystocele, an extraperitoneal cystocele, or as a mixed form. The intraperitoneal and mixed types occur externally or to the outer side of the epigastric vessels. The extra-peritoneal hernia to the inner side of them, that is, towards the median line, and appear always as a direct hernia. The lesion must be regarded as acquired. There are usually no symptoms, but when symptoms do occur there is painful micturition, vesical tenesmus, etc. The condition characteristic of a cystocele is an inguinal swelling which is distended before micturition and collapses completely after the act. Usually one first recognizes the cystocele during a hernia operation by the position, and if the necessary caution is used an injury to the bladder can be avoided. A clean dissection of the sac is the surest way to recognize the anatomical relations. One sees a muscular layer having a mesh-like appearance. The bladder can also be demonstrated by the passage of a sound or distention with any suitable solution.

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[1] Read before the Massachusetts Medico-Legal Society, October 5, 1898.

The bladder has been frequently injured during operations on unrecognized cystoceles (inguinal) thirty-seven times in sixty-five cases. Several times it has been transfixed by the deep sutures. A number of deaths have resulted from these unrecognized injuries but this now rarely occurs.

The treatment is only by operation.

If the bladder is recognized and is uninjured the prolapsed part is replaced, which is usually easily done in the intra- and extra-peritoneal forms. In the mixed forms one often finds firm adhesions between the bladder and the hernial sac which must be carefully separated. In incarcerated cases gangrene of the bladder wall is not usual and the treatment is the same as for an ordinary case of incarcerated hernia. Gangrene however does occur, and then one must either leave the prolapsed bladder in the wound for the necrosed portion of the bladder wall to separate spontaneously, or one at once resects the gangrenous portion and unites the bladder wound by primary suture. Lotheissen recommends the former method. Classification of the collected cases shows (1) that a diagnosis was made without operation in 11 cases; (2) inguinal cystocele was found at autopsy in 14 cases; (3) the bladder was unrecognized and injured during operation in 65 cases; (4) it was recognized during the operation and not injured in 38 cases.

TREATMENT OF VARICOSE VEINS.

Hotzmann[12] has written an article relating to the treatment of varices and some of their complications. The actual clinical data has been collected from the record of 40 cases. In brief, his conclusions are:

(1) The most rational and best treatment in all cases of varices of the leg with insufficiency of the saphenous, especially if the varices are a burden to the patient and cause complications, is single or multiple ligation and division of the long saphenous.

(2) This ligation, which overcomes the trouble and complications due to the insufficiency of the saphenous, has little influence on the chronic edema.

(3) Varices, as such, are not permanently relieved by the Trendelenburg method of ligation.

(4) To overcome the chronic edema and the varices also which are so extended that the ligation of the saphenous is not effective the combination of the Trendelenburg ligation with extensive longitudinal incision along the leg through the venous knots and anastomoses down to the muscular fascia (Ledderhose method) is recommended. These are made with the leg raised perpendicularly and immediately closed with a continuous suture. A compression bandage is applied.

SARCOMA AFFECTING LONG BONES.

Reinhart[13] has reported the results of his investigation of sarcoma of the long bones observed at the Göttingen Klinik during 1880–1895. He collected 54 cases. The growth occurred most frequently in the upper third of the tibia and lower third of the femur. He attributes this to the fact that at these points the epiphyseal line remains longest cartilagenous (to twenty-second year of life) of the long bones.

Reinhart classifies the tumors as (1) pure periosteal sarcoma; (2) sarcoma both periosteal and osseous, that is, involves both; (*a*) origin probably from periosteum, (*b*) origin probably from bone. (3) Pure central sarcoma. Class 3 is more frequent than Class 1. Class 1 is found most frequently on the shaft of the bone. Class 3 near the epiphyseal line, but the portion primarily affected is on the shaft side of the epiphyseal line and not on the epiphyseal.

In regard to age, the tumors occurred most frequently in patients between fifteen to twenty-five years; but the range extended from ten to sixty-seven years of age. There were forty males and fourteen females. Traumatism as a possible cause was reported in one-sixth of the cases. The difficulty in diagnosis was most frequently to distinguish a sarcoma from tuberculosis near the epiphysis. This was accomplished in several cases only by an exploratory incision. Fracture of the bone occurred in nine cases (femur five times, humerus three, tibia one). More recently the bony changes that can be demonstrated by skiagraphy assist much in diagnosis. Treatment was almost without exception amputation or exarticulation. Partial extirpation of the smaller bones in cases of giant cell sarcoma, for example, tarsus, os, calcis clavicle. In other forms Reinhart warns against partial excision, since occasionally isolated nodules occur in the shaft of the bone separate from the main growth. Death by recurrence and metastasis occurred in several cases two to three and four years after the operation. In estimating the end results no cases are considered which were seen later than the autumn of 1891. Of these, thirty-nine in number, eighteen per cent., have remained cured, one after eleven to twelve years, two after ten and three after eight years. Four patients died at once after the operation, namely, two after exarticulation of the hip, one of the shoulder and one curetting out of a large necrotic bone growth of the femur.

BIBLIOGRAPHY.

Lund, F. B. The Antitoxin Treatment of Tetanus. Medical Communications of the Massachusetts Medical Society, 1898, vol. xvii, No. III, p. 795.

Coley, W. B. The Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus; Immediate and Final Results in 140 Cases. Reprint from the Journal of the American Medical Association, August 27, 1898.

Nichols, Ed. H. The Pathology of Acute Infectious Osteomyelitis. Medical Communications of the Massachusetts Medical Society, 1898, vol. xvii, No. III, p. 875.

Gigli, L. Zur Technique der temporären Schädel resektion mit meiner Drahtsäge. Centbl. f. Chir., 1898, Bd. xxv, 16.

Hearn, W. J. Treatment of "Saddle" Nose by Insertion of a Gold Plate without External Incision. Annals of Surgery, 1898, vol. xxvii, 377.

Monks, G. H. Correction by Operation of some Nasal Deformities and Disfigurements. Communications of the Massachusetts Medical Society, 1898, vol. xvii, No. III, 829.

Cushing, Harvey W. Operative Wounds of the Thoracic Duct,

---

[12] Strassburger Dissertation, 1898.

[13] Deutsche Zeitschr. f. Chir., xlvii, 523, 1898.

Case with Suture of the Duct. Annals of Surgery, 1898, vol. xxvii, 719.
Willy Meyer. Gastrostomy by Marwedel's Method. Annals of Surgery, 1898, vol. xxvii, 650.
Binnie, J. F. Terrier and Auvray on Floating Liver and its Surgical Treatment. Editorial, Annals of Surgery, 1898, vol. xxvii, 115.
Korte, W. Die chirurgischen Krankheiten und der Verletzungen des Pankreas mit 18 Abbildungen. Deutsche Chirurgie, 1898, Lieferung 45 d.
Mitchell, J. F. Extraperitoneal Rupture of the Bladder Complicated with Fracture of the Pelvis. Literature of ninety cases. Annals of Surgery, 1898, vol. xxvii, 151.
Warhasse, J. P. The Treatment of Fracture of the Lower Extremity, Clinical Report of 450 cases. Annals of Surgery, 1898, vol. xxvii. 593.
Cumston, C. G. Varicose Veins and their Treatment. Annals of Surgery, 1898, vol. xxvii, 626.

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Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Abstract of the Proceedings of the Twenty-Sixth Annual Meeting, Held at Ottawa, Canada, September, 27, 28, 29 and 30, 1898.

The Association met in the Railway Committee Room of the House of Commons, under the Presidency of Dr. Charles A. Lindsley, of New Haven, Conn.

At the opening session twenty-six applications for membership were read and acted upon favorably.

Resolutions were presented by Mr. Henry Lomb, setting forth the desirability of sustaining all existing voluntary sanitary organizations and outlining a plan for the multiplication and extension of them. The most promising direction in which energetic efforts could at present be exerted would be to devise and establish, on a permanent basis, a system for the instruction and training of persons who were already pursuing, or who may desire to engage in, the business of sanitary inspection. It was therefore,

Resolved, That while the Association recognizes the value of the local auxiliary sanitary societies in many of the States, yet effectual enforcement of the laws and ordinances designed to prevent the spread of diseases can best be assisted by supplying for employment by executive health officers men who have been taught the art of hygiene.

The Association concurred in the resolutions.

Dr. C. L. Wilbur, of Lansing, Mich., offered the following resolutions, which were referred to the Executive Committee:

Resolved, That the American Public Health Association earnestly recommends that a plan be incorporated in the act to provide for the taking of the next United States census whereby reliable representative vital statistics may be secured for the non-registration States.

Resolved, That the Association recommends that the Bertillon classification of causes of death be adopted by all the registrars of vital statistics in the United States, Canada and Mexico as soon as the change from the systems now in use can be conveniently made.

Resolved, That the Committee on Nomenclature of Diseases and Forms of Statistics be authorized to have printed and circulated among the registrars of the three countries a circular containing these resolutions, the report of the Committee on which it is based, the three alternative forms of the Bertillon classification, with explanatory notes on inclusion of terms, and practical rules for compilation, and a list of the registration offices adopting the same.

Resolved, That a proposal be made for an International Alliance between the registrars of the three countries included in this Association and the registrars of France and other countries now using, or which shall hereafter adopt, the Bertillon system, and that definite plans for such Alliance shall be submitted for action to the next Annual Meeting of this Association.

The Executive Committee subsequently recommended the adoption of the above resolutions, and they were unanimously concurred in by the Association.

Dr. John L. Leal, of Paterson, N. J., read a paper entitled

AN OUTBREAK OF TYPHOID FEVER DUE TO AN INFECTED WATER-SUPPLY.

The author dealt with the pollution of water as supplied to the residents of that city. The outbreak established the fact that the germs originating in a single case of typhoid fever might infect even a large body of water so as to reproduce itself among those dependent upon the same body of water for their public supply, even though the supply be taken at a point some distance from the focus of infection. The cases of typhoid, in the present instance, had developed as follows: During the last half of September there were 26 cases; October, 41 cases; November, 108 cases; December, 58 cases. The disease was evenly distributed throughout the city, except in one district containing about 2,000 people, and among all classes of the inhabitants. No possible common means of infection could be found except the public water-supply, upon which all of those infected, with the possible exception of two or three, were dependent for at least a portion of the twenty-four hours. The only section of the city which did not contain a single case was not furnished with a public water-supply. The water was taken from the Passaic River. No evidence was shown above the falls of harmful pollution. Below the falls chemical evidence of harmful pollution was found. After stating the time during which infection existed in the stream, he related the case of a patient who had returned from a summer resort suffering from typhoid, who practically recovered, but later was taken with a relapse, which lasted about a month before convalescence began. The river had been more or less continuously infected by cesspools from September 1st until November 24th, when the discharge pipe was discovered and further infection from that source prevented.

Dr. Peter H. Bryce, of Toronto, read an exhaustive report as Chairman of the Committee on

THE CAUSE AND PREVENTION OF INFECTIOUS DISEASES.

He stated that infectious diseases must be divided as regards their mode of causation and their growth and development.

With reference to the methods for suppressing outbreaks of diphtheria in a community, he said that further experience in Ontario during the past year had shown that the following seems the most effective and prompt means of stamping out an outbreak: In a number of municipalities where the disease appeared, as it always does, principally amongst school children, the practice was introduced of a morning visitation by the Sanitary Inspector to all the public schools to obtain a list of the day's absentees. The homes of these were promptly visited, and where any evidence of malaise and sore throat was present, the parents were at once required to send for a family physician and have a swab taken and forwarded to the Medical Officer by the afternoon. These were sent at once by mail to the laboratory, and the patient isolated until an answer by telegraph of the result of the examination was received. Where the cases proved to be diphtheria, the patient was isolated until further examination proved the freedom of the throat from bacilli. The children of the household were kept from school and the public, and the home subsequently disinfected with formaldehyde where the child had not been removed to the hospital.

The essayist then briefly referred to the progress made in medical knowledge, both with regard to the inoculation and dissemination and prevention of tuberculosis. The experiments of Pflugge regarding the dissemination of dust and germs of disease by air movements in houses go to show that "in those cases where inhalation-infection has been successful sprayed moist sputum has always been used." The author concludes that in diphtheria, scarlet fever, consumption, influenza, etc., there is more danger from the infecting agent thrown into the air by the act of coughing than from dust derived from the same material. He referred to the extreme danger attaching to inmates of the same houses where cases of consumption in advanced stages are resident.

WHAT CONSTITUTES AN EPIDEMIC?

Dr. **Benjamin Lee**, of Philadelphia, read a paper on this subject, in which he claims that if a dozen cases occurred in rapid succession from one case, then an epidemic exists. He referred to the indisposition of communities to admit the existence of epidemics owing to the injury to commerce which was likely to result. His contention was that the actual number of cases of a contagious disease in proportion to the population as a criterion for the declaration of an epidemic had nothing to do with the case. He thought that rapidity of spread should be solely considered. "The Board of Health, which, having knowledge of such conditions, purposely conceals it, or, still worse, denies it, is guilty of a crime of hideous proportions, none the less so because it is acting in obedience to the behests of the business portion of the community or from a mistaken sense of local patriotism."

Mrs. **Ellen H. Richards**, of Boston, contributed a paper on

THE URGENT NEED OF SANITARY EDUCATION IN THE PUBLIC SCHOOLS.

She said the average American citizen had not accepted the teaching of sanitary science as a part of his creed. The remedy for this ignorance was to be found in securing the correct teaching of the elements of public hygiene in the public schools of the country. The diseases among American soldiers in the late war were caused, in her opinion, by culpable ignorance among the officers. Clean school-houses, clean streets, and special education cost money, which municipal officials claim it is impossible to get, but the fact should be brought home to the community that the cost of needless sickness and death among our soldiers would have paid for the cleaning of every schoolhouse in the land, and the amount of the pension money would be more than sufficient to keep them clean. She advocated the appointment of a Committee to prepare a primer which should contain the essential principles of preventive medicine, and which could be as universally taught as is first aid to the injured. Good cooking was also a factor in preventing a disease.

At the evening session of the first day addresses of welcome were delivered by the **Hon. Sydney Fisher**, M.P., **Sir James Grant**, the Mayor of Ottawa, and **Alderman W. G. Black**.

The response to these various addresses was made by the President of the Association, Dr. **Lindsley**.

Dr. **Benjamin Lee** then took the chair and **President Lindsley** delivered his

ANNUAL ADDRESS.

He said the primary and ultimate purpose of the Association was the protection and preservation of the public health. Sanitary science was based on the correct interpretation of facts. The verification of a single fact often involved a long investigation. For example, there was much significance in the fact that civilized man lived longer than the savage, that this had arrested the attention of close observers, and prompted inquiry into the special factors in civilization which had caused this result. Civilization was a power exerting an influence upon human life in many directions. The conditions of modern civilization contributed powerfully toward lengthening life, if the average of a large community was the basis of measurement. Social practices of so-called civilization might prematurely cut the thread of life and so diminish its average duration.

Dr. Lindsley reminded his hearers of the progress made in medical science during the past few years. Not many of us have had personal observation of the plague, of leprosy, of scurvy, of typhus fever, or of yellow fever. Civilization was an evolution. It was progressive, developing new features with every advance. Health organizations were themselves a development of civilization. He said that England led all other countries in public sanitation. In Canada, Mexico and in many States in America they were illustrating — as yet imperfectly — an ideal system. He dwelt at length on the system of looking after the health of the public, which, in his opinion, was an excellent one, and said the public intelligence should appreciate the value of it. He advocated a public chemical and bacteriological laboratory, and said a Central Board of Health was not fully equipped without one.

The future of the administration of public hygiene in America is encouraging. The progress which it has made in the last two decades indicates a vigorous and healthy growth. But it is still in its early youth. Its motto from now on must be: "Organization and efficient co-operation."

This Association will continue to be as it has been, an ever-increasing fruitful fountain of information, and as an active agent in developing the power of public opinion in aid of the cause, an influence for good which cannot be estimated.

Provincial, State and local boards of health, in organic form, are coming to be recognized everywhere as necessary forces for the safety and well-being of all civilized communities. The movement has gained an impetus which cannot be resisted. It must go on, nurtured, sustained and guided in its progress by the skill, judicious enterprise and intelligent energy (so characteristic of the people of North America), until, in practical utility and successful results, it will have no superior among the nations of the earth.

DR. HENRY B. HORLBECK, of Charleston, S. C., Chairman, presented the

REPORT OF COMMITTEE ON THE ETIOLOGY OF YELLOW FEVER.

Reference was made to the labors and experiments and discoveries of Sanarelli. A number of enlightened colleagues of this distinguished laborer have been engaged in verifying and extending his researches as to the cause of this disease. Sanarelli claims that he has found the bacillus icteroides in 58 per cent. of the cases examined, and believes that the reason of his non-success in finding it always is due to incidental causes. The author gave a description of the bacillus of yellow fever, and then referred to the work of other investigators. Drs. P. E. and John I. Achinard, of New Orleans, had studied the subject in relation to diagnosis by the Widal method of the bacillus icteroides. In 50 cases of yellow fever, agglutination with cessation of motion was obtained in over 40 per cent. of cases, the reaction being as characteristic as in typhoid fever cases.

The work of these gentlemen demonstrates: (1) the practical value of serum diagnosis; (2) it may be utilized as early as the second day; (3) that a dilution of $\frac{1}{40}$ with the time-limit of one hour is to be preferred for accuracy in diagnosis; (4) the dried blood method of Dr. Johnston is perfectly satisfactory; (5) the serum diagnosis of yellow fever should be instituted in all countries wherein the disease may exist endemically, or which may be occasionally visited by epidemics; (6) it is especially valuable at the beginning of epidemics in the diagnosis of early and doubtful cases. The universal consensus of opinion among the enlightened scientific world was that yellow fever was due to a specific organism and that while the bacillus icteroides might not be the inevitable cause of the disease, it was still of sufficient importance to warrant its closer study.

As a supplement to the report, DR. DOTY, of New York, states that his researches indicate that the antitoxin serum possesses rather weak preventive power. Experiments made to determine its curative power had yielded negative results. His investigations on the subject of vaccine or a prophylactic fluid would indicate that the bacteria isolated from cases of yellow fever have preventive powers when prepared and inoculated according to the methods of Koch and Haffkine.

DR. EDUARDO LICÉAGA, of Mexico, read a sixth report on the

ETIOLOGY OF YELLOW FEVER.

This disease was defined as a febrile affection of a contagious character which prevails endemically in certain parts of the Republic of Mexico, and sometimes assumes an epidemic form. The only centre of the disease that exists on the coast of the Mexican Republic was found in the canton of Vera Cruz. In no other part of the Gulf coast does yellow fever ever make its appearance spontaneously. The disease has been transmitted through the bagging that carried corn, sugar and coffee. It has also been transported by the clothing of persons who have been attacked, and also by the skins which are exported from the places in which the endemic exists. Another material which served to propagate yellow fever was the ballast which is shipped by the vessels in Vera Cruz after having landed their cargo. The propagation of the disease through the medium of water was not well established, although it was a probable cause.

The general conditions that favor the transmission of yellow fever are humidity, heat, want of light and of ventilation. Sanarelli believes that mould affords protection to the yellow-fever germ, and that once it finds a lodging in the mould it is preserved in the houses, ships and other objects that can serve as a medium of transmission. The same author believes that mosquitos can serve the same purpose.

REPORT OF THE COMMITTEE ON THE CAUSE AND PREVENTION OF INFANT MORTALITY.

This was read by the Chairman, DR. ERNEST WENDE, of Buffalo, N. Y. He said that the utmost care must be exercised so as not to confuse diphtheria with some trivial disease, it being perfectly obvious from its dangerous character that it was essential to make a diagnosis as early as possible. Reports from the smaller communities bore ostensible evidence of absence of vigilance for the wholesomeness of water and the milk-supply, this being a most important feature of public sanitation, requiring a fearless surveillance and systematic investigation in relation to all infectious diseases. He said that several scarlet fever and diphtheria epidemics had been averted in Buffalo by promptly tracing the source of infection to a particular milk route. Most satifaction was found in the general condemnation of the long-tube, death-dealing nursing bottle. Buffalo, through its City Health Department, had interdicted the use of the long rubber tube, and as a consequence of which a suit is now pending in the courts to test the validity of such action, the suit being prompted by commercial interests. In preparing for this litigation, to be able to demonstrate the danger of such nursing bottles and the justification for suppressing them, the Department of Health had resorted to a series of microscopical, bacteriological and chemical investigations, which revealed innumerable bacteria of varied morphology.

(To be continued.)

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THE NEW YORK STATE MEDICAL ASSOCIATION.

FIFTEENTH ANNUAL MEETING AT THE MOTT MEMORIAL HALL, NEW YORK CITY, OCTOBER 18-20, 1898.

(Concluded from No. 22, p. 550.)

DR. LEROY J. BROOKS, of Norwich, Chenango County, read a paper on

THE DIAGNOSIS AND INDICATIONS FOR TREATMENT OF CHRONIC INTESTINAL OBSTRUCTION.

The trend of opinion on the treatment of this class of cases, he said, had been in the direction of surgical interference, but in reality little advance had been made within the last fifty years. In many respects it was difficult to separate acute and chronic obstruction. As to the diagnosis in any supposed case, three questions presented themselves: (1) Has the patient chronic intestinal obstruction? (2) If so, what is its character? (3) What is its location? The symptoms we should expect to see in a case of chronic obstruction would be, constipation, abdominal pain, nausea, vomiting, and tympanites, with perhaps marasmus and cachexia and such concomitant signs as hiccough or jaundice.

As to the character of the obstruction, the trouble might be caused by simple and malignant growths, by inflammatory bands or diverticula, by gall-stones or other foreign bodies, or by impacted feces. Age was an element of some importance, and it was rare in infancy. Gall-stones, while not infrequent between thirty and forty, were most common in those over forty, and malignant disease usually occurred between forty and seventy-five. Pain was more or less indicative of the degree of obstruction, and nausea and vomiting were present in all cases of stricture. Cachexia and marasmus were seen as the result of auto-infection.

In regard to the location of the obstruction, the nearer it was to the stomach the more severe were the symptoms of pain and vomiting. As a rule, the pain from obstructions in the small intestine centred in the navel. Tympanites was absent if the seat of the obstruction was high up, and marked if it was situated low. Post-operative obstructions were usually met with at the junction of the large and small intestine. In 75 per cent. of cases constipation was present, and in 25 per cent. constipation alternated with diarrhea. Adynamic obstruction (due to paresis) presented many difficulties in the matter of diagnosis. Exploratory laparotomy was not infrequently called for in chronic obstruction in order that a satisfactory knowledge of the condition of the parts might be obtained. We could often make a diagnosis between the large and small intestine, and yet remain in doubt as to the character of the obstruction. There could be no question that too much conservatism had sacrificed many lives.

As to the indications for treatment, surgical interference was generally demanded except in cases of fecal impaction, the operative procedure varying according to the circumstances of the case in question. A considerable proportion of the cases of chronic obstruction was due to peritoneal inflammation resulting from abdominal operations, and he thought that surgeons should observe greater care in opening the peritoneum with a view to the prevention of such an unfortunate sequela.

Dr. John F. Erdmann, of New York County, read a paper on

INTESTINAL OBSTRUCTION DUE TO INTUSSUSCEPTION AND VOLVULUS.

Intussusception, he said, might be either ileo-cecal, ileo-colic, or enteric (involving the small intestine only). The last-named variety was the most common. As to its anatomical etiology, he had not observed that a long mesentery was a factor in its production, but believed that the contraction of the circular fibres of the intestine was an important element therein The opinion expressed by many authors that children of robust physique were less liable to the accident than feeble ones was not borne out by his experience, as most of his patients had been well nourished. It would seem that all causes producing diarrhea and vomiting tended to cause irregular peristalsis. The signs of this form of obstruction which Dr. Erdmann enumerated were those personally observed by him, and not derived from the books. Among them were pain and distention of the abdomen. Vomiting was present in only three cases out of seven. Constipation was by no means constant. Frequently there was an evacuation of stools from below the seat of obstruction. Later the patient passed blood and mucus, or mucus tinged with blood. Tenesmus was usually present, and great restlessness in the case of children. If, after the injections with water, the moaning and restlessness ceased within twenty-four hours, the intussusception could be said to have been reduced. Tumor was usually absent in his cases.

In speaking of the treatment he referred first to mechanical means, and said that, to be successful, enemata should be used in the first twenty-four hours. In order that they might be applied effectively the patient should be placed in an inclined position or suspended by the feet. The head of water should not be elevated more than four feet. In connection with the injections, massage of the abdomen should be practised. Although the danger from the use of water was of the same nature, it was not so great as that from the use of air for dilatation. Should the enemata be followed by no relief, operation should be promptly resorted to, just as in strangulated hernia when taxis failed to reduce.

He could not agree with those who claimed that children bear laparotomy poorly. He had operated successfully on one child seventeen weeks old, on another two years old, and on a third three years old. After exposing the tumor reduction should be made, not by traction upon the bowel but by gentle pressure from behind. If the operation was not done easily, enterostomy would probably be required. He described the procedures called for, referring particularly to Barker's and Paul's operations, and stated that typical end-to-end anastomosis was justifiable only when the patient's condition was unusually good. In conclusion, Dr Erdmann gave a *résumé* of seven cases in his own practice, four of which had been met with during the past year. Four of the patients, adults, died, being admitted to hospital in a practically moribund condition, and three, children, recovered after operation.

Volvulus was characterized by the sudden onset of severe pain. Occasionally a tumor could be felt, percussion over which would yield a note, varying from dull to highly tympanitic. Self-cure might possibly take place. If it did not, progressive peritonitis, at first local and then general, would occur, with concurrent gangrene of the bowel. He had seen two cases, both of which were beyond all hope when admitted to hospital.

Dr. Frederick Holme Wiggin, of New York, read a paper entitled

THE TECHNICS OF THE OPERATIVE TREATMENT OF INTESTINAL OBSTRUCTION.

He said that the various conditions for which operations are usually demanded are: (1) strangulation of the gut by bands, extensive adhesions or apertures; (2) volvulus; (3) intussusception; (4) obstructions due to neoplasm; (5) compression by tumors external to the gut; (6) obstruction from foreign bodies, such as gall-stones and enetroliths; and (7) obstruction caused by fecal masses.

Where the case is one of acute intestinal obstruction there is but little time for preparation. The loose pieces of furniture should be removed from the room selected for the operation, and sheets wet with carbolic-acid solution, 1 to 20, or bichloride solution, 1 to 100, should be placed over the carpet. In this preparation of the room it is important that no dust be raised. The instruments are boiled for ten minutes in a two-per-cent. solution of carbonate of soda and are then placed in trays containing sterilized water. The towels may be sterilized in a special sterilizer or by boiling. A large quantity of saline solution (one teaspoonful of common salt to the quart of water) should be on hand, and a wash-boiler, after thorough cleansing, should be filled with water which has been sterilized by boiling for an hour. This water is then rapidly cooled in pitchers surrounded by ice. Where there is great haste, it is admissible to take the water from the hot-water faucet. If there has been much vomiting, or if there is considerable abdominal distention, it will be well to follow Kussmaul's suggestion, to wash out the stomach with saline or boric-acid solution. If, in addition, the patient is much prostrated, and does not respond well to the ordinary cardiac stimulants, from one to three pints of saline solution should be injected into the veins.

The patient having been anesthetized, the skin over the field of operation is treated successively with the following: (1) green soap; (2) hydrogen dioxide; (3) lathered and shaved; (4) water; (5) equal parts of alcohol and ether; (6) 1 to 500 bichloride solution in alcohol; and (7) sterile water or saline solution. The bladder should then be emptied by catheter. When the site of obstruction cannot be definitely located, an incision, four inches long, should be made through the right rectus muscle, between the umbilicus and the pubes. If distended coils of intestine obscure the view, they should be aspirated or incised, and the wounds so made closed by suture, and the parts disinfected with hydrogen dioxide. The first effort of the operator should be to find the cecum. If it is greatly distended there is good reason to believe that the obstruction is in the colon, but if there is little or no distention, it is probable that the stoppage is in the small intestine. The rectum should, of course, be explored prior to the abdominal section. Where the obstruction is supposed to be in the colon, the hand should be passed over the entire length of the large bowel, or until the obstruction is found. Where the obstruction is suspected to be in the small intestine, the operator should look along the brim of the pelvis and in the region of the cecum for the collapsed portion of bowel, and follow this down to the obstruction. The various hernial orifices should also be examined, remembering that sometimes two forms of obstruction may co-exist.

If the intestinal obstruction is caused by bands, these should be ligated on both sides near their attachment, and removed. If a diverticulum or an adherent appendix is the cause of the trouble, these portions of the bowel should be removed in the ordinary manner, and the opening in the gut closed with Lembert sutures. According to the writer's experience, when volvulus occurs in the small intestine it is not only safe, but desirable, to draw the intestine out of the abdomen, taking care to keep it hot and moist by wrapping it in gauze or soft towels wrung out of hot saline solution. Where an intussusception is the cause of the obstruction, the tumor should be encircled below its apex by the finger and thumb, and the sheath held a few inches lower down, while the apex of the tumor is pushed upward. Traction from above the tumor should not be employed. If the intussusception is irreducible, the following method, described by Maunsell, is recommended: A slit is made in the intussuscipiens and gentle traction is exerted on the intussusceptum until its neck appears outside the opening in the intussuscipiens. The base is then transfixed with two straight needles, armed with horsehair, and the intussusception is amputated one-fourth of an inch above the needle. The sutures are now passed through the invaginated bowel, caught up in the interior of the bowel, divided and tied. The invagination is then reduced, and the slit closed. Thanks to modern surgery, most neoplasms causing intestinal obstruction can be removed, and naturally such a course is preferable to colotomy. Where it is inadvisable to resect the portion of bowel containing the growth, an incision, four inches long, should be made over this portion, in the direction of the fibres of the external oblique, and the bowel drawn upward until its mesenteric attachment is on a level with the external incision. A slit is then made in the mesentery and a glass rod is passed through, and iodoform gauze wound around the ends of the rod. The rod is left in position until adhesions have formed, when the gut is opened.

When the intestinal obstruction results from the pressure of a neoplasm external to the gut, the new growth should be extirpated, but if this is not possible a fecal fistula must be established above the point of obstruction. Gall-stones or enteroliths causing obstruction should be pushed a little upward or downward, and then removed by an incision. The object of this is to avoid making the incision through the portion of the gut which is likely to have been damaged by pressure. Fecal accumulations causing obstruction are best removed by a high enema of saline solution, injected at a temperature of 100° F. by means of a fountain syringe raised three feet above the patient. The flow should be intermitted from time to time as the patient complains of distention or colic. The enema should be retained as long as possible, for the object in giving it is to secure the softening of the mass rather than to stimulate peristalsis. The procedure may be repeated several times, and its action assisted by the administration of small doses of calomel and soda.

When the gut is found to be gangreuous, in a case of intestinal obstruction, an end-to-end anastomosis should be effected, and for this purpose Dr. Wiggin prefers his modification of Maunsell's method. The modification consists in doing away with the invagination and the slit. The portion of intestine to be extirpated is emptied of its contents by pressure. The portion to be removed is then isolated by clamps on either side, and a V-shaped incision is made, having its apex in the mesentery. The mesenteric vessels are ligated before being cut, and the wound in the mesentery is sutured. After washing the divided ends of the bowel with hydrogen dioxide, they are united by two sutures passing through all the intestinal coats, the first suture being at the inferior or mesenteric border, and the second directly opposite at the highest point. The third and fourth sutures are passed on either side halfway between the first two. The other sutures are passed in the same way, the needle going from within the gut and piercing all the coats, then back through the peritoneal, muscular and mucous coats to the interior of the other segment of bowel. The ends are then tied in the bowel. This process is continued until all the sutures but one or two are passed. For the latter, Lembert sutures are substitued. If the sutures have been properly inserted and tied, the peritoneum will now be turned in and the stitches hidden.

The operation having been completed, and the dressings applied, the patient is placed between the folds of a warm blanket and only a little warm water allowed by mouth for the first twelve or eighteen hours. Then a few drachm doses of liquid peptonoids are given at intervals of twenty minutes, and, if well borne, peptonized milk is added. The tendency is to give too small quantities of food at too frequent intervals. The bowels are moved on the third or fourth day by small doses of calomel and soda.

In closing, Dr. Wiggin laid great emphasis on the fact that the prognosis in this class of cases depends more upon the promptness with which surgical treatment is instituted than upon any other factor.

Dr. H. O. Marcy, of Boston, who was present as a guest, said that the *résumé* on intestinal obstruction that had now been presented was of the utmost value, and that, while the various papers necessarily overlapped each other to a certain extent, the collection as a whole, when published in the transactions of the Association, would prove a very important addition to the reference library. As he looked back over the years that were gone, he could not but congratulate the profession on the extraordinary advance which had been made in this field of medicine. Still, it was one which was not yet sufficiently understood, and as we looked into the future he felt certain in some respects our views would be further modified. The importance of operating early had been emphasized by all the writers. Certainly the general practitioner waiting, Micawber-like, for something to turn up, was not an object of admiration. If he felt himself incompetent to deal with a case of the kind in question he would lose nothing in either his self-respect or the esteem of his *clientèle* by calling in consultation one more skilled than himself in this particular field. By this division of our responsibility only good could result.

As to the matter of technique he was sure that we had still a great deal to learn. The results had been good, but none of us were as yet quite satisfied. In speaking of enterectomy Dr. Marcy explained his own method of operating and the use of the double continuous suture. He said that it was of the utmost importance to secure a smooth peritoneal surface, and that he should like to emphasize the thorough reconstruction of the peritoneal plain. There were almost always some little uneven points left after operating, and no matter how small or how multiple these were, it was the surgeon's duty to carefully attend to them all. If such sources of irritation were allowed to remain they were liable to give rise to adhesions and to possible further obstruction of the bowels. In closing the abdomen he had long ago adopted the buried subcuticular suture, and he had now used it in some 1,800 laparotomies. There was nothing to cut, and the remaining cicatrix was reduced to the minimum.

The Philadelphia Polyclinic, now published by the Philadelphia Polyclinic and College for Graduates in Medicine, will be discontinued on January 1, 1899. Unexpired subscriptions will be completed by the *Philadelphia Medical Journal.*

Recent Literature.

A Manual of Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D., Clinical Professor of Surgery, Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, etc. 911 pages and 386 illustrations. Philadelphia: W. B. Saunders. 1898.

This second edition, like the first, which was published in 1894, is an attractive, well-arranged book. The first edition was popular because it was free from data and hypothesis, which would cause doubt and uncertainty in the mind of the reader as to the correctness or efficiency of the methods, theories or treatment found on its pages. It was a delightfully positive type of book. This was due to the omission of everything obsolete, unessential or doubtful, and retaining only what was in common use. In the new edition no attempt has been made to alter its character or change its purpose, but it has practically been rewritten. Many new articles appear, and most of the former ones have been enlarged, condensed or otherwise altered. Among the many changes one notes the increased size of the volume, its improved appearance and more durable binding. Also the changes in the sections describing the surgery of the liver, gall-bladder, spleen, pancreas, the female breast, wounds from modern projectiles, electrical injuries and skiagraphy. Among the new operations one finds resection of the Gasserian ganglion. gastrostomy, thoracoplasty, enterorraphy, resection of the shoulder, amputation of the hip, and others.

The book is a manual of surgery. One will not find, as a rule, much detail, but if the reader remembers that the subject of surgery is not exhausted when he has read this volume (as its positive character might lead him to believe), and supplements it by reference to more extended or elaborate articles when studying a given subject, he will find it of value to him. The more experienced student and practitioner of surgery in looking over its pages will find many things concerning which his opinion will differ from the writer's. To him it will be a convenient summary, though perhaps at times a somewhat incomplete one, and at all times an interesting review of his especial work.

Laboratory Work in Physiological Chemistry. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second Edition. Ann Arbor: George Wahr. 1898.

This work is exclusively a laboratory manual. It contains a list and description of the laboratory experiments which must be performed by the student, in order to attain to a practical understanding of the subject-matter of physiological chemistry which he is to receive in his lectures.

Just enough general descriptive matter is inserted to enable the experimenter to understand the wherefore and the bearing of his experiments.

Few of the general works upon physiological chemistry contain explicit directions for laboratory exercises. And in those which do, the matter is so scattered and intermingled in the voluminous text, that is difficult to use it for a laboratory course.

There is therefore a need for books of this class. And this need the author has fulfilled, on the whole, very satisfactorily, in this book. The fault of the book is, it seems to us, that in several instances the author has in his descriptive portions condensed too much; that is, he has failed to insert enough of the matter of physiological and pathological chemistry in connection with his sets of experiments to enable the student to understand the direct or indirect bearing of these experiments upon the study of medicine. The ordinary student is not performing the tests for albuminates, albumoses and peptones in order that he may become for all events a practical physiological chemist, but that he may the more completely understand the process of gastric or intestinal digestion. And he should so understand it.

The omissions of this nature in the book could have been remedied without greatly enlarging the text. They are, however, comparatively few in number.

An Epitome of Human Histology. By A. W. Weysse. 8vo, pp. 90. New York: Longmans, Green & Co. 1898.

We have to notice two additions to the already long list of text-books of histology for students' use. The first of these, "An Epitome of Human Histology," by Dr. Weysse, which is published by Longmans, Green & Co., is a work which is primarily designed for a general review of the subject, and is compiled essentially on a system of very elaborate and full lecture notes, so that a student who has once mastered the subject can go back to this work and find an extremely clear and succinct summary of the whole subject of histology. The work is very well printed, but it is without illustrations. The author's synopsis is both intelligent and accurate, so that his summary includes all the facts which are of real importance to the student. The special and somewhat unusual purpose for which the work is designed is well achieved, but the volume is not calculated to replace the text-book of the old type.

Students' Histology. By W. N. Miller. Revised by H. U. Williams. Third Edition, 8vo, pp. 259. New York: Wm. Wood & Co. 1898.

Dr. Miller's Students' Histology, now revised by Dr. Herbert U. Williams, Professor of Pathology at the University of Buffalo, appears to us not to be a work to be recommended. Its treatment of the histological topics is on the whole inadequate, and the text contains a very large number of errors, while the illustrations, with few exceptions, are of a crude character and very coarsely executed. Neither the author nor the present editor appears to have kept up with the progress of science. Thus we find on page 49 that the nucleolus is put down as a typical constituent of the cell, although a nucleolus is a body which occurs only exceptionally and in few kinds of cells, and nucleoli are not bodies of a specific kind, but of many different kinds. The occurrence of chromatin as a typical constituent of the cell is not there mentioned. Again, on page 53 we find unstriated muscle classified with striated and cardiac muscles, although they are of different origin. The classification of epithelium is inaccurate, and there is no excuse for putting down endothelium as something distinct from epithelium. In Figure 66, representing a section of the epidermis, the outlines of the cells are drawn like overlapping tiles, and in no wise to correspond with the true shape of the cells; and the basal layer of cells is drawn in a purely imaginary manner, while many of the nuclei are pictured without reference to their actual proportionate size. Defective drawing seems to be the main characteristics of the original figures. In Figure 79, representing the mesenterial gland, there is little to recall the typical structure of such an organ. The inward prolongations of the capsule are grossly exaggerated, and the characteristic rounded form of the so-called nodules of the cortex is not suggested in any way. Equally unlike the actual structure is Figure 103, of the peptic gland, which is also full of inaccuracy. As an example of erroneous statement, we point out, that on page 163 it is stated that the prolongations of Glisson's capsule divide the entire structure of the liver into compartments, or lobules. This statement may be true of the pig, but it is untrue of man, yet no limitation to its application is suggested. Further, on page 165 the lobules are said to consist of two capillary plexuses, one containing blood and the other the bile. This corresponds to the old conception, but we now know that the plexus of gall capillaries is more apparent than real, and that the network described by earlier authors was the result of erroneous interpretation. In short, a work so replete with errors seems to us to call for no commendation.

A Manual of Bacteriology, Clinical and Applied. With an appendix on bacterial remedies. By Richard T. Hewlett, M.D., etc., Assistant in the bacteriological department, British Institute of Preventive Medicine. Philadelphia: P. Blakiston, Son & Co. 1898.

This book is better than the average of publications on the same subject. It is chiefly concerned with those portions of the field of bacteriology which are of importance to clinical medicine and hygiene. It is well printed and bound. There are a number of reproductions of photo-micrographs of bacteria. Some are fairly good, others are bad. The book as a whole does not require any more comment than to say that its field is better covered by other books. It does not fill a long-felt want.

A Laboratory Text-book of Pathology, for the use of Students and Practitioners of Medicine. By Horace J. Whitacre, B.S., M.D., Demonstrator of Pathology in the Medical College of Ohio (University of Cincinnati). Philadelphia: P. Blakiston, Son & Co. 1897.

The aim of this small book, as stated in its preface, is "to furnish the student with a text-book that he can have beside his microscope in the laboratory. The author has made a laudable attempt at illustrations from numerous original photo-micrographs. A few of those are not as bad as are the great majority of them, which show a lamentable lack of skill in the art of photo-micrography and are practically useless.

The book may be of value to the personal pupils of the author, but we see no reason why it should be addressed to a wider circle of readers.

Atlas and Essentials of Pathological Anatomy. By Dr. O. Bollinger, Obermedicinalrath and Professor. Two volumes. New York: William Wood & Co. 1898.

These volumes consist of a considerable number of colored plates with descriptive matter, and also of a short presentation of the subject of special pathological anatomy.

The plates, which are the most prominent feature of the volumes, are for the most part satisfactory. The work will probably be of use to students and beginners in pathological anatomy and may be recommended to such. It is not, however, to be regarded as an important publication.

In looking over the volumes, we have been surprised to note the absence of any mention of glomerulo-nephritis among the pathological conditions of the kidney, although it is very probable that one or two of the plates represent the well-known condition under other names.

The Principles of Bacteriology. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., Professor of Hygiene, University of Pennsylvania. Fourth edition. Enlarged and thoroughly revised. Philadelphia and New York: Lea Bros. & Co. 1897.

The appearance of a fourth edition of this book attests its deserved popularity. There has been some revision and some insertion of new matter, including illustrated descriptions of the bacilli of influenza and of bubonic plague, and of the micrococcus of gonorrhea. The book is the best introduction to the study of bacteriology which we know, and it can be thoroughly recommended to students and others interested in the subject. An examination, however, of the present edition reveals some faults which we think should be remedied.

The usefulness of the book as a laboratory manual would be greatly increased by the larger employment of different sizes of type, and by making certain subdivisions and paragraphs more striking to the eye. As the book is now printed, important points in methods or formulæ are often buried in a beautiful and homogeneously printed text, in which they may often be found only with some difficulty.

The illustrations in many instances are good, but the colored figures of bacteria, made for the most part from colored drawings, are nearly all unsatisfactory. Good photo-micrographs would have been much better, for it has been clearly shown that bacteria are admirably adapted for photo-micrography. The figures of influenza bacilli and of streptococci may be mentioned as especially defective and misleading.

The description of the histological lesions of tuberculosis and of glanders is far from clear and needs revision.

Finally, we miss among the bacteria described the bacillus of Friedländer, or the *bacillus mucosus capsulatus*, an organism which plays a fairly important rôle in human pathology. While it is true that the book is not designed to consider a large number of species of bacteria, we think that this bacillus might well be included, if such a comparatively unimportant bacterium as the micrococcus tetragenus is described.

The Physician's Visiting List (Lindsay and Blakiston's) for 1899. Forty-eighth year of its publication. Philadelphia: P. Blakiston, Son & Co. 1898.

This little visiting list, which is one of the best and most compactly arranged and contains a most judicious collection of reference tables, will continue in this as in former years to maintain its position and popularity.

The simple, but strong and useful cover, in which useless ornamentation is conspicuous by its absence, enables the book to be carried in the pocket a year without wearing out.

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THE MEDICAL DEPARTMENT OF THE ARMY AND THE SPANISH WAR.

The report of the Surgeon-General of the United States Army to the Secretary of War on the work of the medical department during the Spanish War is naturally of great interest. As an official document it is admirably drawn and very successfully places the blame for the breakdown in the medical department on the exigencies of war and on those who were unfortunate enough to be in subordinate positions. This is in a way just, and yet it is extremely unsatisfactory.

The surgeon-general states that the number of medical officers (one hundred and ninety-two) allowed by law to the army is inadequate in time of peace. Naturally this seriously interfered with the medical department of the army successfully meeting a rush campaign. But this inadequacy of the medical corps is not a thing of very recent date. The present surgeon-general must have been aware of it for some years. In some quarters it was appreciated before he was placed at the head of the department. It is true that Congress, which hurried the country into the Spanish War and hurried our troops into Cuba, has, in this comparatively small but important matter, out of its extreme regard for the United States Treasury and the taxpayer, stood in the way of the enlargement and reorganization of the medical corps. A bill for its reorganization was introduced in the Senate on the twenty-eighth of last March, but to little purpose. Surgeon-General Sternberg was a promoter of this effort. But it is not unfair to say that a very forceful and very earnest official, thoroughly alive to the situation and the grave importance of the subject, would have found at an even earlier date some way to make himself heard, even had it been necessary to appeal to the profession at large throughout the country for its support and influence. A reference to the first and fourth paragraphs on page 4 of the last report of the Surgeon-General of the Navy is of interest in this connection.

All the way through the report can be seen the work of a rush service; a lack of intelligent preparation prior to the declaration of war. In fact, it has been jocosely said, that "we had a most excellent medical department of the United States Army, and that it was conducted beautifully until war broke out." As an example of the lack of preparation and forethought and proper appreciation of the duties of the surgeon-general is the quotation: "A field-supply table was prepared and approved by the Secretary of War on May 9, 1898." It was intended to provide for the needs of commands in *active service* where only a limited supply of articles could be carried, owing to the necessity of restricting transportation, and it should have been carefully prepared months before war was declared. This suggests that the principle, "In time of peace prepare for war," had never been seriously considered in our surgeon-general's office.

It is well known that the present Surgeon-General of the United States has done a great deal to improve the position of medical officers of the United States Army. Exceptional opportunities have been afforded them in the centres of medical instruction in the country for improvement in their scientific work. No one more thoroughly appreciates the necessity for the training of medical men in laboratory methods than we do, but the primary object of a medical department of an army is to keep troops well during a campaign, in order that successful military operations can be carried out. The treatment of casualties, the curing of disease, are secondary to military exigencies. An army is composed of well men and it is the duty of the medical department to keep them well.

There can be little doubt but that General Sternberg strained every nerve and made the most extraordinary efforts to meet the exigency, but it was impossible to do so. When a man who had reached the surgeon-generalship through political methods, whose life training had been that of a laboratory man, whose life had been practically devoted to research work in bacteriology — and good work it has been — is brought suddenly face to face with the problem of the nation in war, it is not surprising that he should have found it impossible to meet the condition.

Emergencies are rarely successfully met, unless they have been carefully thought out beforehand, and this, it seems to us, is one of the reasons why the medical department broke down. In fact, in thinking of Surgeon-General Sternberg, it is remarkable that he did as well. At once a railroad ambulance-train was equipped, hospital ships were fitted out, circulars as to the sanitation of troops were issued, and everything that a man could have done in an emergency, who apparently had not considered that an emergency would arise, was done.

There is one point which is peculiarly interesting in this report, and that is a paragraph referring to medical and hospital supplies. This describes how the depots were equipped, where and when established, and at the end states: "The distance of San Francisco from the centre of the government was so considerable that the officer in charge of that depot was necessarily given large discretion in the purchase of supplies and the expenditure of funds." In any competent organization, officers in charge are always given large discretionary powers, and are held responsible for the exercise of those powers. We suspect that the fact that San Francisco, as a centre of distribution, was not dependent upon the detail orders from the central office is the reason why the Manila campaign, from a medical standpoint, did not break down.

However, the report, as a whole, is unsatisfactory, in that it fails to appreciate the real cause of the just and unjust criticism that has been showered upon the department. It has always been more or less the custom for commanding officers to throw upon their medical department a full share of blame in case of disaster. In fact, the management of a medical department is, perhaps, the most difficult of any of the departments of an army. In the quartermaster's and commissary's departments it can be foreseen, and is known, that a certain amount of clothing and food will be needed at a specified point and at a definite time, but in the medical department the very exigencies of a military service make the question of supplies an unknown quantity. Take, for example, the problem of rendering first aid to wounded. It cannot be foretold where in a line of battle the heaviest casualties will occur. The combatants are being pressed forward, or retired at points instantaneously decided upon, and a medical department is asked to meet these extraordinary emergencies, and to treat the casualties in an efficient manner. In fact, a moment's thought will bring home the truth that to successfully conduct a medical department requires a very high order of military ability. In an article in the *British Medical Journal* of November 12, 1898, page 1517, entitled "The Seamy Side of War," it is stated that at the battle of Atbara, where three thousand men were engaged, there was a force of one principal medical officer, six surgeons and about sixteen orderlies. Protests were made repeatedly, but were unheeded. The Sirdar, owing to a desire to save expense and to economize transport, had declined to forward a sufficient number of medical orderlies. At this battle there were one hundred and twenty casualties. The story is one so often repeated in war — the arrival of the medical staff exhausted, doing their best, though shorthanded, until surgeons and orderlies were absolutely overworked.

Again, on the second advance to Omdurman the home government had insisted, and rightly insisted, regardless of all opposition, that such defects as had occurred at Atbara should not occur again. And this time everything was prepared. There were three completely equipped hospital barges, with medical officers and orderlies and every comfort on board; but these three barges with all their staff had, for some inexplicable reason, been ordered across the river. There was no steamer available to bring them back. All preparation and forethought were thus completely thwarted.

In short, it may be said that war demands preparation and forethought and administration; that it requires extraordinary skill in the management of its quartermaster's, commissary's and medical departments. This extraordinary skill is from the very nature of the service in time of peace not available. The men naturally best fitted to do this work will not remain in the army for twenty years in peace. They are active and not willing to wait for an emergency to arise. They make their emergencies. For this reason it seems to us that it will always be necessary in time of war to call in experts for service and it would be preferable to have these experts selected and given some honorary official title or recognition before the exigency arises, in order that they may with due care and deliberation devote thought to prospective problems that may arise.

A commission of a dozen or more men, leaders in the profession, experts in special branches — in hygiene, sanitation, medicine, surgery, pathology and bacteriology — might be selected throughout the country and made an advisory body.

We believe that it is necessary to reorganize the surgeon-general's office in conjunction with essentially all the departments of the United States Army. They should be interdependent and not independent and should be controlled by a general of the army. The Surgeon-General of the United States should be a man who is known to possess exceptional qualities as an administrator. It is a position requiring executive ability and not especial scientific attainments. The office itself should be organized under heads who should be held responsible for the work done under them, but should not be interfered with in that work. In fact, it should not be necessary for them to ask the approval of the surgeon-general for their minor acts, but they should be held to a strict responsibility for the general conduct of their sub-departments.

We have heard it said by a competent judge who saw something of the medical service during the war, that it seemed to him the regular medical officers were hampered because tied up with red tape which they did not know how to cut, and the volunteer and contract surgeons, however competent, were inefficient because they did not know how to tie this same red tape.

While we have expressed ourselves frankly and strongly as to the defects in the administration and organization of the surgeon-general's office, yet in simple justice we believe that it should be said that the medical department of the United States Army did some remarkably effective work during the Spanish War. In making this statement, however, we have in mind the unreadiness of the surgeon-general's office for war. Above all, we have in mind the fact that the Congress of the United States passed a bill organizing a volunteer army of three hundred thousand men without providing any medical staff for the manning of division or base hospitals except one principal medical officer for each corps, division and brigade, and without making provision for the enlistment of men for the specific duty of service for the hospital corps — a most vital defect. This extraordinary omission is, we think, one of the most serious defects in the preparation for the war, and if the responsibility for it could be placed on the proper shoulders those shoulders would bear a heavy burden. We have in mind the wicked reduction of the age limit from twenty to eighteen years; the proximity of camps to large centres of population; the unreasonableness of Congress in precipitating war at the season of the year that it did. Having in mind these and other things, it is no more than justice to say that the efforts of the surgeon-general and his medical officers to meet the terrors of war were extraordinary and challenge admiration. They failed, and from their failure should be learned the lesson of reorganization.

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HOSPITAL ACCOMMODATION FOR STUDENTS OF HARVARD COLLEGE.

The need of hospital accommodation for students of Harvard College, in a building under control of the corporation, has been met by the gift of Mr. James Stillman, of New York, of the sum of $50,000 for this purpose, and, in addition, the further contribution of the sum of $2,500 a year, for four years, toward the running expenses of the projected infirmary. This benefaction, which is immediately applicable, and is sufficient in amount to cover the cost of land and of a suitable building, is made without other conditions than that the gift shall be devoted to the carrying out of the purpose intended, and that the building shall bear the name of the donor.

The land, already secured, is situated between the land of the Cambridge Hospital and that of the new Home for Aged People, and has a frontage of 100 feet on Mt. Auburn Street, a depth of 280 feet, and abuts in the rear on the new Metropolitan Parkway. This location is especially advantageous, because of its proximity to the Cambridge Hospital and the Home for Aged People, both of which institutions have open grounds, its southern exposure and its abutment on the Parkway, which will secure it from the intrusion of other buildings in the rear.

The plans under consideration provide a brick building of firepoof interior construction, with single rooms and small wards for patients, and, in addition to the usual provisions of a hospital, a sun-room and reading-room for convalescents, guest-rooms for the parents of sick students, and a diet kitchen, from which suitably prepared food may be sent to out-patients in the college buildings.

The need of such hospital accommodation for students at Cambridge has been long felt and recognized. It is largely due to the persistent activity of Dr.

Clarence J. Blake that the want has been brought to the personal attention of those who have shown themselves at once able and willing to contribute to its relief.

MEDICAL NOTES.

A Journal Consolidation. — The *Canadian Medical Review* and the *Canadian Practitioner* have been consolidated, the new periodical being called the *Canadian Practitioner and Medical Review*.

Medical Mayors. — It is reported among the mayors elected in the principal cities and towns of England and Wales the second Wednesday of November there were no less than nineteen medical men.

Tight Waists. — We look upon it as a barbarous custom for Chinese women to constrict their feet. Li Hung Chang thinks it more barbarous for Americans to constrict their necks and waists and the old man is right, for there are no vital organs in the feet. — *Annals of Hygiene.*

A Monument to Dr. Müller. — It is proposed to erect a monument to Dr. Müller, whose devotion in the case of Barisch, the laboratory attendant whose carelessness started the recent little epidemic in Vienna, resulted fatally to himself. Dr. Müller was an earnest student of the disease, having carried on extensive studies in India, and had attained eminence as an authority.

Explosion on the "Bay State." — An explosion which took place in the ice-plant of the hospital ship *Bay State*, recently sold by the Massachusetts Volunteer Aid Association to the United States Government, while lying in New York Harbor, on December 6th, resulted in the death of one man and the injury of fifteen, who were employed in cleaning out the ammonia coils of the plant. The injured men were treated on the hospital ship *Relief*, which was lying near by.

Successful Laparotomy for Gun-Shot Wound of the Abdomen. — Batchelor reports a case in which a laparotomy for gun-shot wound of the abdomen, involving suture of nine perforations of the intestine, three of the bladder, and one of the rectum, was successfully performed by him. He was fortunate in being able to operate early, as the patient, a boy of nine, was brought to the Charity Hospital, New Orleans, where he was house-surgeon, within thirty-five minutes after the wound was received.

Three Abdominal Sections within a Fortnight. — The *Medical Press* reports the case of a patient upon whom Mr. H. Allingham performed a laparotomy for salpingitis, who had to have the abdomen reopened four days after the operation, and again one week later. Both times the operation was demanded on account of kinking of the intestine, due to adhesion to an omental stump. On the last occasion, Mr. Allingham fixed the stump in the upper angle of the wound, and the patient recovered without incident.

A Bullet in the Heart for Thirty-Seven Years. — Dr. O. B. Beer reports in the Cincinnati *Lancet-Clinic*, the case of a man who was shot by bushwhackers during the Civil War, the bullet entering the left chest and passing through the left lung and into the left ventricle of the heart. Although the man was left in the field as fatally wounded, he finally recovered. His repeated asseverations that the bullet was in his heart were confirmed by an autopsy performed at his request by Drs. Beer and G. O. Brown. He died of cancer.

Premature Coroner's Verdict. — Rev. J. H. St. Clair, of Decatur, Ala., was reported dead on November 24th, and the coroner, having been informed that he had taken 15 grains of morphine, rendered a verdict of suicide by morphine poisoning. On the following day, the Rev. St. Clair, having recovered from his overdose of morphine, to which drug he is said to have been addicted, came to life, and is now reported to be in the enjoyment of good health, despite the fact of having been officially declared dead. — *Philadelphia Medical Journal.*

Nothing New under the Sun. — And now Mr. Frederick Treves, of London, refers in the *British Medical Journal* to the fact that he himself invented "Halsted's rubber bags" for intestinal suture, and published the description of them sixteen years ago in the *Medico-Chirurgical Transactions.* Finding that they were useless, he soon gave them up. The *Philadelphia Medical Journal*, in which Halsted's article was published, corrects Mr. Treves by stating that his description was published six years instead of sixteen years ago. It will be remembered that Dr. A. J. Downes has already claimed priority over Halsted in the invention of the much-discussed cylinders.

The Mad-dog Craze. — The Irish Registrar-General reports that, within the past quarter, one case of human rabies occurred in the Castleblayney Union. If we believed that it was really hydrophobia (which, in the absence of further information, we do not), we should conclude that, in a population of nearly five million of persons, each individual runs the one and a quarter millionth of a chance of acquiring hydrophobia in Ireland in the course of a year. The expectation of death from an ordinary cold in the head is, probably, at least twenty times that of death from hydrophobia. And yet we have a special Act of Parliament and a sheaf of Orders in Council to protect us from rabies. What a world we live in! — *Medical Press and Circular.*

An Electric Motor for Bowels. — Dr. Herschell publishes in a recent number of the *Clinical Review* an article on constipation, in which he advocates, among other things, treatment by vibration. He figures his vibrator, which resembles a policeman's club, and an electric motor to run it, which looks powerful enough to "move" the bowels or anything else. Bowels which did not move when their owner saw a physician about to employ such violent measures must be impassive indeed. From the appearance of the instrument, the bowels must feel as if they were being coerced by a pile driver — a circumstance which the author of the treatment has undoubtedly foreseen would render his machine especially valuable in those cases which are complicated with hemorrhoids. Jalap and elaterin can now hide their diminished heads before this new personification of force in therapeutics, and the compound cathartic pill and "cannon ball" be piled up in little pyramids in the therapeutic arsenal, among the gear we used to use before the Spanish War had shown the value of rifled cannon and jacketed projectile. It is becoming a question, however, whether in the war against constipation, as well as against the armed enemies of the Anglo-Saxon race, the power of the instruments employed will not before long become so great as to make war impossible, owing to the frightful power of the instruments employed, and the impossibility of resisting their action, even temporarily, which would certainly be a disadvantage in the case of a cathartic.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, December 7, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 42, scarlet fever 27, measles 103, typhoid fever 12.

Bequests to Hospitals. — In accordance with the provisions of the will of the late Capt. J. Putnam Bradlee, of Boston, his sister, Miss Helen C. Bradlee, lately deceased, was empowered to direct the trustees of her brother's estate to pay such amounts as she might specify to charitable institutions. According to Miss Bradlee's directions, the sum of $225,000 has recently been divided among seventeen institutions. The bequests to hospitals were as follows: To the Massachusetts General Hospital, $25,000; to the Massachusetts Homeopathic Hospital, $25,000; to the Massachusetts Charitable Eye and Ear Infirmary, $20,000; to the Free Hospital for Women, $20,000; to the New England Hospital for Women and Children, $20,000; to the Hospital Cottages for Children at Baldwinville, Mass., $10,000; to Sharon Sanitarium, $2,000.

By the will of the late Josiah B. Thomas, of Peabody, Mass., recently filed for probate, the sum of $50,000 was bequeathed to the town of Peabody for a hospital.

Appointments of Medical Examiners. — Governor Wolcott has appointed William L. Johnson, of Uxbridge, Medical Examiner of the Seventh Worcester District, vice G. E. Bullard resigned. Dr. James H. Knowles, of Gloucester, and Dr. Frederick S. Cate, of Provincetown, have been appointed Assistant Medical Examiners.

NEW YORK.

The New Hebrew Infant Asylum. — The new home of the Hebrew Infant Asylum, at 163d Street and Eagle Avenue, was formally dedicated on November 20th, and among those who made addresses were Commissioner of Charities Kelle and William Rhinelander Stewart, of the State Board of Charities. The main building is a four-story structure of colonial design, with accommodations for two hundred inmates, and on the grounds adjoining are an isolating pavilion and the hospital for contagious diseases.

Death of Dr. Atwood. — Dr. J. Freeman Atwood, a prominent physician of Brooklyn, died at his home in that borough on November 21st, from the after-effects of typhoid fever. He was born in New Jersey, in 1845, and was graduated from the College of Physicians and Surgeons, New York, with high honors, in 1870. He had been President of the Kings County Medical Society.

Bequests to Medical Charities. — By the will of David Leahy, who died recently in Brooklyn, more than one hundred thousand dollars is left to various charities. Among the bequests are the following: St. Mary's Hospital, Brooklyn, $10,000; St. Mary's Maternity, Brooklyn, $7,500; St. John's Guild, Manhattan, $5,000; Home for Consumptives, Brooklyn, $5,000; Brooklyn Bureau of Charities, $5,000.

Hospitals for Contagious Diseases. — The utility of a well-appointed hospital for contagious diseases in connection with orphan asylums and other similar institutions is well shown in the result of an outbreak of measles occurring at the large Hebrew Orphan Asylum at Amsterdam Ave. and 136th Street. The first case occurred on November 5th, and altogether about fifteen children were isolated in the hospital, which is located on the grounds and two hundred feet from the main building. The asylum authorities now report that all the cases have practically recovered, and, as no new cases have developed for a considerable period, it is believed that the outbreak has been entirely checked.

Self-Supporting Boys. — At the second annual meeting of the Industrial Colony Association, which was held on November 29th, stereopticon views were shown illustrating how boys taken from the slums of New York conduct a government of their own on a farm at Gardner, Ulster County, and an interesting sketch of the methods of the Association and its work during the past year was given. Each boy is required to work and be self-supporting, and an industrious lad, it was shown, can easily earn enough money to leave him a small weekly surplus after paying his necessary expenses. The report of the treasurer stated that the total receipts of the farm colony for the year were $3,117, which is a slight excess over the expenditures.

Dr. Hong Bad. — Dr. Hong Bad, a Chinese physician, educated at Canton, who for the past sixteen years has had a thriving practice among his fellow-countrymen in the Mott Street colony, was one of the victims of the severe storm of November 26th. Having been taken with a chill, followed by high fever, and having tried in vain one after another of the celestial remedies with which he was accustomed to treat his patients, he finally determined to entrust himself to the unhallowed hands of American practitioners, and made his way to Bellevue Hospital. There, after a comfortable night's rest, during which his most distressing symptoms were relieved, he did not hesitate to confess that "Melican doctor alle samee heap good."

A Centenarian. — Mrs. Bridget Fitzpatrick died at her home at New Brighton, Borough of Richmond, on November 28th, in her one hundred and first year. She was born in Ireland on Christmas Day, 1797, and came to this country over fifty years ago. She was always in good health until three weeks before her death, when she had a severe fall.

Dr. James A. Moore. — Dr. James Alexander Moore, a physician well known in New York, died at Helena, Montana, on November 29th, at the age of fifty-three. He was born at St. Croix, Danish West Indies, and was graduated from Yale College in the class of 1867. He received the degree of M.D. from the University of the City of New York. A few years ago he removed to Helena, where he established a successful practice and was highly esteemed.

Miscellany.

THE HUMAN ALIMENTARY SYSTEM.

In preparing an address on "Some Rudiments of Intestinal Surgery," delivered before the Midland Medical Society at Birmingham,[1] Mr. Frederick Treves has made certain remarks upon the human alimentary system, its present limitations, and possible future reversionary evolution, which are so apposite and so happily expressed that we are glad to reproduce them for the benefit of our readers. Discussing his first topic, "Signs of Degeneracy in the Human Alimentary System," Mr. Treves says:

> Any one who still persists, on such an occasion as the present, in giving exclusive prominence to abdominal surgery cannot but be reminded of the fable of Æsop which relates to the "Belly and the Members." It will be recollected that in that parable the members complained that their interests were not duly recognized, and that the pompous and overbearing attitude assumed by the belly was inconsistent with its intrinsic importance and with the rights and privileges which the members claimed as portions of the body politic. So far as the corporation of medicine is concerned it may be argued that enough for the present has been said about the abdomen and its concerns, and that it is time that we returned to the needs of the extremities.
>
> In begging, however, that you will allow me to limit my remarks this evening to that perhaps over-exalted subject, abdominal surgery, I may urge that the extravisceral parts of the body have had an almost exclusive monopoly of surgical attention for many centuries, and that Æsop, who was ignorant of even the fashionable exploratory incision, decided his fictitious quarrel in favor of the belly. I would wish to deal solely with so much of this great subject as concerns the intestines and with such details in that department as may be of some present interest.
>
> As a preliminary and introductory matter I may assume that all surgeons who have concerned themselves with intestinal surgery must be growing sceptical in regard to the alimentary canal of man and its fitness for its reputed functions, and must be in doubt if it deserves the encomiums which have been lavished upon it as an efficient work of Nature.
>
> The actual body of man seems to have changed but little since his first appearance on the earth, but the environment of the man has changed in the mean time to an extent beyond all reasonable conception. Now it is a question if the alimentary canal has adapted itself to this latter change. It is a question if the human digestive organs have progressed with the times, and have advanced with that progress of events which has raised man from a clever brute to a cultured Epicurean. It is a question, indeed, if our stomach and intestines are — to use a common expression — quite up to date, or are quite adapted to the enlightened individuals they serve. The naked cave man scrambled out his life thousands of years ago, and was contemporary with the long extinct cave bear and cave hyena, yet his skeleton differs in no essential from the skeleton of the modern dandy who, arrayed as Solomon in all his glory, suns himself to-day in Rotten Row. A nineteenth-century public dinner would probably have confined the cave man to his cave for many sorrowful and painful days, and if the modern alderman had to dine on badly-cooked hyena meat torn from the bone by his own incisor teeth, he would possibly find himself in a few days upon the operating-table. Yet the same alimentary canal has had to do duty for the two specimens of humanity and for the two types of feast. It is no matter of wonder that it has failed somewhat in the Herculean effort of adaptation.
>
> That it has not wholly succeeded is evident by many signs. If the cave man could return to earth, and could travel by rail from London to Birmingham, he would notice that almost every field by the way had erected in it an isolated wooden boarding on which was painted a conspicuous inscription. From a certain repetition of these inscriptions he might gather that the painted words were incentives to religious fervor, or that they were patriotic expressions calling the traveller to deeds of heroism and virtue. He would be pained to learn that they were merely advertisements of aperient pills. It would appear, indeed, that these common objects by the traveller's way show that the cry of the people is not so much for light and leading as for laxatives. It is a curious comment upon the unfitness of the alimentary canal for its simplest duties, that the animal, the vegetable, and the mineral kingdoms have been ransacked to provide incentives to peristaltic movement. The discovery of a new laxative would excite more public interest than the discovery of a new planet, and the habit of aperient drinking must rank in the annals of intemperance as but little less enthralling than the vice of the tippler.

[These remarks suggest the following lines from a poem by the late Dr. Holmes, published some years ago in the Journal:

Our noble Art, which countless shoals invade,
Some as a science, many as a trade!
In every column quackery has its line;
From every corner stares the doctor's sign;
From every shore the straining vessel tugs
Ill-scented balsams, stomach-turning drugs;
The keels of commerce clear the farthest surge
Lest some old beldame want her morning purge.
The seamen wanders on his venturous boat
To turn a baby's stomach inside out.
Rich were the Queen of yon hepatic isle
With half her subjects squander on their bile;
Rich were Van Buren could he pay his bills
With half his people waste in "Brandreth's Pills,"—
Or with their products fill his farmers' carts
With tare and tret for reproductive parts.]

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[1] British Medical Journal, November 5, 1898.

A further suggestion that the present type of alimentary canal is becoming obsolete is provided by the fact that in the literature of medicine a singularly prominent place is given to diseases of the stomach and intestines. The number of these maladies is legion, and in certain sections of the community dyspepsia can hardly be regarded as an abnormal condition. It is safe to say that among the so-called cultured classes one man in ten is "on a diet," and one woman in ten is "living on aperients."

As for the liver, it retains a place in our economy as a thing compounded of mystery, meddlesomeness, and inefficiency. While some patients speak of their livers with a certain amount of awe, others refer to that organ with a degree of familiarity which is almost irreverent. With many the liver is a kind of fetish which has to be humored and appeased, and no appeal to a doctor is more earnest than the prayer for "something to touch the liver." By others the liver is spoken of as if it were a piece of defective machinery, and is alluded to in terms which would be suitably applied to a motor car or a cheap watch. It is complained that the organ is always "out of order," that it "will not act," that it is perpetually in need of something to make it act, that it is "sluggish," that it is easily "upset." While the laity talk of their livers with an exactness which is based apparently upon most familiar acquaintance, the physician has not yet acquired a sufficient knowledge of that organ to enable him to define precisely even what is meant by "biliousness," or to give any reasonable scientific account of a "bilious attack." Time will probably show that the liver has played the part of a pampered charlatan, and that its reputed powers are to no little extent based upon a great physiological fraud. Wherever the truth might lie, it would appear evident that this much-physicked organ is not competent to deal with the requirements of the alimentary canal of modern man, or at least that it performs its duties in the halting manner of a worn-out machine.

THE ALIMENTARY SYSTEM OF THE FUTURE.

How things will fare with us in the future it is hard to say, but some hope of amendment is held out by the knowledge that Nature appears to be both ready and ingenious in modifying structure to meet individual requirements. One notices, for example, amongst mammals what extraordinary and probably satisfactory experiments have been tried with the cecum. The ornithorhynchus has a mere apology for a cecum, the ursidæ have no cecum at all, while many of the herbivora have ceca of immense proportions, which apparently play an essential part in digestion. The two-toed ant-eater seems to have been in doubt as to whether it should accept the mammalian cecum or content itself with the double cecal appendages of certain birds, and to prevent any inconvenience from its indecision it has provided itself with three ceca, one of the mammalian form and two of the type met with in certain birds. The vulpine phalanger has been very decided in its appreciation of the cecum, and has possessed itself of an appendage which is twice the length of its own body.

In the matter of the stomach Nature has proved to be most accommodating. The blood-sucking bat, or desmodus, living as it does on a highly-digested food which requires little more than storage, has almost solved the problem of how to live without either stomach or intestine. The fruit-eating bat, the pteropus, has turned its stomach upside down so that it might digest its food in comfort while hanging head downwards. The kangaroo has a stomach precisely like our large intestine, that is, arranged in sacculi so that its food may be packed away in small parcels, and thus not incommode the animal when taking its prodigious leaps. The ruminant stomach appears to have been the outcome of an unattractive and bulky diet on the one hand, and on the other hand of that passion for leisure and for reflection after meals which is so well marked in the common cow.

Without multiplying examples of apparent experiment and adaptation, one might be permitted to speculate as to the future form of the digestive canal of man. The human being is becoming toothless, and when it is recognized that a conspicuous function of the teeth is merely to provide material for the undoubted ingenuity of the dentist they will probably be allowed to go. Even now there are many people who appear to show no great anxiety to retain them. Recent operations in which the entire stomach has been excised without any very gross inconvenience to the patient would seem to suggest that one might possibly dispense with our present type of stomach. Our intestine is probably unnecessarily long, and the removal of considerable portions of it has done no more than add to the comfort of those individuals who have recovered from the operation. One patient of mine, who was the subject of congenital stenosis of the lower bowel, has been entirely relieved by the removal of the anus, rectum, sigmoid flexure and descending colon. The child's large intestine is in this case represented by the ascending and transverse colon only, very much to the convenience of the patient. The frequency with which the sigmoid flexure is involved in mechanical difficulties and the common occurrence of cancer in the rectum would suggest that the terminal part of the bowel is becoming effete, and may be regarded as degenerate by any pathological Max Nordau.

As a matter of simple speculation, it may be surmised that the coming man will be quite edentulous, that he will have a less enigmatical liver and no gall-bladder, and that his intestine will be considerably shortened and, it is to be hoped, considerably simplified. Extreme refinement in the selection of food materials and an exquisite cultivation of what is termed a "palate" may lead to an elongation of the esophagus and to the development of taste organs along its entire length. In the place of the present stomach it is probable that the edentulous man will develop a gizzard. A gizzard would appear to be a labor-saving organ which is to be depended upon, and which is little liable to get out of order. A gizzard would probably be a great comfort to the overworked man of business and to the seeker after pleasure who spends much of his life in Continental hotels. The ruminant stomach has many attractions. Its size would make it popular with the operating surgeon, and its leisurely method of disposing of its contents suggests intervals of calm in the rush of modern existence. A ruminant stomach in a human being, would, however, be inconsistent with the exclusively human habit of after-dinner speaking, and the actual act of rumination would no doubt be inconsistent with the amenities of the modern drawing-room.

THERAPEUTIC NOTES.

Kaczanowsky[1] employed successfully potassium permanganate in thirty-four cases of local tuberculosis; the process of application is a very simple one. The crusts having been removed as thoroughly as possible, the affected skin is powdered over with a layer of dry crystals of the permanganate, and then dressed with a thick cotton bandage; caution is necessary in protecting the nose and the eyes from the powder; pain is, however, liable to continue for some time after the application. As soon as the bandage is saturated with the secretions it is removed and the procedure repeated again.[2]

"Clinica Moderna" gives the following as a suitable pill-form for potassium iodide:

℞ Potas. iodidi . . . . ʒ ii
Sacch. lact. . . . . ʒ i
Lanolini . . . . ʒ ss
M. Et ft. pil. No. 50.

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[1] Deutsche Zeitschrift f. Chirurgie, September, 1898.

[2] Münch. med Woch. 44, 1898.

METEOROLOGICAL RECORD

For the week ending November 26th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...20	29.77	46	49	42	64	63	64	N.W.	N.W.	18	20	O.	C.	.10
M...21	30.23	44	51	37	64	60	62	N.W.	W.	9	6	C.	C.	
T...22	30.21	40	46	34	87	83	85	N.	N.E.	10	6	O.	O.	
W...23	30.07	42	49	34	91	79	85	N.	N.W.	8	8	O.	C.	
T...24	29.98	42	46	39	83	98	90	N.	N.	15	8	O.	R.	.10
F. .25	30.01	34	40	27	68	52	60	W.	W.	26	18	C.	C.	.25
S...26	30.02	28	32	23	65	66	66	W.	N.E.	6	16	O.	N.	
☞	30.04	39	45	34	75	72	73							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 26, 1898.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1084	301	8.55	18.36	1.80	2.52	1.98
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	181	29	25.34	—	—	.55	3.82
Baltimore . .	506,389	175	42	12.54	7.70	1.14	4.40	5.50
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	91	27	12.10	14.30	—	5.50	4.40
Washington .	277,000	92	27	12.96	11.88	1.08	4.32	7.56
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	43	9	9.32	13.98	—	2.33	—
Nashville . .	87,754	30	8	6.66	—	3.33	—	3.33
Charleston . .	65,165	30	7	16.66	—	16.66	—	—
Worcester . .	108,240	19	12	15.78	—	5.26	5.26	—
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	17	6	17.64	17.64	—	—	17.64
Lowell . . .	88,641	22	9	8.30	20.75	—	—	4.15
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	—	—	—	—	—	—	—
Somerville . .	61,101	21	5	9.52	19.04	—	—	4.76
Lawrence . .	57,263	22	11	12.45	8.30	4.15	—	4.15
Springfield . .	56,501	18	5	16.66	5.55	—	—	16.66
Holyoke . . .	43,424	5	0	—	20.00	—	—	—
Brockton . .	37,278	—	—	—	—	—	—	—
Salem	36,883	10	1	—	—	—	—	—
Malden . . .	34,613	—	—	—	—	—	—	—
Chelsea . . .	33,468	10	5	—	20.00	—	—	—
Haverhill . .	32,022	9	2	22.22	—	—	—	—
Gloucester . .	30,589	6	1	—	—	—	—	—
Newton . . .	29,716	9	2	11.11	—	—	11.11	—
Fitchburg . .	29,438	9	5	—	11.11	—	—	—
Taunton . . .	28,167	11	0	18.18	—	9.09	9.09	—
Everett . . .	25,338	6	1	—	—	—	—	—
Quincy . . .	23,549	7	1	—	28.56	—	—	—
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	6	1	—	16.66	—	—	—
North Adams .	20,971	5	4	20.00	—	—	—	—
Chicopee . .	17,842	3	1	—	33.33	—	—	—
Medford . . .	16,511	4	3	25.00	—	—	—	25.00
Newburyport .	14,915	4	0	—	—	—	—	—
Melrose . . .	14,032	3	0	—	—	—	—	—

Deaths reported 1,961; under five years of age 516; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 188, acute lung diseases 273, consumption 236, diphtheria and croup 61, typhoid fever 50, diarrheal diseases 32, whooping-cough 13, cerebro-spinal meningitis 12, scarlet fever 10, measles 7, erysipelas 3.

From whooping-cough New York 8, Pittsburg and Haverhill 2 each, Providence 1. From cerebro-spinal meningitis New York 6, Baltimore 2, Boston, Providence, Worcester and Somerville 1 each. From measles New York 1, Boston 3. From scarlet fever New York 5, Boston, Providence, Lowell, Lawrence and North Adams 1 each. From erysipelas New York 2, Boston 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending November 19th, the death-rate was 17.1. Deaths reported 3,672; acute diseases of the respiratory organs (London) 285, diphtheria 90, fever 84, diarrhea 61, measles 61, whooping-cough 45, scarlet fever 30.

The death-rates ranged from 8.8 in Croydon to 24.2 in Preston; Birmingham 15.9, Bradford 20.3, Cardiff 12.0, Gateshead 15.6, Hull 12.0, Leeds 16.5, Liverpool 22.6, London 16.6, Manchester 19.4, Newcastle-on-Tyne 22.4, Nottingham 16.1, Sheffield 17.8, Swansea 17.4, West Ham 13.8.

BOOKS AND PAMPHLETS RECEIVED.

Apocynum Cannabinum, "The Vegetable Trocar." By T. S. Dabney, M.D., New Orleans, La. Reprint. 1898.

A Synopsis of Surgery. By R. T. Tobin, F.R.C.S.I., Surgeon to St. Vincent's Hospital, Dublin. London: J. & A. Churchill. 1898.

Verwerthung der Röntgenstrahlen in der Geburtshülfe. Vorläufige Mittheilung von Dr. Robert Müllerheim in Berlin. Leipzig. 1898.

Doctor Therne. By H. Rider Haggard, Author of "She," "Allan Quatermain," etc. New York, London and Bombay: Longmans, Green & Co. 1898.

Some Observations of General Interest Regarding the Course and Management of Cataract. By J. H. Woodward, B.S., M.D., New York City. Reprint. 1898.

A History of Veterinary Medicine: An Address to the Students of Veterinary Medicine of Harvard University. By Charles P. Lyman, F.R.C.V.S. Cambridge. 1898.

The Treatment of Chronic Endometritis. The Surgical Treatment of Appendicitis. By F. T. Meriwether, M.D., Asheville, N. C. (U. S. A. Retired). Reprints. 1897–98.

Consumption: Cases that Should go to Colorado and Cases that Should Stay at Home. The Technique of Tonsillotomy. By Geo. L. Richards, M.D., Fall River, Mass. Reprints. 1898.

Report of a Death following Immediately an Operation for Nasopharyngeal Adenoids under Chloroform, with Remarks on Chloroform Anesthesia in this Operation. By Frank Whitehill Hinkel, A.M., M.D. Reprint. 1898.

Further Observations Regarding the Use of the Bone-Clamp in Ununited Fractures, Fractures with Malunion and Recent Fractures with a Tendency to Displacement. By Clayton Parkhill, M.D., Denver, Col. Reprint. 1898.

Some Considerations on the Pathology and Treatment of Exophthalmic Goitre. By Augustus A. Eshner, M.D., of Philadelphia, Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital, etc., Philadelphia. Reprint. 1898.

The Sexual Instinct and Its Morbid Manifestations from the Double Standpoint of Jurisprudence and Psychiatry. By Dr. B. Tarnoosky (Imperial Academy of Medicine, St. Petersburg). Translated by W. C. Costello, Ph.D., and Alfred Allinson, M.A. Paris: Charles Carrington. 1898.

Intestinal Auto-intoxication. Stomach Disturbances Caused by Hernia of the Linea Alba in the Epigastrium. Chronic Catarrh of the Stomach. Transillumination of the Stomach with Demonstration on the Person. By Chas. D. Aaron, M.D., Detroit, Mich. Reprints. 1897–98.

The Practitioner's Manual: A Condensed System of Medical Diagnosis and Treatment. By Charles Wamune Allen, M.D., Consulting Genito-Urinary Surgeon to the City (Charity) Hospital; Consulting Dermatologist to the Randall's Island Hospital, etc. New York: William Wood & Co. 1899.

A Manual of the Practice of Medicine. By Frederick Taylor, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital; Consulting Physician to the Evelina Hospital for Sick Children; Examiner in Medicine at the University of London. Fifth edition. London: J. & A. Churchill. 1898.

Acromegaly: An Essay to which was awarded the Boylston Prize of Harvard University for the year 1898. By Guy Hinsdale, A.M., M.D., Fellow of the College of Physicians of Philadelphia and of the American Academy of Medicine; Member of the American Neurological Association and the American Climatological Association, etc. Reprint. 1898. Detroit: William M. Warren. 1898.

Removal of an Angioma of the Liver by Elastic Constriction External to the Abdominal Cavity, with a Table of Fifty-nine Cases of Operation for Hepatic Tumors. The Advantages of the Trendelenburg Posture during all Operations Involving Directly or Indirectly the Cavities of the Mouth, Nose and the Trachea, with a Report of Two Cases of Epithelioma and Sarcoma of the Tonsil. The Advantages of a Permanent Abdominal Anus and of Total Closure of the Sacral End of the Rectum, in Operations for Cancer of the Rectum. By W. W. Keen, M.D., Philadelphia. Reprints. 1898.

Original Articles.

HABIT NEUROSES AS TRUE FUNCTIONAL DISEASES.

BY MORTON PRINCE, M.D.,
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I. WHAT IS A FUNCTIONAL DISEASE?

It is sometimes said that there is no such thing as a functional disease. This statement is based upon two facts: first, upon the historical fact that many diseases which at one time were called functional have been found in the light of later knowledge to be due to organic conditions, for example, neuralgia, epilepsy, angina pectoris, etc.; and, second, upon the fact that as no vital action, physiological or pathological, can occur without corresponding molecular changes in the cells of the tissues, organic alterations of some kind must underlie all pathological phenomena. To this statement it may be answered that, as to the first fact, it does not necessarily follow that because many supposed functional diseases have turned out to be organic, that, therefore, no deviation from the normal can be functional, and the argument from the second fact involves a confusion of thought as to the meaning of the term organic.

It is perfectly true that, according to the modern view of physiological activity, whether this activity be psychical or corporeal, molecular changes must occur in the organs in question, and that these molecular changes must be the antecedent or accompaniment of the functioning of the organ. For example, during thought certain but as yet unknown changes occur in the cells of the brain, probably involving a waste of tissue. Digestion involves molecular or chemical changes in the peptic cells of the stomach as an antecedent to the secretion of the gastric juice. Muscular contraction involves physical or chemical changes within its tissue.

So that from this point of view no vital phenomenon, whether it be of disease or health, can occur without a basis of organic change. But the application of this truth to the question of the nature of a functional disease involves an entire confusion of terms. This use of the term organic is very different from what is meant when we speak of organic disease. From a pathological point of view, by organic changes are meant physical changes in the tissues of a *kind* which is different from those which subserve the processes of health. The distinction is one of kind of change. This difference is plainly evident, for example, when we think of gross anatomical lesions, like ruptures of vessels, abscesses, inflammatory processes, etc. It is also not difficult to recognize the difference in kind of the organic changes in the various degenerative diseases, like tabes dorsalis, general paralysis of the insane, progressive muscular atrophy, parenchymatous degeneration of the viscera, etc., from what occurs in health. But it is not so easy to do so, though the difficulty without doubt depends upon our lack of knowledge, in another class of diseases, in which would be included exophthalmic goitre, chorea, some of the tics, writers' cramp, torticollis, some of the dyspepsias and dysmenorrheas and other visceral disturbances.

On the other hand, it is not at all clear, in fact, it may be held to be improbable that in the so-called neuroses and psychoses, such as hysteria, neurasthenia, the nervous disturbances following eye-strain, insanity of doubt, fixed ideas, or in corporeal disturbances, which would include some dyspepsias, diarrheas, so-called habit symptoms, and other departures from health in the functioning of the viscera, it is improbable, I say, that the anatomical changes are different in kind from what occur in health. At least, this is the view for which I propose to cite what appears to me to be strong confirmatory evidence. For a disease to be functional it must, strictly speaking, be a *consequence or concomitant of the same kind of physical changes which subserve the functioning of an organ in health, and be originated as a response to stimuli by the same laws which govern the functioning of the organ in health.*

That is to say, for example, in consequence of certain antecedent conditions (disease, auto-suggestion, fatigue, etc.) the organism has so adapted itself to its new relations that customary stimuli instead of awakening the usual physiological response excite unusual or so-called pathological ones (pain, spasms, palpitation, vasomotor disturbances, etc.), the physical processes being the same in either case.

A functional disease, then, may be defined as one in which the anatomical processes are similar in kind to those which occur in health, which makes use of the natural working or functioning of the system, and is the expression of normal physiological laws, but differs from the norm in that the functioning is an undesirable or a disagreeable response to the environment (or internal stimuli) instead of a desirable and agreeable one. In other words, it is a true perversion. Any conception of a functional disease than this is, to me, unthinkable. My thesis involves a series of propositions:

(1) The mode of genesis of a functional disease is education, which may be voluntary or involuntary, conscious or subconscious, physiological or pathological. Restating this: The nervous system may by a process of education be taught to respond to its environment or to internal stimuli in such a way as to generate painful sensations or undesirable motor effects.

(2) The processes involved are exactly the same in kind as are involved in normal education and due to the same laws.

(3) The painful (disagreeable, undesirable) motor and sensory and other phenomena thus developed constitute so-called disease (neuroses and psychoses).

(4) The original exciting cause of such phenomena may be organic disease, such as inflammation, traumatism, or it may be pernicious habits, strong emotions, wear and tear of life, or it may be poisons (influenza, typhoid, lead, etc.), in fact, almost any influence.

(5) The constant repetition of such causes educates the nervous system to continue this response long after the original cause has subsided.

(6) Auto-suggestion and other forms of mental influence (emotions, etc.) and external suggestion may play a prominent rôle both in the genesis and persistence of the perversion.

(7) Such perversions become habit neuroses or psychoses.

To perceive this clearly, we must examine the normal workings of the system. The following propositions may then be accepted:

(*a*) All acquirement, mental and physical, depends upon, and largely consists in, the association of nervous processes so that the excitation of one element of the process automatically excites the rest.

(*b*) Without this, education would be impossible.

(*c*) The organism tends to constantly readjust itself to its environment, so that new combinations of feelings and movements are being formed and excited by accustomed or novel stimuli, or old combinations become modified or cease from disuse.

These statements hardly need to be illustrated. The law of association of mental states is well known. Similarly all physical acquirements, whether it be simply everyday commonplace acquirements, like buttoning a coat, talking and writing, or exercises of skill, like tennis and ball playing, riding, fencing, sparring, or the accomplishments, like music-playing, all depend upon the association of very complicated nervous processes involving sensory and motor neuroses. So complicated are these nervous arrangements, and so automatic do they become, that it requires considerable attention and analysis to recognize the different sensory and motor elements involved.

Try to analyze what elements are involved in the simple act of buttoning a coat, and the small part which conscious volition plays in directing the individual steps of the process, and I think the result will be a surprise. The nervous processes involved in performing any act of skill are exceedingly highly organized and therefore to a very large extent automatic. Conscious volition is mostly limited to setting the arrangement in action and guiding it in desired directions. As bearing on pathological associations, the normal habitual associations of the viscera are instructive. Hunger and the feeling of "emptiness" of the stomach associated with a particular hour of the day (that is, bodily habits) is significant of the adaptation of the organism to its environment. Change the dinner hour, or the hour when one is accustomed to take a "bite" between meals, and these sensations become readjusted to new habits. The movement of the bowels at fixed times, the desire to urinate in association with particular acts or places and times, become similarly automatic. As I shall later point out, these last two functions may become so strongly associated with (external) elements in the environment as to become true neuroses.

(*d*) It is customary to consider normal physiological reactions as in general synonymous with agreeable or not painful reactions, and pathological physiological reactions as synonymous with disagreeable reactions. That is to say, because certain feelings (for example, pain, nausea, dizziness, palpitation) occur as a resultant of certain pathological conditions, that therefore these feelings are pathological in themselves. This confusion has tended to obscure the true nature of many functional diseases. Pain is a normal physiological reaction. Prick the skin and pain normally not pathologically results. Tickle the throat and nausea similarly follows. Place a galvanic electrode over the cranium and dizziness is excited. Arouse an emotion and palpitation, tremor and sweating are experienced. The same is true of all phenomena, which, when grouped in a particular way and associated with organic disease processes, are called symptoms. Among them may be further mentioned tickling sensations (paresthesia), vomiting, sneezing, lachrymation, photophobia, tremor, palpitation, sweating, spasms, feeling of cold (chills), heat, fatigue and a host of others. The important point for recognition is that these symptoms are the normal physiological reaction of the organism to stimuli, whether these be disease or the environment. Illustrations of pain as a physiological phenomenon are that felt in the forehead when ice is taken in the mouth, the spasm of the eyelids with its peculiar painful feelings when acids are similarly taken.

(*e*) These disagreeable phenomena are the reaction of the organism to harmful agencies, and the apparent purpose of them is to protect the individual from the action of such agencies

(*f*) Now *a priori*, if we could educate the system to respond to an ordinarily pleasant or indifferent stimulus with such unpleasant sensory and motor reactions and so associate them together that they would always occur, we would have a neurosis.

(*g*) All observation indicates that this is what does occur, and that it is frequent, constituting what I have termed an association neurosis. More familiarly it is known as a habit neurosis, or neuro-mimesis. These are true functional diseases.

(*h*) Finally it is inconceivable that normal physiological laws should be effective only so long as the resulting phenomena are agreeable and desired, and should suddenly cease when these are disagreeable and undesired. This would be equivalent to nature acting by special laws, not general laws.

II. ILLUSTRATIVE CASES.

In illustration of these principles, the following cases may be cited representing symptomatically widely differing forms of neuroses:

Case I. *Hay Fever.* — In a previous contribution[1] to this subject by the writer a case of hay fever of a functional nature occurring in the practice of Dr. John Mackenzie of Baltimore was cited. A group of similar cases has since come under my own observation.[2]

For evidence of the nervous origin of these cases I must refer to the original report. I can only mention the main points here. My case was one of five, all members of the same family, and is significant because it shows the intensity which a functional process may assume and the variety of physical effects which it may originate.

The exciting cause of the attacks, which always come on about the last of May, was anything which had an irritant action on the mucous membrane of the nose or eyelids (tobacco smoke, dust, sunlight, pollen, (smell of) flowers, glare of sunlight, etc.). The attacks come on in the following way (I quote from my notes): "A few days before the expected time she begins to feel apprehensive and nervous. She begins to wonder whether the attack is coming on or not; watches herself and frequently examines her eyes in the glass to see if they show congestion, and so on. Then, a few days later, while in this nervous condition and while exposed to one of the ordinary causes, the attack suddenly develops." The attack includes all the usual symptoms, local and general, of hay fever, inflammatory as well as nervous. Cough and asthmatic attacks follow secondarily.

The grandmother of this patient also suffered from hay fever, and was always taken ill on August 20th, waking up in the morning with the symptoms. Attempts have been made to deceive her as to the approaching date but without avail.

One brother is also taken regularly on August 20th. My patient was for three years kept free from attacks by the "mind cure." On the fourth year they returned, the original mind curist being dead. The theory which I adopted in this case was the following: The symptoms represented an association or habit neurosis, that is to say, by constant repetition, year after year from early childhood, the symptoms had become so associated or bound together into a group, that they formed a neurosis or sort of nervous mechanism which only required an excitation to set them off, as you might press a button to set working a piece of mechanical mechanism. Auto-suggestion played a part in the mechanism to this extent. The state of apprehension and expectation which the patient exhibited during the week (or more) before the attack, was equivalent to a deliberate suggestion to herself — as much as if she had said, "About May 18th, as soon as exposed to an irritant, I shall have an attack." Then it followed that when May 18th came, the irritant, dust or sunlight, necessarily excited the nervous mechanism. Previous to this date the same irritant had no effect, because the suggestion was that this was not to take place until a given date.

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[1] Association Neuroses: Journal of Nervous and Mental Diseases, May, 1891.

[2] Reported in Annals of Gynecology and Pediatry, 1895.

This is the rôle which suggestion plays under experimental conditions and when used for therapeutic purposes, and there does not seem to be good reason to doubt its efficacy in the genesis of functional disease.

This person was substantially cured by suggestion, which I think may be taken as additional proof of the diagnosis.

Phobo-neuroses. — A very curious and interesting class of cases illustrative of habit symptoms is what I have termed phobo-*neuroses* in distinction from phobo-psychoses. The clinical manifestations are various bodily symptoms, like tremor, palpitation, ataxia and vasomotor symptoms and the like, which are the normal physiological expression of the emotion of fear and self consciousness. Originally in these cases these symptoms are excited by timidity on the part of the individual; later, as a result of constant excitation, they continue, long after the fear ceases to be felt, as a sort of paradoxical emotion and always excited by the same circumstances which formerly caused the mental state of fear. They differ from the ordinary so-called "phobias," in that no imperative mental state is present. This neurosis is quite common in professional people who appear before the public, particularly musicians and singers.

A characteristic peculiarity of the association symptoms, and one to which I shall again have occasion to refer, is that they always appear in a fixed order, and the group is always made up of the same symptoms. For example, the group and order of development in one case was the following: (1) feeling of goneness and general tremor; (2) throbbing in the head; (3) palpitation; (4) perspiration; (5) general weakness.

In another case it was (1) dryness of the throat; (2) feeling like that of indigestion; (3) cold and moist hands; (4) palpitation; (5) ataxia of hands.

A second characteristic of habit neuroses is observed in these cases, namely, *the persistence of the symptoms under the influence of the mind and of associations long after the original exciting cause of them has ceased to exist.*[2]

I give briefly the first of the two cases just mentioned:

Observation II. The subject was a professional singer. When he first began to sing in public he had the usual timidity and self-consciousness, in consequence of which the various physical manifestations of fear, which later made up the neurosis, were exhibited. In the course of time, as the result of experience, he attained perfect self-possession without fear of the audience, but all the physical expression of the early emotion persisted. That is, when he tried to sing in public he suffered intensely from a feeling of goneness, tremor, throbbing in the head, palpitation, perspiration, general weakness. Practising for a concert brought on the same symptoms. He insisted stoutly that he was without any real fear or shyness. Apparently the symptoms were associated with the mere idea and act of singing. In severity they were sufficient to practically incapacitate him. He did not realize the nature of the neurosis, but thought he might have some kind of organic disease. He was cured by suggestion.[3]

Local paresthesia. All sorts of local neuroses have a pathology of this kind. It is not uncommon to find this neurosis in women as ovarian or vaginal pain and distress. In one patient of mine (Observation III) it has the form of pain in the ovarian and uterine region, which has been of several years' duration. The patient declares that this pain is exactly the same sensation and was first excited by a pessary, which for this reason she was unable to wear. After removal of the pessary the paresthesia continued. Sometimes such neuroses are excited by displacements, ruptured perineum and other organic troubles, but continue after the cure of these local diseases. The co-existence of neurasthenia or of the hysterical constitution facilitates the neurosis.

Observation III. Miss D., age about thirty, presented herself for various neurasthenic symptoms of about three years' duration. In intensity the symptoms were sufficient to incapacitate her for ordinary occupations and pastimes. Careful analysis showed plainly that her condition was a pseudo-neurasthenia of psychical origin. She was readily cured in a few weeks, with the exception of a pain in the lower left abdominal region. This persisted until its nature was recognized, or for about a year after she was otherwise well. A gynecological examination was made by Dr. C. M. Green, at my request, without discovering any ostensible cause for this symptom or anything abnormal. It transpired that the patient had received gynecological treatment about three years previously, and had worn a pessary. This pessary had caused so much pain that it was necessary to give up its use after a few times. Miss D. insisted that the pain was exactly the same in kind and location as that caused by the pessary, and, in fact, was the same pain. After a careful study of the conditions under which the pain was felt the diagnosis of habit pain was made and explained to the patient, and all active treatment abandoned, it being agreed that the matter should be ignored. Cure resulted in a few (four to six) weeks.

In another patient the uterine and ovarian pain prevented walking or any exercise, and was plainly kept alive by gynecological treatment. I think this is not infrequently the case.

Observation IV. Miss W., age twenty-three years, a hystero-neurasthenic, incapacitated by pains in head, insomnia, emotional conditions, etc., unable to take any exercise on account of uterine pain brought on thereby. Is being treated by hot douches, morning and night.

Analysis shows the uterine pain to be pure habit pain, kept alive by faulty ideation. Local treatment forbidden, nature of pain explained, and patient directed to take exercise. Pain disappeared rapidly in course of a week or two. Apprehension played a prominent part in the excitation of this pain.

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[2] It is interesting to note that Nelson probably suffered from a habit neurosis, as a result of the anxiety and strain that he underwent during one of his services in the Mediterranean. "Do not fret at anything," he told his friend Troubridge; "I wish I never had, but my return to Syracuse in 1798 broke my heart, which on any extraordinary anxiety now shows itself, be that feeling pain or pleasure. On the 18th I had near died with the swelling of some of the vessels of the heart. More people, perhaps, die of broken hearts than we are aware of." (Mahan's "Life of Nelson," vol. i, p. 341.)

[3] This case will be found more fully described in a paper on "Fear Neuroses," to be published in a later number of the Journal.

An instructive example of the neurosis in another region of the body is the following:

OBSERVATION V. Mrs. B., age thirty-two years, in the course of an attack of grippe, in 1896, suffered from a painful feeling of pressure in the back of head (imitated by my pressing firmly with my thumb on the back of the neck) and a queer feeling in the spine running up to the head. After recovery from the grippe this paresthesia continued to this date (1898). It comes on in attacks lasting a minute or two. In addition to the feeling of pressure, the neck feels stiff, as if she could not turn it to the right. In the attacks her husband notices that she holds her head stiffly and does not turn it when spoken to. In the intervals she is free from symptoms, but in the attacks she actually can turn her head, as demonstrated during the conversation when she was induced to use will power. But she seemed to have an inhibition of will at such times.

The peculiarity of the neurosis was that it came on exclusively under certain conditions, namely, when at table during meals, and in society, but not under other conditions which physiologically were the same.

She had been obliged to give up going to church, to the theatre and social entertainments, nevertheless, she could go to card parties. In other words, she could sit at table and be with people, provided she played cards, but could not sit at table for the purpose of eating her meals. The attacks alarmed her. She did not give the impression of an hysterical, nervous or excitable person, but was self-contained and natural. She was, however (what I am inclined to think an element of importance), self-willed, unyielding in opinion, and apprehensive as to the gravity of the trouble. This apprehension I found it impossible to eliminate from her mind. It became practically an imperative idea. She became, as is common, secondarily suspicious of other people remarking on her condition. It was this apprehension, I think, which prevented any permanent therapeutic effect being produced. The mode of development in this case was, I conceive, first the grippe producing a local neuritis, and later habit, association and apprehension.

Night-palsy. I was surprised to find that a case of night-palsy was, to all appearances, of this nature, my suspicions being first aroused by the fact that the attacks disappeared immediately after taking a drug before it could have been absorbed.

OBSERVATION VI. A young woman for a long period of time (eight years) had been awakened four or five times every night by attacks of palsy affecting the hands. Under the influence of a placebo the attacks at once nearly, but not completely, ceased. She then passed out of observation. This patient made for me some interesting observations as to the comparative duration of the attacks according as she did, or did not, take the placebo. The diagnosis of habit neurosis seemed to be justifiable. Originally the palsy was undoubtedly due to some other pathology, but had later passed into a continued and habit neurosis.

Neurasthenia. While habit neuroses are best studied when occurring in a pure and uncomplicated form, they probably most frequently are met with as a part of a complicating neurasthenia. A careful study and analysis of the symptoms of neurasthenia in individual cases will reveal the fact that many of them are pure association or habit symptoms. Habit neuroses are very easily formed in a neurasthenic state, and under these conditions their persistence is facilitated, and their dissipation is more difficult. In a neurasthenic condition of the body inhibition is less potent, and automatic processes are encouraged.

It is not infrequent that, in individual cases of what is apparently neurasthenia, careful study will show that, while originally the symptoms began in a condition of fatigue, this state has long since passed away, and that the symptoms continue as a false or pseudo-neurasthenia. This has sometimes been the result of pure but unconscious cultivation through ill-directed care on the part of the patient, friends or physician, or all three.

A pseudo-neurasthenia is readily cultivated, and becomes a perversion of bodily functions — a true functional disease. Such symptoms are cultivated just as vice may be cultivated, consciously or unconsciously, and result in the sexual perversions.

A pseudo-neurasthenia of this kind is usually represented by those cases which the physician recognizes as due to the pernicious influence of the mind on the body in some unaccountable way, but of which the exact *modus operandi* is not clearly distinguished. While the auto-suggestion is perceived the habit process is overlooked. I will not take the time to give illustrative cases, as they must be analyzed at length to be of value, but I wish to point out that in neurasthenia and hysteria the symptoms may become truly functional, and these diseases may be pure functional diseases, in that all true fatigue may have passed away, and the symptoms, including that of fatigue, be simply perversions of the physiological functioning of the body.

Prognosis and treatment. If the nature of the neurosis is recognized and appropriate treatment instituted, most cases are amenable to treatment. Many may be rapidly and perfectly cured. But this depends largely upon the length of time the habit has existed and its fixedness. In this respect it is like moral habits and that of tobacco and opium.

When the neuroses are a part of true neurasthenia their cure depends upon the removal of the fatigue state. There is also a tendency to relapse, as is the case with moral habits. A noticeable peculiarity is this tendency of the neurosis, when a part of neurasthenia, to return whenever a condition of fatigue returns or there is a relapse to the neurasthenic state. This may be the first indication of a coming breakdown. As to treatment, I believe the best to be the educational treatment advocated by the writer for neurasthenia.[4]

REPORT OF TWO CASES OF SPINA BIFIDA TREATED BY OPERATION.[1]

BY J. COLLINS WARREN, M.D., BOSTON.

THE difficulty of obtaining complete asepsis in cases of operation for the relief of spina bifida in infants is so great that a report of the two following cases is thought worthy of mention to the Society. The obstacles to obtaining primary union in these operations consist either in the condition of the tumor itself or in its locality. Both of these difficulties are illustrated by the two cases reported below. In many cases the integuments of the tumor are in a state of ulceration, owing to the great tension of the part and thinning, and ulceration of the superficial skin. In another set of cases, the situation is such as to increase greatly the exposure to infection — the seat of the spina bifida being in the lower dorsal or sacral region. Under these circumstances, the difficulty of maintaining a purely aseptic dressing over the wound is sometimes almost insuperable.

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[1] Read at the Obstetrical Society of Boston, October 1, 1898.

[4] Boston Medical and Surgical Journal, October 6, 1896.

Case I. This patient was seen by me in consultation with Dr. Reuben Willis, of Somerville, eight days after the birth of a child. Labor was normal in every respect. Immediately after birth a small tumor was observed in the dorsal region between the scapulæ. At the time of birth it was somewhat smaller than a hen's egg, and had been so compressed that it had not interfered with the delivery of the child. There was no family history of any such deformity. The mother was thirty-eight years of age, and had a child of seven years, living and well. After birth the child nursed readily and seemed to be perfectly well and comfortable, except for the presence of a tumor which caused some discomfort when pressed or pulled. Inspection revealed a plump, well-formed child, weighing seven and a half pounds, normal in every respect except for the presence of the tumor in the dorsal region. The tumor had increased somewhat since birth, and was oval in shape, situated in the median line between the scapulæ, with its centre over the third dorsal spinous process. The mass was soft, fluctuating and freely movable about its constricted base, which served as a pedicle. There was a cutaneous ulcerating surface on the tumor about the size of a silver dollar. Palpation showed that the mass was tender, and the cyst did not yield to pressure; it was remarkably translucent when inspected by transmitted light. The operation was performed on the eleventh day, the patient being etherized. After all possible antiseptic precautions had been taken, an oval incision was made around the base of the tumor parallel to the long axis of the body. Upon cutting through the skin a thick layer of connective tissue was exposed, within which was the true pedicle of the sac. When carefully isolated this pedicle was about eight millimetres in diameter, and could be freed so as to form a sort of cord passing down to the vertebral column. The tumor was pulled out as far as possible, and a chromicized catgut ligature placed around the lowest portion of the pedicle. The tumor was then excised, and a deep tunnel-shaped wound resulted, which was closed from below upwards by means of buried chromicized catgut sutures. The skin was held in position by means of interrupted sutures, and the wound protected with sterile gauze. The patient rallied well from the ether, and continued to nurse as well as before. The first dressing was performed on the fifth day, when the superficial stitches were removed, and the wound was found to be suppurating; but this led to no constitutional disturbance. The suppuration, however, was confined to the superficial skin wound, and did not affect the deeper parts. Granulations soon formed, and healing took place slowly, but was complete at the end of three weeks. The condition of the child progressed as though nothing had taken place. It rested, nursed regularly, slept well and gained the usual amount of weight. Towards the end of the second week there was some prominence of the fontanels, indicating increased tension within the cranial cavity, but this gave rise to no discomfort. When three weeks old the circumference of the child's head was 37 centimetres, when five weeks old, 40 centimetres. The distance over the external occipital to the naso-frontal suture was respectively 23.5 centimetres and 26 centimetres. The veins of the scalp were considerably distended, but the head as a whole did not appear to be disproportionately large. When three months old a slight general convulsion occurred, which was undoubtedly of gastric origin. On examination seven months after the operation, a small, firm cicatrix was observed at the site of the operation; but it was difficult to detect any defect of the spines or laminæ. The disproportion between the size of the head and body was very marked, and the picture was one of chronic hydrocephalus. The child weighed sixteen pounds, which was one pound less than a month before. The circumference of the head was 51 centimetres. The occipito-frontal measurement was 37 centimetres. The fontanels, coronal, lambdoid and sagittal sutures were widely open, but not bulging. The superficial cranial veins were considerably dilated. Subjectively, the child seemed perfectly well, and the mother was very much pleased with its condition.

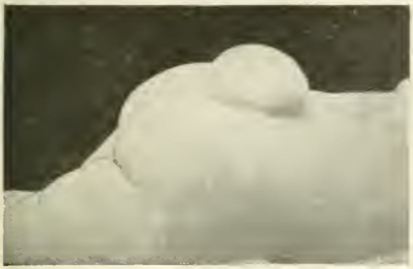

Fig. 1.

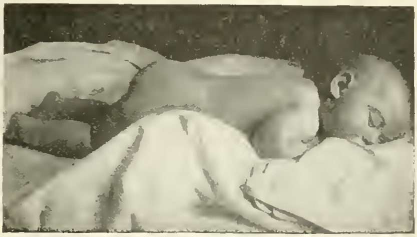

Fig. 2.

Case II. The patient is a stout healthy child about two months old. There is a soft, fluctuating swelling at the junction of the dorsal and sacral region of the spine. About ten weeks before, the tumor had been aspirated and about four ounces of a clear fluid had been drawn, but the tumor had refilled and now measured three inches in length and two and five-eighths inches in breadth, and projected from the surface so as to give the impression of a growth of the size of a small orange (Fig. 1). There was no bulging of the fontanels. The skin over the tumor was very thin and the mass was translucent. Operation was performed December 9, 1897. After etherization the baby was placed across a pillow, face down. Incision was made around the periphery of the tumor, and the sac was dissected out. The pedicle, which was a broad one, was then divided, and the sacrum was found widely expanded on its posterior aspect, and in the vertebral body there was an opening one-half or three-eighths of an inch across, beneath which could be seen the cauda equina. The sac was brought together over the opening with continued catgut sutures, and the surfaces of the deep funnel-shaped wound were brought together with interrupted catgut sutures. The skin flaps were sutured with continuous catgut sutures. The patient bore the operation well. Special attention was given to the posture of the patient during convalescence. The patient was so placed in bed, with its face down and with pillows under the pelvis, that the wound should be at the highest point in the body, so that the urine and feces were drawn away from the dressing; and a special nurse was in attendance day and night on the case. The patient rested well, and nursed from its mother without disturbing the posture which it was desired to maintain. On the seventh day, the temperature having risen several degrees, the dressing was removed, the wound examined and found to be tense, owing to the accumulation of fluid beneath. On removing the superficial stitches, a large quantity of cerebro-spinal fluid escaped, which had broken through the deeper sutures and distended the deeper layers of the wound in all directions. No infection appeared to have taken place. The child continued to maintain the special posture, and the wound was dressed daily, and healed slowly by granulation, and it was discharged well, with the wound entirely healed, on January 5th. A slight leakage occurred occasionally of cerebro-spinal fluid from a small sinus which opened once or twice during the following nine months, but when last seen, at that period after the operation, the child was well and the wound was firmly healed. The success attending the efforts to maintain asepsis in this operation appears to have been due to the posture of the patient during the healing of the wound, which was carried out systematically for four weeks under the constant supervision of a special nurse. The photograph gives an idea of the method of maintaining this posture (Fig. II).

NEW GROWTHS OF THE BLADDER.[1]

BY EDWARD REYNOLDS, M.D., BOSTON.

The following two cases are reported together on account of the similarity in the symptoms and lesions and of the interesting question raised by the similarity of the pathologist's report on them. The first case seems to me also interesting on account of the operative technique employed. This case is summarized from the report of it as originally drawn up.

Case I. Mary H., six-para, appeared at my clinic at the Boston City Hospital on April 17, 1897. She was a fairly well-nourished woman, in fair health, complaining of no abnormal symptoms other than frequent and painful micturition. She urinated about once an hour in the daytime and from two to three times at night. There was slight tenderness on pressure over the situation of the right ureter. The uterus was slightly retroverted and movable. It was put in place and sustained by a pessary without any effect on the urinary symptoms. On April 24th a cystoscopic examination of the bladder made with the Kelly cystoscope in the knee-chest position showed a much-reddened mucous membrane just inside the right ureteral orifice and two small excoriated looking spots near the right ureter. All these spots were touched with a ten-per-cent. solution of formalin and the bladder washed out with a normal salt solution. Specimens obtained by catheterization of the ureters showed nothing more than a slight irritation of the right pelvis.

Analysis of Urine.—Right Ureter.

Date, April 19, 1897.
Amount received, 55 c.c.
Color, pale, turbid, specific gravity, 1.010.
Reaction acid. U (per cent.) 0.63 per cent.
Albumin 1-20 per cent.
Bile pigments absent.
Sugar absent.
Sediment: Many small caudate medium and large, round and irregular cells and a few squamous cells (ureter, bladder and pelvis).
Considerable normal and abnormal blood. An occasional hyaline and granular cast with a little fat and normal blood adherent. Occasional small round cell, like renal. Some fibrin and an occasional leucocyte.

Analysis of Urine.—Left Ureter.

Date, April 19, 1897.
Amount received, 36 c. c.
Color, bloody, specific gravity, 1.011.
Reaction acid. U (per cent.) 0.76 per cent.
Albumin 1-10 per cent.
Bile pigments absent.
Sugar absent.
Sediment: Chiefly normal blood. A few small caudate and large round and irregular cells. Occasional leucocyte. Rarely a granular cast seen. A few small round cells like renal.

She was put upon a regimen of eight tumblerfuls of water daily, a mainly nitrogenous diet, and a fifteenth of a grain of corrosive sublimate in pills three times daily. The local treatment was repeated at weekly intervals during the next month, the spots treated improving, but others always reappearing shortly. During the second month the solid nitrate of silver was substituted for the formalin applications, but the excoriations increased progressively, and began to appear raised above the surface of the bladder, being now localized between and above the two ureters and at a little distance from their orifices.

The ulcerated surfaces were lightly scraped with a curette, and the result submitted to the pathologist. Result: no tubercle bacilli were found. (The family history was good.) This examination was repeated several times, with negative results. Her progress during the next three months may be summarized by saying that the symptoms remained unaltered, that the mucous membrane around the ureters gradually resumed a normal appearance and the tenderness over the right ureter wholly disappeared, but the protrusion of the reddened and roughened patch between and above the two ureteral orifices steadily increased, in spite of frequent cauterizations with nitrate of silver and the occasional use of a dull curette upon it. Pain after passing urine grew more severe, but did not last long. The base of the protruding mass is slightly smaller than its summit. On September 23d she was etherized and elastic catheters placed in each ureter, each being inserted about two inches. The bladder was then separated from the uterus up to almost the level of the peritoneal reflexion by an incision similar to the anterior incision in vaginal hysterectomy, the patient being in Pean's modification of the Sims position. The cervix was then held well backward by a double tenaculum, a large cystoscope passed into the bladder, and under the guidance of the eye a knife was passed into the bladder and an incision made between the right ureteral orifice and the supposed new growth. This cut extended through the vesical mucous membrane and the submucous and muscular tissues, so that the point of the knife was visible in the freshly made space between the bladder and cervix. The edges of the incision were now spread apart with tenacula from the vaginal side, when with curved scissors the incision was easily carried around the whole new growth at a distance of about half a centimetre from it on each side and a little more than this above and below, the ureteral orifices thus lying just sufficiently outside the cut to permit of suture of the vesical walls. The vesico-vaginal fistula was then closed with an interrupted catgut suture, being brought together from side to side, and the anterior vaginal wall was reunited to the cervix by a similar running catgut suture. A self-retaining catheter was placed in position and several instruments of different curves, as well as one soft catheter, were tried during the next two days, but as all of them produced vesical tenesmus they were withdrawn and the patient was allowed to pass her own urine. The wound looked thoroughly well until the tenth day, when a very small opening was detected in the middle of the vaginal incision, and the leakage of a few drops of urine through this hole whenever the cervix was pulled backwards showed that there must be some failure of union in the vesical wound. This small fistula healed spontaneously in ten days, there never being enough leakage of urine to stain through a small amount of gauze placed in the vagina.

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[1] Read before the Obstetrical Society of Boston, October 18, 1898.

The patient was discharged from the hospital on October 16th feeling perfectly well, urinating about once in two and a half hours upon an average and never more than once at night. Micturition painless. The specimen was submitted to the pathologist and, very much to my surprise, was reported to contain nothing but connective tissues underlying an inflamed mucous membrane. Pathological diagnosis: localized chronic inflammation. A week later there was some pain before and after micturition, and a cystoscopic examination showed several small blood clots each about the size of a pin head apparently lying under the superficial layer of the mucous membrane along the line of the cicatrix, which was plainly visible in the median line of the bladder, between the ureteral orifices, both of which were normal looking and now about half a centimetre apart. Careful puncture of the epithelium with a cervical spear released each of these tiny clots and the symptoms cleared up. A week later she returned, stating that she was micturating somewhat more frequently and suffering from a dragging pain in the pelvis. On vaginal examination on this day, October 30th, the cervix was much congested, the uterus in position, but low in the pelvis and considerably enlarged. (The pessary had been omitted as unnecessary several months before.) On questioning the patient she said she should have been unwell just after the operation (nearly six weeks before) but that menstruation failed to appear. Diagnosis: probable pregnancy at two months. Pessary adjusted. The course of the case during the next ten months may be summarized as follows: The dragging pain was relieved by the pessary, the diagnosis of pregnancy proved to be correct and the pessary was removed when the patient was about four months along. During the last half of her pregnancy she was pretty constantly troubled by a vesical pain, which was apparently due to the traction of the enlarging uterus upon the base of her bladder, but this disappeared with the birth of the child, and she was entirely well for three months after the birth of her child, at the end of which time she came to my office complaining of occasional pain in the neighborhood of the symphysis pubis and a little more frequency of micturition than she thought normal, that is, usually once at night and occasionally not at all, and from two and a half to three hours in the daytime. On inspection of the bladder a few reddened spots were detected in the inter-ureteral region. Deep cauterizing with nitrate of silver, and the use of a pessary to counteract the effect of a laceration of the perineum received at her last labor have now wholly relieved her symptoms, and the woman's future seems to me to depend upon two features, the correctness of the pathologist's report, and on her own energy and interest in her condition. If there was nothing in the case except chronic inflammation, and the patient will persist in following up the treatment sufficiently long, I think that she will continue entirely well.

Case II. Mrs. G., married, thirty-seven years old, was referred to my wards in the Boston City Hospital, July 9, 1898, from the medical wards of Dr. Henry Jackson. For two years she had suffered from more or less pain in the right side, and from painful and frequent micturition, frequently being obliged to rise five or six times at night. She had in the past had hematuria. On examination of the urine the alkaline phosphates were greatly diminished, the chemical analysis was otherwise normal, the sediment consisted of pus and abnormal bladder cells. She had several times passed stones the size of a pea, and many times gravel. On the 13th of July I made a visual inspection of her bladder; the mucous membrane was generally normal, but the inter-ureteral space was red, rough, and edematous; on the right edge of this inflamed space was an irregular, whitish body, apparently occupying the site of the right ureteral orifice. On touching it with a sound, it was plainly a concretion of very soft consistency, and I thought it probably a phosphatic deposit over the lower end of a small stone caught in the ureteral orifice. I was much puzzled at being unable to feel it from the vagina on bimanual examination. On July 17th the patient was etherized, and I was surprised to find that I was still unable to find the site of the stone by touch. Believing that a portion of it would be found within the ureter, I made an oblique cut through the vaginal wall, as nearly as possible over the site of the ureter, hoping then to be able to find the stone by touch, slit up the ureter upon it, and thus free the stone; still failing, however, to detect the stone by touch, I was obliged to open the bladder, which I did through the same cut. The incision proved to have been about one-quarter of an inch inside the stone, which was easily seen on inverting the wall of the bladder through the cut with a pair of forceps. On taking hold of the stone with forceps and attempting to withdraw it from the ureter, it crumbled away and proved to be a thin shell of phosphatic deposit encrusting the surface of a small pedunculated growth, which sprang from the edge of the right ureteral orifice. It was a solid, fleshy little growth with a wart-like surface, and I thought it safest to the patient to excise its base. I accordingly removed a portion of the bladder wall of about the size of a ten-cent piece, necessarily including the lower end of the right ureter. I had intended at once to close the resulting fistula, but the cut edge of the bladder oozed so profusely that it was impossible for me to place the sutures with any accuracy, and as I was afraid of closing the ureter by a misplaced stitch, I thought it better to postpone the closure to a later date. A few days later the edges of the fistula were unclean looking, probably from infection from unclean urine, and this condition was soon complicated by the appearance of phosphatic deposits over the cut edges.

The patient was treated at first by various diuretics and finally by urotropin, seven and one-half grains three times a day. Under this drug the concretion disappeared rapidly and the urine cleared up.

On September 9th I closed the fistula; the ureter could be seen spouting in the edge of the wound at its upper angle, and I found much difficulty in closing this part of the fistula satisfactorily. Not being willing to denude across the end of the ureter, I finally accomplished it by dissecting the tissues of the vaginal wall off the bladder over a space about one centimetre and a half long and one centimetre broad, the lower edge of this space being opposite the cut end of the ureter, and the remainder of it extending upward along the course of the ureter. This denudation was brought together by transverse sutures, and when these were tightened the orifice of the ureter was found to have been turned up into the bladder.

The remainder of the fistula was then easily brought together in the ordinary manner. The wound healed throughout and the patient was entirely comfortable until September 22d, when she had an attack of pain before, during, and after micturition, which lasted until the 24th, when a visual inspection of the bladder disclosed the existence of a small edematous spot in the mucous membrane just below the lower end of the cicatrix. This was lightly cauterized with solid nitrate of silver, and within forty-eight hours the symptoms disappeared. She has been kept on urotropin and has had no frequency or pain with micturition since.

The specimen was sent to Dr. F. B. Mallory, who returned the following report: "The specimen consists of a small bit of tissue about two and one-half by two by one centimetre, opaque, blood-stained, and covered in several spots with small, grayish-white, rough, caseous-like bodies. On microscopic examination the epithelium was gone and replaced by a thin slough of necrotic tissue infiltrated with leucocytes. Beneath this was an extensive infiltration of plasma cells and a few leucocytes. Blood-vessels are congested and altered; blood pigment is scattered through the tissues. In places the infiltration extends into the muscular layer.

Diagnosis. — Chronic ulceration; no evidence of malignancy or of tuberculosis.

It will be noticed that in both cases the pathologist's report fails to notice the small elevated spot resembling a new growth which was the most prominent feature of the disease on clinical inspection; and especially so in the second, in which it was distinctly pedunculated. It is possible that the protuberance may have been due to the squeezing up into prominence of a bit of inflamed tissue by the muscular contractions of trabeculæ in the bladder wall, which would naturally disappear before the specimen reached the pathologist. In each case the clinical appearance was such as to make me feel hopeless of relieving the woman by minor treatment, which had indeed been tried most faithfully and without success in the first case.

A point of considerable interest lies in the form of operation adopted in the first case. The technique was extremely easy, and it was interesting to see how readily and safely a new growth situated upon the posterior wall of the bladder at a point too high to be readily accessible from the vagina could be reached by this incision. Until one has had occasion to do a good deal of surgery in this region, he is not likely to fully realize the amount of loose connective tissue which lies between the posterior vesical and the anterior vaginal wall, the ease with which these slide upon each other, and the extent to which the cervix uteri can be moved about by a pair of double hooks, without in the least affecting the position of the contiguous portion of the bladder. Under these anatomical conditions it is extremely easy to free the anterior vaginal wall from the bladder, and any operator accustomed to plastic work can readily appreciate the advantage of having the line of union in the bladder run at one angle, and in the anterior vaginal wall behind it at another. There is a still greater advantage in the resection of the diseased portion of the bladder without the removal of the muscular and fascial layers of the anterior vaginal wall which underlies and supports its base. I should have adopted this operation for the second case here described (as I mean to for all future excisions of the base of the bladder) had it not been for my erroneous diagnosis of a stone caught in the mouth of the ureter, which led me to make the ureteral incision.

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FIBROMA OF THE VULVA.[1]

BY MALCOLM STORER, M.D., BOSTON.

The comparative infrequency of tumors of the character and size of the one I have here renders it desirable that such cases should be recorded. In 420 primary neoplasms of the external genitals in women Williams found only 17 fibromata, or only about one in 600 of all the new growths in women he tabulated.

E. M., white, age forty-one years, the mother of three children, first noticed a few months after the birth of her youngest child, nine years ago, a small tumor of the left labium majus. At first it protruded "like a pipe stem," and was, according to her, of uniform consistency, but three years later, when it was about an inch long, its lowest part began to become indurated. While for some years she had had pelvic symptoms, they were probably due to an endometritis rather than to the tumor, which troubled her only by its weight and the fact that she sometimes found that she was sitting upon it. There was always a marked increase in the size of the tumor at each menstruation, it doubling at least, the increase beginning a week before the flow and reaching its maximum on the first day, and then gradually subsiding until the normal was reached in about a week, the flow itself lasting only five days. At these times the tumefaction was generally sufficient to cause the appearance of a number of painless serous blisters the size of the thumb-nail.

Upon examination she was found to have this tumor hanging from the outer side of the left labium majus, just above the level of the clitoris, by a pedicle 20 centimetres in length and four centimetres in circumference. The tumor itself was pear-shaped, very edematous, and much larger than at present, its greatest circumference being about 28 centimetres. It was covered with fairly smooth non-adherent skin above, while below the skin was thickened and puckered in around an ulceration 2 centimetres in diameter at the most dependent point. This ulcer had existed for a number of months at least, but was a source of annoyance only from the necessity of keeping it clean. The tumor was much harder below than above, but not nodular. It was not sensitive, nor was traction upon the pedicle painful. The pedicle contained no palpable vessels, nor could it be followed into the inguinal canal. The tumor was pronounced by Dr. A. K. Stone to be a fibroma.

The most common seat of fibromata of the vulva is one or the other labium majus, therein differing from the malignant growths, which are more apt to arise in the labia minora or from the clitoris. It has been claimed that vulvar tumors are more often found upon the left than upon the right side, as are also, it is said, cysts of Bartholin's gland, but this does not seem borne out by the cases that I have been able to collect.

The fibrous and fibromyomatous tumors that are seen in this region may have their origin in two main sources: (1) the subcutaneous connective tissue, and (2) the connective tissue and terminal muscular fibres of the round ligament, and possibly in muscular fibres in the skin, while, as curiosities, may be mentioned tumors arising in (*a*) the pelvic fascia and periosteum of the bony pelvis, (*b*) the recto-vaginal septum, and (*c*) the uterus. Largeau, for instance, removed a cystic fibromyoma of seventy-five pounds' weight, the pedicle of which, apparently attached to the left labium majus, was found to run far back into the pelvis, presumably to the uterus, although the operator did not care to trace it to its origin.

As would be expected, fibromata of the vulva are more common in the colored race than in the white. Thus Ramsey saw twelve cases in negresses to three in white women. They generally first appear in young adult life, that is, at the period of a woman's greatest sexual vigor and activity. There has often been noted the increase in size seen in my case during menstruation and pregnancy, with subsequent decrease with the ebb of the menstrual tide. This vascular menstrual increase is, perhaps, more marked in lipomata and myomata than in the more densely constituted fibromata. Occasionally a case is seen in which there is a permanent increase in size following unwonted activity of the sexual system, as in that of Gillette, in which a girl who had had for fifteen years a trivial tumor in one labium found that, upon her becoming pregnant for the first time, it grew rapidly, until, when she was eight months advanced, it was the size of the tumor I have shown to-night. Such rapid growth is, however, most exceptional, and always should excite suspicion of malignant degeneration.

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[1] Read before the Obstetrical Society of Boston, October 18, 1898.

From their situation, and the extreme elasticity of the tissues in which they are imbedded, these tumors quickly become pedunculated, a tendency perhaps more marked in tumors arising in the subcutaneous connective tissue than in the more firmly attached fibres of the round ligament. While almost always growth is outwards, a case of Kirchhoff is of interest. For some years a girl of eighteen had felt, on lifting anything, as if a body were trying to force itself out from her vagina. One day on lifting a kettle she felt a pain in the genitals, sharp enough to make her faint. Upon examination there was found, dependent to the middle of her thigh, a fibroma arising from the inner side of the right labium majus, while the hymen showed that it had been recently torn to pieces by the extrusion of this tumor from the vagina.

Should the tumor tend to expand laterally instead of becoming pedunculated, it may press upon or displace the urethra or the meatus or grow at the expense of the vagina, preventing coitus or even becoming a positive bar to parturition (Zielewicz).

Pain is apt to be conspicuous by its absence, and generally it is only inconvenience that leads to surgical treatment. These tumors, however, are naturally much exposed to injury, and an injury is apt to be followed by a low type of ulceration, as in my case, the discomfort of which is often the cause that leads to their removal.

The only treatment is surgical. If the tumor has a thin pedicle nothing can be simpler than its removal. In cases, however, in which the pedicle is of large size, greater care must be taken owing to the sometimes immense vascularity. In a case reported by H. R. Storer, there having been an excessive hemorrhage from an exploratory incision into the mass of the very large tumor, the pedicle was found to consist chiefly of a "congeries of veins and arteries — some of the latter being of immense size, one fully as large as the femoral." Eichholz has reported a similar cavernous fibroid, in which some of the vessels of the pedicle were 12 millimetres in diameter. In such cases hemorrhage can generally be controlled by the assistant's fingers, but it may be necessary to resort to a temporary elastic ligature, with possible transfixion of the pedicle. Cases that are not pedunculated may present greater difficulties. Removal of ramifications of the tumor may involve danger of injury to the bulb and troublesome hemorrhage, and it may not be wise to follow up too enthusiastically the pedicle of a tumor whose origin is deep in the pelvis or inside the inguinal ring, especially when the patient has, at most, only slight inconvenience from its presence. On the other hand, the possibilities of malignant degeneration must not be forgotten.

REFERENCES.

Eichholz. Frauenarzt, 1892, 520.
Gillette. Bull. et Mem. de la Soc. de Chir. de Paris, 1885, 688.
Largeau. Arch. Prov. de Chir., 1892, I.
Kelly. Johns Hopkins Hospital Bulletin, 1892, iv, 321.
Kirchhoff. Centralbl. für Gyn., 1893, 1037.
Ramsey. The Gynecological Journal of Boston, 1871, 337.
Storer. The Gynecological Journal, 1871, 326.
Taylor. New York Medical Journal, July 6, 1889.
Villiers. Arch. de Soc. et de Gyn., 1893, 120.
Williams. American System of Surgery.
Zielewicz. Arch. für klin. Chir., 1889, 340.

MALARIA AS SEEN AT MONTAUK.

BY F. J. COTTON, M.D., BOSTON.

In considering the types of malaria seen in the hospital at Camp Wikoff it may be well to note that all the many cases there had one point in common — one point of difference from any ordinary series of malarial infections — they were all old cases; almost without exception the fever had been contracted in the vicinity of Santiago.

This fact probably explains why the remittent malarial fevers were so few, and why the course of the disease was so inconstant.

It was curiously difficult to get accurate histories from the men: they were usually as laconic on the subject of illness as on that of fighting. It was, therefore, hard to get the precise data, but while a few cases started as early as July 7th or 8th, the majority of the men seem to have taken their infection seriously only after the strain and excitement were over, — from July 19th on, and many were actually well up to this time. Of those at Montauk who had malaria at all, few had remained well through July; a great many dated their first attack as early as the 20th.

Most of them had had two or more attacks in Cuba, usually lasting but a few days, and recurring at varying intervals from a week upward. In some cases there was a pretty clear history of a longer continued remittent malaria, with or without subsequent attacks. The patients had nearly all had quinine, often in heavy doses, but very few had been regular or persistent in its use.

The majority of cases were of course convalescents, often suffering more from exhaustion and privation than from the effects of the malaria. They were emaciated, weak and anemic, many complaining especially of lame back and legs, loss of appetite, or dizziness, but with a few days of rest, food, quinine and iron they picked up rapidly, and were soon clamoring for furloughs.

Some few cases were so intensely anemic as to be in really serious condition, and required longer treatment for the anemia. Many had diarrheas, whether specifically malarial or simply camp diarrhea it was usually impossible to say; others had dysentery, some of them, at least, from amebæ.[1] The physical examination of these convalescents showed frequent functional heart murmurs, occasionally with slight dilatation, and sometimes an enlarged spleen, rarely, however, of any great size. They were apt to show slight irregularities of temperature, of no fixed type. The blood examination showed a varying grade of secondary anemia, occasionally some pigment, but no plasmodia.

Some few cases, however, apparently convalescent and otherwise not notable, did have parasites in the blood, for example:

Case I. Began in July with chills and fever. After much quinine, the fever became irregular and abated. He had a second attack, of short duration. A week ago two or three chills. On entrance, nothing of note beyond a moderate anemia; felt as well as at any time since July. While in the ward no temperature worth mentioning, no chills. The blood showed chloranemia, pigmented leucocytes, a few crescentic bodies.

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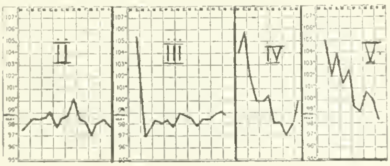
[1] Amebæ dysenteriæ were found in the stools of a number of cases in the hospital, but most of the presumably amebic cases were convalescent when first seen.

Case II. Had irregular chills and fever in Cuba for four weeks; since then on his feet, but not on duty. Now feeling better. Emaciated, but without much pallor. No chills or fever; no symptoms except occasional nausea and palpitation. The blood showed slight anemia; a few crescents and some younger forms (intracellular rings).

These cases are probably rather cases of chronic than of recurrent infection. None of the cases of this sort showed other than the estivo-autumnal form of parasite.

In many instances patients previously convalescent developed active symptoms of malaria as a result of privation, of sea-sickness, or of digestive disturbance on the transports, or as a result of the over-exertion of landing or pitching camp. They came in complaining of chills and fever, or only of headache and backache, or perhaps dizziness. They were apt to show curious temperature charts, usually without any approach to a fixed type, and were notable only in that they usually improved very rapidly under treatment. Such cases were frequent enough to demonstrate definitely the connection of the attack with depressing influences, especially physical over-exertion. In a very few of these cases the tertian parasite was found, more often the estivo-autumnal, while in some, curiously enough, the blood examination showed only anemia and pigmented leucocytes, without any plasmodia. The cases without parasites were in every way comparable with those where they were present, — in the negative physical examination, in symptoms and in course. Whether they represent the reaction to exhaustion of a malarial cachexia without active organisms, or were simply infections in which the plasmodia were in the viscera only, is hard to say. Actual proof seems impossible, for such cases do not, of course, come to autopsy.



Case III (see chart) is an example of the first class. The blood report was: Considerable chloranemia, a few intracellular "signet-rings."

Case IV gave a history of two or three short attacks of chills and fever in Cuba; since then in fair condition till the day before entrance. That evening a moderate diarrhea and a chill. On day of entrance no diarrhea; in afternoon chilly; temperature 105.8°. Physical examination absolutely negative. Blood examination showed no plasmodia.

Apart from this class of cases, the malarias simply recurred after an indefinite interval from the last seizure. Almost all the described types of attack were seen. The great majority had estivo-autumnal infection; tertian infection was not infrequent; true quartan fever was not seen. Those patients who showed the tertian parasite were from the same regiments as those with the estivo-autumnal, and, so far as could be made out, had had similar exposure. There were very few cases, however, when the two parasites occurred in the same case. The pure tertian infections [2] were both single and double, the double infection with daily chills being rather more common. Occasional cases without chills were seen.

Case V. Never had chills in previous attacks in Cuba, nor did he have any while in the ward. The blood examination showed many fully-developed tertian organisms.

It is noteworthy that nearly all the really large spleens seen belonged to these long-continued tertian cases, and that many of them showed an anemia much more intense than was usual with the estivo-autumnal cases.

Two cases, both tertian, were brought into the wards one very hot day (September 1st) as sunstroke cases. In both cases it seemed as if the effect of the heat had been added to that of a malarial infection already running.

One of these cases was really only a heat prostration on top of a tertian attack that had been in full course for a week; the temperature was 106°, but he showed none of the signs of true insolation.

The other case (Case VI) imitated more closely a simple sunstroke. He was found unconscious outside the camp and brought in semi-comatose, livid, with a temperature of 106°, a pulse of 110. An iced bath restored him to consciousness, and brought the temperature to 103°. From this time on the case was one of ordinary double tertian malaria, and the day after the "sunstroke" full-grown tertian organisms were found in the blood. He gave a history of four or five attacks with chills in Cuba, was ill on the transport, and had been ailing for three or four days, but was on his way to report for a furlough when he collapsed in the heat.

The estivo-autumnal recurrents which formed the bulk of all the cases were almost hopelessly inconstant in type. There were cases practically without fever, without symptoms (Cases I and II). Other cases had only an irregular temperature as evidence of infection. The majority, however, had chills, often severe, usually very irregular, not infrequently appearing in one paroxysm, absent the next. The length of the chill and the duration of the temperature varied indefinitely. The same may be said of the recurrence of the paroxysms; the only approach to regularity was in those cases with a daily chill, and even in these there was no regular hour of onset. The duration of the attack in these cases was usually not over four days, the interval between attacks inconstant, with a tendency to recur after about eight days.

Occasionally attacks of headache and backache or nausea replaced the ordinary form of paroxysm; not infrequently a paroxysm indicated by a considerable rise of temperature would pass entirely unnoticed by the patient, or the initial chill occurred without any subsequent sensation of fever. This happened even with temperatures of 105° or 106°; with less grades of fever, lack of subjective feeling of heat seemed the rule rather than the exception.

There were a few cases of collapse in the paroxysm. In these cases the collapse was not readily explainable either on account of exceptional weakness of the patient, or of exceptional severity in the general course of the infection, so far as one might judge.

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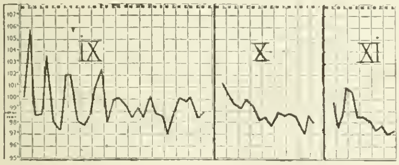
[2] That is, those due to the "mild tertian" parasite; no distinction of the so-called "malignant tertian" variety of the estivo-autumnal parasite was attempted.

Case VIII went into profound collapse in the sweating stage of a paroxysm, and could be brought around only by very considerable subcutaneous stimulation with strychnine and whiskey. His blood a couple of hours later showed only a very few small, intracorpuscular rings and one older intracellular form. He had no further paroxysms, and five days later applied for a furlough, in very fair condition.

Case IX, already exhausted from a long-continued dysentery, collapsed in a paroxysm the day of entrance (he had had no sign of malaria for weeks before). His pulse ran up to 160, weak and running; the temperature was 105.8°. He, too, responded to strychnine, whiskey and digitalis, and had no repetition of the collapse. The blood examination on two occasions showed nothing more than a few crescents in the circulating blood.

Some thirty hours after a chill with collapse, began to have another chill, but lapsed into a coma which lasted about three hours, with a temperature of 102° to 103.5°. Quinine was given (ten grains) subcutaneously, but the recovery of consciousness was too prompt to be attributed to the quinine, and apparently was spontaneous.

Cases of coma were not uncommon; some were brought in in this condition, others quietly went into coma in the ward in spite of ordinary quinine dosage. The coma seems, sometimes at least, to develop as the equivalent of a paroxysm. In one case[3] in the hospital each paroxysm brought a short period of coma, which passed away spontaneously.



In some of the cases of coma there was a history of recent chills, or of a chill ushering in the coma, as in the last case, but two cases had had no chills at any time, and one had no clear history of any malarial attacks at all, though crescents were found in his blood.

In all, eight cases of coma came under my personal observation, all closely similar in appearance. The patients lay quite still with the limbs quiet (in contrast to the restless, wandering "picking" of typhoids brought in in a not dissimilar coma); there were no muscular twitchings,[4] no pareses, no loss of muscular tonus. The breathing was regular, in some cases perfectly quiet, in others deep and somewhat stertorous; the pulse, at least in the early stages, not rapid, regular and of good quality. The eyes were partly or fully open, motionless or nearly so, the pupils approximately normal and reacting to light. The patient could often be roused to give his name, perhaps his regiment, — rarely more. A prick of a pin was always responded to, often in lively fashion; the usual reflexes showed nothing abnormal. Rectum and bladder were emptied involuntarily, usually at intervals only; retention of urine was in no case noted, though watched for. The subsidence of the attack was a gradual, often relatively rapid, awakening, without any sign of delirium or other mental disturbance.

A typical case is appended:

Case X. In July, and two or three times afterward in Cuba, had diarrhea and some fever, no chills. The week before leaving Cuba, chills daily. On the transport, six chills; then better. On landing, one chill; then irregular fever. On day of entrance had a chill. Brought in semicomatose, supposed to be moribund. Pulse was poor, but responded to stimulation. Temperature 101°; some sweating. Rallied through the night and by morning was in fair condition, quiet and fully conscious. Blood taken during coma showed only crescents and intense anemia. Recovery uneventful. No chills while in the ward.

The next case is atypical only in the occurrence of convulsions.

Case XI. No clear history of malaria to be obtained at any time, despite repeated questioning. Had suffered much from the heat, however. Four days before, while on the transport, he had been ill, but recollects neither chills nor fever. After landing he recalls only that he was "played out altogether."

He was brought in in coma; resisted examination, but could not be roused to give his name; was able to swallow. Quinine given, 15 grains every four hours. Lay with eyes open; perfectly quiet save when touched. The pulse was of good quality and not rapid. Examination of the blood showed a good many crescents, a few intracellular rings, little pigment. The coma continued through the day; toward evening the pulse was less good, and strychnine was given, one-sixtieth grain every four hours. The pulse rallied, but, despite the large dosage of quinine, there was no change in the coma. The next morning there occurred a tetanic convulsion of moderate intensity, followed by several others less severe; these lasted but a short time, and the patient was again quiet. The strychnine was, of course, promptly omitted. Eight hours later fresh convulsions appeared, but of wholly different type. The patient writhed about in a quite irregular fashion, with all muscles tense, but with wild gyrations of arms and legs. There were no clonic contractions. The eyes, throughout the half hour that the attack lasted, deviated to the right, and the head was rigidly retracted and turned to the right. This attack passed off without doing obvious harm, but without change in the coma. Quinine was next given subcutaneously in 10-grain dose without obvious effect. In the evening a subcutaneous injection of salt solution was given, in the amount of one litre. Not long after this the patient began to improve. Next morning, some sixty hours after entrance, he woke to full consciousness. For a day longer there was a trace left of the retraction of the head, and the neck and upper back were stiff and somewhat tender. This, however, passed off, and two days later he was up and apparently well. There were no further paroxysms.

It is possible that the first convulsions were due to strychnine, though the total given was but one-fifteenth of a grain, but the second set would seem to have been due, probably, to the malarial infection.

In regard to these coma cases, it may be said that administration of quinine by mouth, even when the patient can swallow readily, seems of little use, while the subcutaneous injection of the soluble salts of quinine seemed of definite effect in the majority of cases. Subcutaneous injection of salt solution seemed, in the few cases where it was tried, to have some value.

There were relatively very few cases of continued malarial fevers. One patient ran a temperature of

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[3] Under the care of Dr. Seabury W. Allen.

[4] In one case, however, there was a persistent champing of the jaws, without other muscular action.

100–102½°, and lay in a typical typhoid condition for days. He had no abdominal symptoms beyond a slight diarrhea. Rose spots were absent; the spleen was moderately enlarged; he had one attack of epistaxis. The only thing of note was an intense anemia, obviously referable to the previous malarial attacks of which he gave a history. The examination of the blood on two occasions showed no plasmodia, though there was marked anemia and considerable pigment.

This case was called typhoid until, after six days (during which some quinine was given), the temperature abruptly fell from 101° to normal and stayed there. With this change his stupor very suddenly disappeared and within twenty-four hours he seemed, except for the anemia, perfectly well. There was no recurrence of symptoms while he remained in the hospital. In a second case of almost identical course the recovery was less abrupt, but here the plasmodia were found present in the blood as well as the pigment and chloranemia. Both these cases are apparently malarial; in neither case was the Widal test performed, but clinically there was no reason to assume a mixed infection. In other cases, where the mental condition, the enlarged spleen, moderate abdominal tenderness and the slight bronchitis strongly suggested typhoid, the temperature was really intermittent, the fever of short course, and the estivo-autumnal parasites demonstrated. These cases had no chills.

In a number of cases with irregular fever, where there was a history of malaria, the blood examination showed anemia and pigment but no organisms, while the clinical diagnosis of the typhoid was usually confirmed later by a positive Widal test. Probably in one sense many of these were mixed infections, but during the course of the typhoid there were no plasmodia in the blood, nor did the latent malaria show any influence on the fever curve. In a very few of these cases, during the convalescence, after the normal temperature had been reached, there was a flare-up of temperature, with or without chills, and the plasmodia previously absent reappeared in the blood. Mixed infections, typho-malaria in the stricter sense, where both processes are active at the same time, were not seen in this series of cases.

The above cases are from a total of about three hundred, which were under my care in the General Hospital at Camp Wikoff from the 21st of August till early in October. Of this total, probably two hundred had, or had had, malaria, but many were fully convalescent, while many were in the wards too short a time for close observation. Detailed notes, charts, etc., are at hand for only seventy of the malarial cases; these were, of course, mainly the severer cases.

For the blood examinations cited, for Widal tests, etc., I am indebted to Dr. James Ewing, of New York, whose work as hematologist to the hospital, carried out under considerable difficulties, was of the greatest practical value.

Fort Monroe's Military Hospital.—Fort Monroe will soon be one of the most important military hospital stations in the country. The hospital is named the Josiah Simpson Hospital, and has, during the past four months, accommodated 1,500 sick and wounded soldiers, of whom about 500 still remain. It is now proposed to increase the capacity of the hospital to 2,500 beds by the erection of five additional buildings. — *Medical News.*

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

MALCOLM STORER, M.D., SECRETARY.

Regular Meeting, October 18, 1898, Dr. Davenport in the chair.

Dr. J. C. Warren reported

TWO CASES OF SPINA BIFIDA.[1]

Dr. W. F. Whitney: There are some cases of hydrocephalus which arise from a closure of the passage to the fourth ventricle, and therefore it by no means follows that the hydrocephalus was the result of Dr. Warren's operation.

Dr. E. Reynolds, as illustrating the value of these operations, spoke of a well-known case in which a child, cured of spina bifida, lived to become a valued physician. The method of treating the wound used by Dr. Warren reminded him of his own procedure in symphyseotomies, which now he limited to septic cases, reserving clean ones for Cæsarean section. The problem being to keep a clean wound clean in spite of the proximity of a septic discharge, he was in the habit of using three separate dressings — one to the vulva, one to the symphyseotomy wound, and one intermediate to the two — thus avoiding all chance of contaminating the dressing of the symphyseotomy wound.

Dr. Warren: I did not wish to imply that the operation was of necessity the cause of the hydrocephalus in my case, but it is just as well in giving a prognosis to the parents of these cases to warn them of the possibility of the development of it.

Dr. Whitney, in answer to questions, said that hydrocephalus is apt to be associated with spina bifida: that where one malformation exists another is often seen, but that it cannot be said beforehand in any given case that it will develop. It is not probable that an operation would make it more likely to come on. He was unable to state whether the tension in the sac of a spina bifida is apt to be greater than that in the normal canal. Clinically, as Dr. Warren said, these sacs are not always very tense.

Dr. Sinclair asked as to the statistics of operations for spina bifida.

Dr. Warren said that until recent years they had been very bad, the great danger coming from sepsis.

Dr. J. G. Blake spoke of a case he had seen years ago treated by ligature, which died, as was then the rule.

Dr. Warren spoke of an unsuccessful attempt of his own to cure a case by means of a subcutaneous ligature. The best treatment was a clean incision, laying the tissues open by layers, as one would when operating for hernia, combined with postural after-treatment.

Dr. M. Storer reported

A CASE OF FIBROMA OF THE VULVA.[2]

Dr. Sinclair had seen only one case at all like this and that proved to be a sarcoma. He remembered a case of a transparent sac the size of a hen's egg arising just above the clitoris by a thin pedicle of doubtful origin.

Dr. Warren was reminded by the tumor in Dr. Storer's case being an inconvenience when the patient sat down of a case in which he recently removed too abundant nymphæ because the patient found them interfering with bicycle riding.

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[1] See page 592 of the Journal.

[2] See page 596 of the Journal.

Dr. Edward Reynolds reported

TWO CASES OF OPERATION FOR THE REMOVAL OF NEW GROWTHS FROM THE BLADDER.[3]

Dr. Higgins said that he had seen the first case before operation, and that then there was not the slightest doubt as to the correctness of the clinical diagnosis that there was a small projecting growth present.

Dr. M. H. Richardson reported a case of

NEPHRECTOMY FOR RENAL CALCULUS.

I show here a kidney which I removed from a man of fifty-two years. The patient, a farmer, first noticed pain in the right kidney while riding a "kicking machine" (a machine for turning hay). The movement of the machine hurt him a good deal. He had always felt weak in the right kidney. There has been a loss of twenty-five pounds in weight. He has passed blood in the urine for a long time — apparently nothing but pure blood.

No consumption or cancer in the family.

The chief symptoms were pain in the right kidney, hematuria and loss of weight.

On examination I found a large mass occupying the region of the right kidney. Posteriorly it was very tender; in front lobulated and fluctuating. The dulness of the tumor was continuous with that of the liver. The man's general condition was fair. There was very marked emaciation. The pulse was 120.

In this case I was inclined to the opinion that this was a case of cancer of the kidney. I nevertheless advised operation, hoping that if a malignant tumor was found it would be confined to the kidney, or, if the trouble was not malignant, it might be some curable thing.

Operation was performed this morning at St. Margaret's with the assistance of Dr. Jones and Miss Durling. An incision was made parallel to the obliquus externus, from a point two inches above the pubes to a point within two inches of the ribs on the right side. The incision was parallel to Poupart's ligament and an inch and a half from it. When the incision was large enough to admit the hand, careful examination was made of the left kidney, of the tumor, of the liver and of the stomach. The left kidney felt normal in size and consistency. In the region of the right kidney there was a large, lobulated, fluctuating tumor which extended from the level of the crest of the ilium up to the diaphragm. It was in contact with the liver, gall-bladder, the hepatic flexure of the colon, the pylorus and the inferior cava. The tumor evidently contained large calculi. The lower portion was cystic, and in the cyst could be felt numerous stones of various sizes. At the outer portion there was a large stone directly under the capsule. The tumor was separated without difficulty. The ureter and vessels were tied and the kidney removed. Several small masses which had been felt beforehand in close relation to the inferior cava were now seen to be independent of the kidney. They had the appearance of chronic adenitis. The masses were grayish, in places translucent, and in places cheesy; they were encapsulated and friable. I removed one for examination; the others were so intimately connected with the inferior cava and the abdominal aorta that it was deemed best not to attempt their extirpation. Moreover, if malignant, they could not have been entirely removed; if not malignant, they were not likely to cause further trouble. I attempted to enucleate one of them, which was lying directly under the inferior cava, but the mass was so intimately connected with this vein that the attempt was abandoned. Hemorrhage was slight.

The patient came out of the operation well. The abdomen was closed except for a small gauze drain.

This case is interesting because, in spite of the grave prognosis, the disease proved to be essentially benign. I hesitated a long time before advising operation. I have similar cases under observation to-day — cases in which the prognosis as to the possibility of relief seems quite as unfavorable. Cases of this kind encourage one to explore in all conditions in which the physical examination does not demonstrate the presence of a hopeless malignant infiltration.

Dr. W. H. Prescott spoke of an autopsy he had performed at which he had found both kidneys in nearly as bad a condition as in Dr. Richardson's case, yet the patient had apparently been perfectly well until two months before her death.

Dr. Warren reported a case of

SUDDEN DEATH AFTER OVARIOTOMY.

The patient was forty-two years old, married; catamenia appeared at the age of twelve, regular and not painful; had been married twenty-four years, had had five children and no miscarriages; catamenia were still regular — and said she had had no other illnesses. For the past three years she has noticed that she has been growing large in the abdomen. This growth has taken place gradually. Micturition has been frequent for several months, and the bowels seemed constipated. For some months she has been obliged to sit up in bed or on a chair to breathe, and is unable to breathe with ease if lying down. Abdomen is very large and prominent and tense, flat to percussion, and there is a wave of transmission as of fluid contents. This wave, however, is not equally marked in all directions, — giving the impression of the existence of a multilocular cyst. On vaginal examination, the uterus is found to be movable and the cervix soft. Operation was performed on October 13, 1898. An incision was made on the median line below the umbilicus about four inches in length. The cyst wall being exposed, the contents were evacuated through a large canula or tube, about twenty pints being collected in this way. The solid contents of the cyst were then drawn out through the wound. The pedicle, which was on the left side, was quickly tied and divided. After wiping the abdomen dry with gauze sweeps the abdominal incision was closed by about eight silkworm-gut sutures. As the last were about to be tied the patient suddenly died. All efforts at resuscitation, such as artificial respiration, the use of oxygen, and tracheotomy, proved useless. At the autopsy, the heart and other organs were found to be in a normal condition. This case is reported as an example of heart failure, due not to anesthesia or to the shock of the operation, but to the inability of the heart to obtain sufficient blood, owing to the great hyperemia of the abdominal viscera caused by the sudden removal of pressure.

Dr. Sinclair had seen a somewhat similar case where a woman nearly died after the tapping and removal of a small amount of fluid from an ovarian cyst.

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[3] See page 594 of the Journal.

Dr. Warren also reported a case of tumor of which the exact nature could be told only by microscopical examination. The patient was fifty-one years of age, married, and had had ten children. Catamenia were regular until May, 1898. General health was always excellent. The patient first noticed an abdominal tumor in May, 1898, which has been increasing rapidly in size ever since. She has lost little weight during this time. There was some edema of the legs and shortness of breath for five or six weeks. Has menstruated only three times since May. On examination, the patient was found to be a very strong, well-developed woman. Abdomen is enormously enlarged, and integuments are smooth and tense. Percussion waves were felt over limited areas, but not directly through from side to side. Tympany confined to the epigastrium. Cervix was found high in the vagina. The uterus was movable. Operation was performed October 14th. An incision four inches long was made below the umbilicus which exposed the walls of the tumor. These were found to be so thin and the cysts so numerous that it was impossible to evacuate their contents by a canula. The cyst walls, therefore, were punctured by the finger, adhesions, which were numerous on the anterior and upper abdominal walls, were ruptured, and the tumor in this way slowly and gradually extracted from the abdominal cavity after the abdominal incision had been doubled in length. As the tumor so surrounded and involved the uterus as to render it impossible to find a pedicle, it was found necessary to perform hysterectomy. The precaution was taken in this case to raise the foot of the operating-table slightly, and to preserve pressure upon the epigastric region after the removal of the tumor and during the suturing of the abdominal walls. No untoward symptoms occurred during the operation or afterwards, and the patient made an uninterrupted recovery, and left the hospital about three weeks later.

Dr. Whitney described the growth as follows:

"The growth removed by Dr. Warren consisted of a fibrous and cystic mass with the uterus detached. The mass measured about 27 centimetres in diameter and consisted of very numerous cystic cavities, with very thin walls, which had been exteriorly ruptured, showing a very irregularly trabeculated surface on the inside. Besides these cysts there was a much firmer growth, looking like soft, edematous, fibrous tissue, throughout which small cysts were to be distinguished. At the upper part a portion of the omentum was attached and the whole had the aspect as if it had been everywhere adherent and badly torn in removal.

"The portion of the uterus which was removed measured about 5.5 centimetres, the walls thickened (2 centimetres) and the cavity slightly dilated. The tube on the right side was elongated (14 centimetres), that on the left side normal (6 centimetres). Both ovaries were present, that on the right side flattened and elongated, that on the left normal in size. There was quite a broad cut surface on the posterior surface of the uterus, and a section through the wall at right angle to this did not show to the eye any sharp line between it and the soft, edematous, fibrous tissue of the tumor mass from which it had apparently been cut. But there was a gradual change to what seemed to be a looser and more edematous structure.

"*Microscopic Examination* showed at one end of the piece removed from the uterus a much more deeply stained and richly cellular part. The cells could be traced directly into bundles of smooth muscular fibres, while farther away from it they were not so clearly muscular in type, the nuclei being more rounded. There were numerous mitoses in the nuclei. In the main mass of the tumor the cells were distinctly fibrous in character, and the tissue formed was of the type of a loose, edematous tissue, and the edema was irregularly collected into spaces which could be dignified by the name of cysts. The walls of the larger cysts differed in no way from the smaller ones, except that the cells directly bounding on the cavity were a little elongated and pressed together.

"The *Diagnosis* is an edematous cystic fibroma, probably originating in the uterus."

Dr. Sinclair spoke of two retroperitoneal tumors he had seen, one in the practice of Sir Spencer Wells and one in that of Dr. J. Homans, and emphasized the great difficulty of their removal.

Dr. Whitney agreed to this, saying that usually retroperitoneal tumors ramify in every direction, therein differing from tumors of uterine origin.

Dr. J. G. Blake called the attention of the Society to Dr. Hidden's ether inhaler.

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AMERICAN PUBLIC HEALTH ASSOCIATION.

Abstract of the Proceedings of the Twenty-Sixth Annual Meeting, held at Ottawa, Canada, September, 27, 28, 29 and 30, 1898.

(Concluded from No. 23, p. 576.)

Dr. Irving A. Watson, of Concord, N. H., read a paper entitled

SOME OBSERVATIONS FROM PRACTICAL EXPERIENCE WITH BOVINE TUBERCULOSIS IN NEW HAMPSHIRE.

He gave a brief history of the official recognition of bovine tuberculosis in his State, and presented the following deductions: (1) That it is impossible to eradicate bovine tuberculosis, but that it may, without inflicting too great a burden upon the State, be reduced to a degree that will subserve the interests of the stock raisers and likewise protect the public health; (2) that but a very small percentage of animals infected with tuberculosis in any way endangered the public health, and that the indiscriminate slaughter of the cattle reacting to the tuberculin test is wholly unnecessary, inasmuch as many of them either recover or the disease is permanently arrested; (3) that a proper sanitary condition of stables and stable enclosures would do more toward preventing the spread of bovine tuberculosis than any other measure that could be adopted; (4) that the danger of infection from bovine tuberculosis may be reduced to very small proportions, if not wholly eradicated, by sanitary measures, inspections, and physical examinations by the State, in co operation with local authorities; (5) that such inspections, once inaugurated, could be maintained without an expense that would be burdensome to the State.

Dr. M. Septien, of Queretaro, Mexico, read a paper on

COMPULSORY VACCINATION.

He stated that compulsory vaccination was not carried out from the year 1876 until 1884, and in 1885 such a strong epidemic broke out that in nine months in Montreal thousands were attacked by small-pox, causing the death of 3,500 persons. He cited this as one of the most noted examples of the rapid spread of small-pox. A Pullman car conductor arriving from Chicago, where he had contracted the disease, was the vehicle of infection. Other examples were given, showing the disastrous effects of the indolence or the preoccupation of the masses and the negligence of the authorities.

REPORT OF THE COMMITTEE ON DEMOGRAPHY AND STATISTICS IN THEIR SANITARY RELATIONS.

The first part of this report, which was read by the Chairman, **Dr. Cressy L. Wilbur**, of Michigan, recommended the adoption of the Bertillon system of classification of causes of death by the Association, on the ground that it would render the mortality statistics of different States, provinces and countries fully comparable by sanitarians and others, and thus lead to great improvements in sanitation. Reliable and thoroughly comparable mortality statistics were absolutely essential for the use of sanitarians, and deductions based upon them were recognized as being of the greatest practical importance in public health work. The Association had now the opportunity to unify the statistics of a continent, besides bringing the work of mortality registration in North America into the closest relations with European statistics. At present the classifications used in the various States were in chaotic condition, nearly every one being different. This was true, even when the general system was apparently the same, so that data could be compared in the different registration reports only with the greatest uncertainty.

The progress of the classification recommended had been so rapid in the last two months that a supplementary report was necessary to bring the history of the movement down to the present time, and to provide for its further extension. The Conference of State and Provincial Boards of Health of North America had unanimously recommended its adoption at the meeting held last month at Detroit, and no less than twelve American States had formally adopted it since the beginning of the present year, besides which several others were only waiting for the action of the Association.

The formulation of a plan of international union of the countries using this system, whereby revisions can be made when necessary, occupied a considerable part of the report. The necessity of immediate action was strongly urged in order that the revised classification might be available for use in 1900. The Committee gave a practical example of the celerity which they recommended by stating that the plan of revision proposed, which was not drafted until after the Conference of the Boards of Health at Detroit, had already been submitted to the highest statistical authorities of France and their cordial approval and the promised co-operation of the French statistical service obtained. Correspondence is being conducted with the registration offices of Europe and South America, and arrangements have been made to announce the results of the revision at the session of the International Congress of Hygiene and Demography at Paris in 1900. The plan provides for consultation of pathologists, sanitarians and all persons making use of mortality statistics, as well as the registration offices, and the decision as to changes from the present form is to be determined by ballot of the registrars actually engaged in the preparation of such reports.

The system of classification and plan of revision were adopted by the Association, and the members of the National Commissions for the countries represented were appointed as follows: Canada: Drs. Peter H. Bryce, E. Pelletier, and E. P. Lachapelle; Mexico: Drs. E. Licéaga, J. E. Montjaras and J. Ramirez; United States: Drs. S. W. Abbott, A. G. Young and C. L. Wilbur.

Dr. J. Ramirez, of Mexico, read a paper on

LEPROSY ASYLUMS.

He said that in the greater part of America leprosy had gradually disappeared, although it had left extensive foci, one in Columbia, and the other in Brazil. The disease was rarely found in Canada, although well-established cases had been seen. In the United States there were still a few small foci, which were found especially in Louisiana, Texas, California, Minnesota, Oregon, etc., but the recent annexation of the Sandwich Islands placed vaccination in an especial condition to at once undertake measures of defence against that immense focus of leprosy, which was so well known and dangerous. He recommended a full investigation of the lepers of North America.

LEPROSY IN MINNESOTA.

Dr. H. M. Bracken, of Minneapolis, read a paper on this subject.

He said that the State Board of Health of Minnesota had knowledge of fifty-one lepers having resided in that State. Of these, seventeen had died before 1890. Of the thirty-four added to the records since 1890, eighteen were first reported upon in 1891, two in 1892, three in 1898, two in 1894, two in 1897, and seven in 1898, to date, September 15th. Little is known of the nationality of the seventeen who died before 1890, but from various reports he said it was safe to presume that they were all from Norway. Of the late thirty-four cases, twenty-nine were probably from Norway, and five from Sweden. Of the five from Sweden, one was reported first in 1894, the other four in 1898. Of the thirteen lepers known to be living, he could give but an outline of the present condition of only six. He drew attention to the following facts as emphasized by the records:

(1) The impression that leprosy immigrants from the Scandinavian peninsula were all from Norway was a wrong one, as five of eleven lepers placed on file by the Board during 1897 and 1898 were from Sweden.

(2) The feeling that physicians could quarantine against lepers by watching immigrants was an unsafe one. The family history of all immigrants from the country where leprosy prevails should be secured before they are allowed to embark for America, and no member of a leprous family should be permitted to land on our shores.

(3) It would appear that the conditions antagonistic to the spread of leprosy in Minnesota were also opposed to sterility, as borne out by the families of several lepers. Some of these had children (as was shown by the following figures — five, five, six, six, four, six, four, five and eight).

(4) It was quite possible for leprosy to die out in certain favored sections of the country, such as Minnesota, without segregation, provided the importation of lepers was discontinued.

(5) Even in Minnesota, one had but to visit some of these lepers to feel that segregation should be insisted upon in all cases. One cannot but feel, on entering a filthy home and seeing a leprous mother careless in her habits, that the children are not safe.

(6) Segregation in single States is not practicable. It would tend simply to drive lepers from States enforcing such a practice to those that were carrying out the system.

(7) A Federal Home should be provided for these unfortunates. They could thus be cared for more economically and more satisfactorily than through any State provision.

(8) In spite of all precautions taken, there will be some leprous individuals in this part of the world for many years to come. The Scandinavian peninsula did not furnish all leprous individuals found in the United States.

Great care must be exercised in dealing with lepers in the future. That we had been constantly importing this disease was a recognized fact, and that the chances of importing it would probably be increased rather than decreased unless great care was taken in dealing with infected countries. All the lepers that came to America did not settle in the Northwestern States, and all sections of the country might not be so unfortunate in affording such poor soil for the spread of the disease as did Minnesota. It was altogether probable that there were some lepers in Minnesota not registered by the State Board of Health.

Mr. J. W. Hughes, of Montreal, read the report of the

COMMITTEE ON SANITATION,

with special reference to drainage, plumbing and ventilation of public and private buildings. He spoke of an increased interest in all matters relating to practical sanitation. The untiring efforts of individual sanitarians in the past had resulted in awakening active inquiry and interest. Private and public sewers were to-day better constructed and more carefully planned than in the past; but the question of the best method for the disposal of sewage had yet to be solved, and was becoming of more pressing importance every day. The question of effective and economical ventilation of dwellings was one presenting many difficulties.

Prof. S. H. Woodbridge, of Boston, dealt with the heating and ventilation of railway cars in a very exhaustive and elaborate report.

Dr. G. Mendizabal, of Mexico, spoke of the diseases of the skin and of the hairy scalp which are commonly transmitted by contagion at schools, and pointed out the ways of preventing them.

Following Dr. Mendizabal there came a symposium on disinfection and disinfectants, the conditions of greatest efficiency of some common disinfectants, methods of testing and using them in cities, hospitals and in quarantine work.

Two papers were presented on

FLIES FROM AN HYGIENIC STANDPOINT.

Abundant evidence was adduced to show that diptera were active agents in the spread of epidemics and of contagion. It is well known that flies transmit the germs that produce active fermentation in alcoholic liquors. They are also known to be important factors in causing the spread of typhoid fever and dysenteric diseases.

The following officers were elected for the ensuing year: President, Dr. George H. Rohe, Sykesville, Md.; First Vice-President, Dr. Henry Mitchell, Asbury Park, N. J.; Second Vice-President, Dr. J. E. Monjaras, San Luis Potosi, Mexico; Secretary, Dr. C. O. Probst, Columbus, O.; Treasurer, Dr. Henry D. Holton, Brattleboro, Vt.

Minneapolis was selected as the place for holding the next meeting, the time of which will be in November, 1899.

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Recent Literature.

A Text-book of Pathology. By Alfred Stengel, M.D., Instructor in Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1898.

This is a handsome volume of eight hundred odd pages and three hundred and seventy-two illustrations. In its plan and subdivisions it is very similar to the well-known "Lehr-buch" of Ziegler. It differs from that work, however, by having about one-third as many illustrations, and about half as many pages.

The aim of the author has evidently been to condense the presentation of the subject matter as much as possible. The language is clear and the descriptions and explanations are, for the most part, probably as lucid as the space would permit.

The work does not seem to us to be specially original either in conception or in execution, and we do not think that it deserves any extensive comment.

We note that the author draws a distinction between lymphadenoma and lymphosarcoma, but in his description of the histology of these growths he fails to make it clear that they are different.

The consideration of the pathology of the kidneys has seemed to us to be specially unsatisfactory. Under the head of glomerulo-nephritis only the capsular form is described, while the more important and comparatively more common intracapillary glomerulo-nephritis is not mentioned. The description of the other forms of nephritis is also inadequate and suffers from lack of sufficient illustrations. The book, as a whole, may be said to be a good text-book, but it is not the best one.

A Manual of General Pathology, for Students and Practitioners. By Walter Sidney Lazarus-Barlow, B.A., B.C., M.D., M.R.C.P., late Demonstrator of Pathology and Examiner in Sanitary Science in the University of Cambridge, etc. Philadelphia: P. Blakiston, Son & Co. 1898.

This is a book of about eight hundred pages. It is written with the idea of presenting the subjects of general and experimental pathology and of pathological physiology, and leaves out almost entirely the details of pathological anatomy. It thus fills a certain deficiency in our text-books on pathology. The author's style is pleasing and clear. The subject matter is generally up to date. A valuable feature is the list of references to pathological literature, placed at the end of different sections of the book.

The book is entitled a "manual," but we are rather inclined to regard it as a collection of essays on important divisions of pathology. It shows originality of thinking and knowledge of the subjects treated.

The work deserves to be successful and we are glad to recommend it to students and physicians who wish to read an excellent presentation of the principles of pathology.

The Medical News Visiting List, 1899. Philadelphia and New York. 1898.

This excellent "Visiting List" comes out in its usual convenient form and presents its usual well selected and arranged contents. It has been carefully revised and brought up to date.

Those who are accustomed to its use will continue to use it, and to others it may be strongly recommended.

Histology, Normal and Morbid. By Edward K. Dunham, Ph.B., M.D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. New York and Philadelphia: Lea Brothers & Co. 1898.

This book is written with the purpose of supplying students of medicine with a text-book in histology which will not only contain an account of normal histology but also of the principles of pathological histology. It consists mainly of two principal parts, one on normal histology and the other on the "histology of the morbid processes." There is also a short part devoted to histological technique. The part on normal histology is the largest and most important of the book. Its descriptive matter is clearly expressed, and is thoroughly up to date. The distinguishing and most valuable features of this part and of the book are the numerous illustrations. Many of these are excellent, and new in American text-books. A number of subjects have seemed to us to be worthy of mention as being remarkably well illustrated, namely, the circulatory system, spleen, ovary, male reproductive organs, central nervous system, lymphatic glands, ductless glands and organs of special sense. In the description of the histology of the kidney we are glad to note that the cilia-like appearance in the epithelial cells of certain of the convoluted tubules are figured and mentioned. This is the first time that we have seen this point referred to in any book.

The account of the formation of the placenta is too brief, and is far from clear, while the structure and histology of that organ are only touched upon. We hope to see this omission corrected in the second edition.

The part devoted to the "histology of the morbid processes" aims at presenting only the general principles of the subject, and includes only a very brief account of some important processes. The author's idea, as expressed in his preface, is that the special applications of the principles to individual lesions may be better left to the classroom instructors. We think, however, that the average student of pathological histology absorbs more readily concrete statements and instances than general principles from his text-books, so that it is doubtful, in our opinion, whether this part of the work will conduce very much to its general use.

The subject matter of the part is considered under the various headings of "Degenerations and Infiltrations," "Atrophy," "Hypertrophy and Hyperplasia," "Metaplasia," "Tumors" and "Structural Changes Following Damage," the last-named heading covering infectious processes, inflammation and reparative processes. While the presentation of the subject matter of this part is good as far as it goes, it is inadequate for the needs of the majority of students. It is well illustrated.

The part on histological technique gives an account of some of the more important histological methods and of some laboratory methods that are of special importance in connection with clinical diagnosis.

Looking at the work as a whole, its great merit is the part on normal histology, which is distinctly good, and makes the book a welcome addition to the list of medical text-books. As a text-book on histology, whether for the medical student or for a work of reference, we can heartily recommend the book.

Text-book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Ph.G., Professor of Chemistry and Toxicology in Long Island College Hospital, Professor of Organic Chemistry in the Brooklyn College of Pharmacy, etc. Fifth edition. Philadelphia: P. Blakiston, Son & Co. 1898.

This book is divided into five parts. Part I treats of chemical physics with chapters upon heat, light, electricity and crystallography. Part II treats of theoretical chemistry; Parts III and IV of inorganic and organic chemistry; Part V of physiological and medical chemistry.

The book represents a more extended and complete work upon descriptive chemistry as designed for use in medicine than any of the works recently published upon this subject.

The subject matter is excellent. The descriptions are detailed and very complete. All of these properties make the book an excellent one for a book of reference. Indeed, if the book be considered in the light of this purpose, it is hard to find anything in it for adverse criticism.

As a work designed for the student of medical chemistry, however, it cannot claim the same freedom from faults. It is a question, in the first place, whether the attempt to include so much in a work for beginners in this study is not a mistake. Emphasis and clearness are frequently lost in abundance of text or multiplicity of detail. This criticism applies in this work to the inclusion of so many subjects rather than to the quantity of matter upon any one subject.

A more positive fault of the work is a want of elementary clearness in the definitions and descriptions. In teaching the natural sciences one cannot but be struck by the absolute necessity of keeping one's text thoroughly elementary in character. The beginner must have his definitions and descriptions expressed in terms, and illustrated by images, with which he is conversant.

In the chapters upon theoretical chemistry in particular this work in hand has too little of this elementary character. This fault it shares with a majority of text-books upon this and other allied subjects. But that it is a fault and not a condition dependent upon the nature of the subject is demonstrated by another work upon chemistry lately reviewed in these columns, which leaves nothing to be asked in the simplicity of its style.

Plague at Madagascar.—A cable message from U. S. Consul Gibbs at Tamatave, Madagascar, announces that bubonic plague has appeared at that place.

THE BOSTON

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WHAT IS A DISEASE?

AT a recent meeting of a society in Boston composed chiefly of physicians interested in the study of mental disease, a paper was read which concerned itself with the unity of "The Acute Psychoses as One Disease." The reader of the paper attempted to establish the affirmative side of this thesis, with much acumen. He drew attention to the vagueness of the current literature relating to psychiatry, to the fact that the same symptoms occur in a variety of abnormal conditions, that frequently a variety of symptoms occur in one so-called disease, notably in paralytic dementia, and, finally, that modern research on the pathological anatomy of the nerve cell has shown parenchymatous changes associated with varied morbid mental states. From these main facts, elaborated with much detail, the writer sought to demonstrate the point, that what we commonly speak of as different mental diseases, characterized, for example, by depression or exaltation, are, in reality, but one disease, with a pathological anatomy in structurally altered cortical cells.

The discussion following this somewhat radical point of view was antagonistic and desultory — antagonistic because of the deeply-rooted faith that is in us that no one fundamental process is likely to account for such varied phenomena as we see in mental disorders, and desultory because no preliminary statement was made as to what the writer personally meant by disease. That he had a conception no one can doubt, but that every other person in the assemblage also had his conception, and that each was different from every other, is just as little open to doubt. The difficulty in this, as in many other discussions, certainly lay in the fact that there was no common basis of argument, because of the uncertainty surrounding the exact meaning of the word "disease."

That the word has a wide range of significance no one will be disposed to deny, and it is equally true that its significance is continually changing as knowledge advances. Symptoms are, by degrees, being relegated to their true place as mere manifestations of morbid processes, and are less and less being dignified as, in themselves, entities. It is, therefore, certainly desirable for purposes of exact thought that we should all frame for ourselves a definite conception of what we mean when we use that commonest of medical terms "disease."

The "Century Dictionary" gives the following definitions:

(*a*) In general, a morbid, painful or otherwise distressing physical condition, acute or chronic, which may result either in death or in a more or less complete return to health; deviation from the healthy or normal condition of any of the functions or tissues of the body.

(*b*) An individual case of such a morbid condition; the complex series of pathological conditions causally related to one another exhibited by one person during one period of illness; an attack of sickness.

(*c*) A special class of morbid conditions grouped together as exhibiting the same or similar phenomena (symptoms, course, result), as affecting the same organs, or as due to the same causes, etc.

Huxley has defined disease as "a perturbation of the normal activities of a living body."

Evidently these definitions are vague, and are of small help in the final determination of our conceptions. This is due to a perfectly definite cause, and that is, the growth of knowledge. Hippocrates might perfectly well have defined disease as "a perturbation of the normal activities of a living body," so broad is the generalization. The moment we look at the matter critically we find certain fairly well-marked phases of thought through which men have gone in their search for exact statements, illustrated by the successive definitions of the "Century Dictionary."

In the first place, that which was superficially apparent was spoken of as a disease. So, fever, or a cough, or a wasting of the body, or an attack of unconsciousness, or a combination of one or more similar symptoms were spoken of as diseases. That these crude conceptions are still firmly rooted in the popular mind needs no reiteration here, but, nevertheless, they belong to the infancy of medicine. A second stage, and a great step in advance, was made when pathological research came into vogue. Then there came the insistence that the fever or the cough or the emaciation was merely the superficial expression of a process, the true nature of which could only be known by a painstaking post-mortem investigation. In other words, our conception of disease was broadened by an added element of fundamental importance, usually a pathological process, which, again, might manifest itself in varying ways, depending upon the organ or tissue involved. Slowly, but surely, therefore, we have come to picture to ourselves a morbid process, with its accompanying symptoms as a disease, subordinating the superficial manifestations to the underlying lesion.

A third stage, upon which we are just entering, surely lies in the field of etiology. Here the researches of the bacteriologist have been of enormous value in clarifying our ideas. Through this means, in addition to the symptoms and the lesions, we are arriving at a knowledge of causes. Unquestionably, physiological chemistry and allied sciences must come to the aid of bacteriology to make the explanations anything like complete; and not until that is done may we speak with scientific accuracy of a disease as an "entity." In some cases this has been accomplished, and here we are on firm ground; in others progress is being made, and in others, still, a beginning is hardly yet in sight. In this latter category must certainly be included the so-called diseases of the mind.

There is no better example of these successive stages of thought than that offered by tuberculosis. At first, stress was laid merely upon the fact of wasting, with the accompanying cough and disturbed respiration, hence its popular name, "phthisis"; then it was found that the lungs were commonly diseased, and that herein lay an explanation of the superficial signs; later still the cause was found, and our whole conception thereby changed. Now we speak of *tuberculosis*, and we know that it may run its course with none of the symptoms popularly attributed to it. Tuberculosis is quite a different thing from phthisis, because the emphasis is placed where it belongs, on a process produced by a definite cause, and not upon its more or less chance accompaniments. Examples of this sort might easily be multiplied; a like analysis would always, we believe, lead to the same result.

If this be true, we do right when we insist upon a definition of what is meant by a disease before we enter upon a discussion as to whether it is one or many. We must state definitely where we place our emphasis — on symptoms, or pathological anatomy, or causes, or all combined. Could this be done, no doubt many words which lead to no conclusions might be saved. This is all the more true because there is chance for a difference of opinion, and, in fact, for so wide a diversity that no common ground is left as a basis for argument.

It goes without saying, that what we must regard as a logical definition of a known disease, namely, a morbid process, caused by a specific agent and leading to constant symptoms, is one which is applicable to relatively few conditions in the human body. This should, however, make us more, rather than less, exact in our use of language.

It does not follow from this that we may not for purposes of classification postulate, as probable elements in definite diseases, certain groups of symptoms, which occur constantly together. This is a fair method of science, and the chances are certainly in favor of the general establishment of the hypothesis, as facts relating to etiology and pathological anatomy accumulate. This method is particularly necessary for those working in the obscure field of psychiatry. Evidently here the problem presents itself in its most subtle form. When so distinguished an investigator as Nissl informs us that not in a single case of mental disturbance has he failed to find changes in cortical cells, and, in the same paper, that these changes give no true information as to symptoms observed during life, we of less knowledge are justified in withholding judgment as to the unity or diversity of morbid mental states. We must either say that there is no mental disease, that it is all a chaos of symptoms, or else that there are probably many diseases most imperfectly known. To say that we have a pathological anatomy of morbid mental processes, and, much more, a satisfactory etiology, is going far beyond the bounds of our present knowledge. Hence, to our mind, the discussion as to the unity or multiplicity of mental disease is absolutely unavailing. How are we to decide such a question when we have no idea what the disease is of which we are speaking?

In general, it must be evident to all thinking people that we need and must have a clear and somewhat uniform conception of what we, one and all, mean by a "disease." It is unquestionably time to set up for ourselves an absolutely definite idea in the matter, particularly if we propose to enter into argument.

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THE MASSACHUSETTS HEALTH REPORT.

THE twenty-ninth annual report of the State Board of Health of Massachusetts for the calendar year 1897 has to do with a population of approximately 2,610,000 people.

Of the 2,500,183 persons by the census of 1895, the number of native born was 1,735,253. There were 764,930 persons of foreign birth; 955,726 had both parents native, while 1,298,463 had both parents foreign. The number of those of mixed parentage was 203,206, or 8 13 per cent. of the total population. The number of persons for whom the facts as to parentage are unknown is only 42,788, or 1.71 per cent.

There has been a general decrease, with a fair degree of uniformity, in the death-rate from the principal infectious diseases, from 93 deaths per 10,000 living for the period 1861–65 to a little more than one-half that mortality in 1897.

During the year, 18 cases of small-pox were reported, with three deaths. The death-rate from typhoid fever, 2.47 per 10,000, while showing a gratifying decrease, still leaves room for improvement. The rate from diphtheria, 6.6, shows an improvement, while the remarkable reduction in percentage of deaths to cases, 27.9 to 15.1, from 1894 to 1896, must be explained by better treatment. The severe epidemic of cerebro-spinal meningitis was carefully investigated for the Board by Drs. Councilman, Mallory and Wright, and their special report is of the greatest value to preventive medicine. Dysentery has ceased to be a prominent factor in the mortality of the State. Malarial fever prevailed less extensively than in the previous year.

At the bacteriological laboratory work of great practical value is done in the examination of diphtheria cultures received from all parts of the State (2,204), of material suspected to contain the bacilli of tuberculosis and of blood for the malaria plasmodium. Diphtheria and tetanus antitoxin are also supplied to physicians and boards of health.

The board made investigations and gave advice during the year with regard to water-supply in 29 cases; with regard to sewerage and sewage disposal in 21 cases; with regard to pollution of streams in three. These matters occupy nearly a hundred pages of the report and are required by the statute to protect the purity of inland waters.

No action further than the board's advice was required in the offensive and noxious trades, and this was also freely and frequently given with regard to nuisances the control of which is in the hands of local authorities.

The usual investigations on the examination of water-supplies, on the examination of rivers, on water-supply statistics, rainfall and flow of streams, on filtration of sewage and its purification, on filtration of water, on sewage disposal in cities and towns in the State by intermittent filtration occupy more than four hundred pages of the report, and furnish exact information in specific cases and general knowledge of the widest scope and the greatest usefulness in these most important matters.

Under the food and drug inspection act, 6,046 samples of milk were examined during the year, of which 31.3 per cent. was found below standard; of 3,944 samples of other food, 12.8 per cent. was adulterated; of 690 samples of drugs, the percentage of adulteration was 35.9. There were 65 prosecutions, of which 51 were for adulteration of milk, and 64 convictions, with fines of $2,756.60.

In their three years of work, the board has distributed 9,611 bottles of diphtheria antitoxin, representing nearly 10,000,000 units, for 953 cases, in which the fatality has been 10.4 per cent. Out of 294 cases in which antitoxin was administered on the first day of illness, there were only 13 deaths, or 4.4 per cent.; and out of 711 cases treated in the first two days of illness, there were only 46 deaths, or 6.5 per cent.; while the deaths in 156 cases in which antitoxin was not employed until the sixth day or later were 30, or 19.2 per cent.

The statistical summaries of disease and mortality are made up of (1) the voluntary weekly mortality returns from cities and towns, serving principally to show the seasonal prevalence of each of the infectious diseases and the mortality of children under five years of age; (2) a digest of cases and deaths obtained from annual reports of local boards; (3) a critical summary of the reports of every case of "disease dangerous to the public health" which the local boards are required to report to the State Board; (4) the full reports of deaths occurring in each city and town having over 5,000 inhabitants, in accordance with the act of the Legislature, which provides that "in each city and town having a population of more than five thousand inhabitants, as determined by the last census, at least one member of said board shall be a physician, and the board shall send an annual report of the deaths in such town to the State Board of Health. The form of such reports shall be prescribed and furnished by the State Board of Health."

Under Health of Towns, reports from 55 cities and towns indicate a very marked progress in sanitary matters in many directions. Eight cities and towns have hospitals for infectious diseases.

The medical profession and the State generally are justly proud of the board's twenty-nine years of excellent work and its beneficent results.

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MEDICAL NOTES.

YELLOW FEVER AND WINTER WEATHER. — The Health Reports of the Marine Hospital Service for the week ending December 10th present only one case of yellow fever, and that occurring in the City of Mexico.

THE SANATORY CLUB OF BUFFALO. — The Sanatory Club of Buffalo, the President of which is H. R. Hopkins, M.D., and the Secretary Thomas B. Carter, M.D., has presented a very interesting programme for its meeting of Wednesday, December 14th, the topic of the evening being "Hygienic Camps," and the following papers having been promised: "The Hygienic Camp," Henry R. Hopkins, M.D., Professor of Hygiene, University of Buffalo; "The Camp of Instruction," Lieut. Peter C. Harris, Quartermaster Thirteenth United States Infantry; "Sewers," C. E. P. Babcock, C. E., Assistant City Engineer, late Major Sixty-fifth New York Volunteers; "Water-Supply," L. H. Knapp, C. E., Assistant Superintendent and Engineer Bureau of Water; "Garbage and Sewage Disposal," Edward Clark, M.D., late member of the Committee on Disposal of Sewage and Garbage, American Public Health Association; "Statistics," Lieut. Paul B. Malone, Thirteenth United States Infantry; "Walks and Streets," H. C. Gardner, Seventy-fourth Regiment, N. G. S. N. Y.; "The Relative Importance of Flies and Water-Supply in Spreading Disease," M. A. Veeder, M.D., Lyons, N. Y.

DEATH OF SIR WILLIAM JENNER. — Sir William Jenner, physician in ordinary to the Queen and the Prince of Wales, died Monday, December 12th. He was born at Chatham, in 1815, and was President of the Royal College of Physicians and Surgeons from 1881 to 1889, when he retired from the practice of his profession. He was the first English physician to convince his countrymen of the difference between typhus and typhoid fever, although this differentiation had been much earlier demonstrated by Louis in Paris, and by his students, Gerhardt and Stilte, of Philadelphia, Jackson and Shattuck, of Boston, and Stewart, of Scotland. In 1861 Jenner was appointed physician extraordinary to the Queen, and the next year he was gazetted physician in ordinary to Her Majesty, receiving the same preferment, in 1863, in the household of the Prince of Wales. In recognition of his services, rendered during the Prince's illness from typhoid fever, he was made knight commander of the Bath. He was a consultant of great skill and large experience.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, December 14, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 58, scarlet fever 18, measles 87, typhoid fever 8.

Death of Dr. George Z. Higgins. — Dr. George Z. Higgins died Monday, at Strong, Me. He was born in 18 2, and graduated at the Maine Medical School, class of 1858. He served during the war as surgeon in the Fifteenth Regiment, Maine Volunteers.

Dinner to Physicians of the Hospital Ship "Bay State."—A dinner was given last week by the officials of the Atlantic Works to the physicians who served on board the hospital ship *Bay State* during the war. The officers of the Massachusetts Volunteer Aid Association also were present as guests.

The Boston Society of Medical Sciences. — A meeting of this Society was held at the Harvard Medical School, Tuesday evening, December 6th. Dr. Franklin Dexter gave the results of his researches "On the Morphology of the Digestive Tract of the Cat." The work was done on embryos by means of the method of dissection, to which Dr. Dexter paid a warm tribute. The general conclusions were, that there is little constancy in the arrangement of the coils of the intestine in the cat; that the growth of the liver exerts a definite influence on the position of portions of the gut, as also of the stomach; and that mechanical causes, in general, play an important part in the development of the viscera studied. Dr. Morton Prince read a paper on "An Experimental Study of Visual Hallucinations," the subject being a person of exceptional susceptibility to suggestion. By means of hypnosis three personalities were easily distinguishable, the extent of whose mental life increased progressively the deeper the hypnosis. Particularly interesting was an experiment relating to delirium. Dr. Prince was of the opinion that the visions he was able to produce artificially did not differ in origin from the spontaneous varieties. Dr. W. T. Whitney demonstrated a simple apparatus for collecting and separating sediments. He also showed a translucent slate, by means of which rough drawings of specimens might be made, to be later transferred to paper.

NEW YORK.

A Board of Embalming Examiners. — Governor Black has appointed a State Board of Embalming Examiners, consisting of five members, in accordance with an act passed by the Legislature at its last session. The law provides that after the present year no person shall practise embalming in the State unless he shall have received a certificate of qualification from this Board.

Typhoid Fever and Milk Cans. — Dr. Eugene Monaghan, Sanitary Superintendent of the Borough of Bronx, has sent to the Board of Health a report, in which are included the investigations of Mr. Hirshman, the analyst of his department, relating to a recent outbreak of typhoid fever, of comparatively mild type, in the district under his supervision. It was ascertained that all the cases investigated, with the exception of four, are in families supplied with milk furnished by one large dealer, who obtained the milk from Copake, Westchester County, and that there were two cases of typhoid in the dealer's own household. His wife, it was found, was the first person attacked, and in her case the disease developed itself on November 8th. Of the four exceptional cases mentioned, two were in soldiers who contracted the disease at Camp Black. While the origin of the typhoid has not as yet been positively determined, Dr. Monaghan expresses the opinion that the evidence obtained points to the probability that the cans which contained the milk were washed in water which contained typhoid germs, some of this water remaining in them at the time they were filled. The spread of the disease appears to have been checked, as no new cases have been reported since December 5th.

Endowment of a Children's Ward for Roosevelt Hospital. — At a meeting of the Trustees of Columbia University, held December 5th, President Low announced that a gift of $50,000 had been received (the name of the donor to remain secret) for the endowment of a children's ward in Roosevelt Hospital, to be known as the "Abram Jacobi Ward for Clinical Instruction." The terms of the gift provide that the University is to name the clinical teachers. It was also announced that the Chamber of Commerce Waring Memorial Fund of $100,000 will, after the death of the widow and daughter of Colonel Waring, who are to have the use of its income during their lives, revert to Columbia for the foundation of a chair on municipal administration. About three-fourths of the required sum have already been subscribed.

A Prolific Immigrant. — Among the steerage passengers of the steamship *Lucania* on a late voyage was a woman from County Kerry, Ireland, who had among her children two sets of twins and one set of triplets.

A Seven Hundred Pound Patient. — There is now in the wards of the Harlem Hospital the largest patient ever admitted into that institution. She is Mrs. Hannah McKenzie, a paralytic, fifty-eight years of age. She is said to weigh seven hundred pounds, and it required the services of nine men to carry her from the fourth floor of the house in which she lived down to the hospital ambulance. Up to her present illness she was exhibited as a fat woman in the dime museums.

Report of the Red Cross Work. — The American Red Cross National Relief Committee held a meeting, on December 9th, to receive the reports of its Executive Committee and the various field agents upon the work accomplished during the war. Bishop Potter presided, and among the speakers was Dr. A. M. Lesser, Chief Surgeon of the Association. The report of the treasurer showed that the Relief Committee had received, from May 9th to December 1st, a total of $305,229, and that the expenditures amounted to $277,604, leaving a balance of $27,625.

Death of Dr. Gouverneur Mather Smith. — Dr. Gouverneur Mather Smith, one of the foremost representatives of old New York, both in its medical and social aspects, died on December 8th, of cardiac disease. His father, the late Dr. Joseph Mather Smith, was a leading physician of the city and professor in the College of Physicians and Surgeons. Dr. Smith was graduated from the University of the City of New York in 1852, and from the College of Physicians and Surgeons in 1855. In 1856 he was appointed physician to the DeMilt Dispensary. He was in the medical service of the United States Army during the Civil War. In 1866 he was appointed an attending physician to the New York Hospital to succeed his father. From 1875 to 1878 he was one of the Vice-Presidents of the New York Academy of Medicine, and afterwards one of the Trustees of the Academy. He was a frequent and valued contributor to medical literature, and was an authority on genealogy and local historical matters.

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THERAPEUTIC NOTES.

Intestinal Atony:[1]

℞	Sodii benzoatis	gr. lxxv
	Pulv. rhei	gr. lxxv
	Pulv. nuc. vom	gr. ss

M. Et divide in cachets No. 10. Sig. Two to three a day.

Facial Erysipelas:[2]

℞	Acidi carbol. Tinc. iodini Alcohol } āā	ʒ ii
	Ol. tereb.	ʒ ss
	Glycerini	℥ i

M. Sig. Paint every two hours and cover with an aseptic gauze.

Whooping Cough. — J. Madison Taylor[3] finds the following, when administered to a child every three hours, of great value in pertussis:

℞	Antipyrine	gr. ss to i	
	Ammon. chlor.	gr. iiss to gr. v	
	Syr limonis	ʒ ss	
	Aquam ad	ʒ i	M.

or

℞	Antipyrine	gr. ss to ii	
	Ammon. brom.	gr. i to ii	
	Ammon. mel.	gr. v	
	Syr. simpl. ad	ʒ i	M.

For the Treatment of Chronic Morphinism.[4] — Hirt[5] recommends first of all total abstinence from morphine. The first three days are the most difficult for the patient to overcome; but once passed there is hope for recovery. During these three days chloral (45 gr.) or trional must be administered to combat the insomnia consequent upon the withdrawal of the drug. If the sleep is restless, patient is given a warm bath of thirty minutes' duration, followed by a cold douche. On the fourth day begins the treatment by suggestive therapeutics carefully conducted, at first suggesting general harm from morphine, and eventually creating in the patient a feeling of horror and repugnance towards the poison. Out of thirty-five patients treated in this manner, twenty-seven were entirely cured, two committed suicide during the first three "terrible" days, the rest were lost track of or relapsed.

Treatment of Chancroid Sores with Caloric Radiation. — M. Reynaud[6] heats the point of the thermo-cautery to white heat and holds it during four or five minutes some two centimetres over the sore. The application is repeated every twenty-four hours. The sensation experienced by the patient is rather disagreeable than painful. This treatment is applicable to all the stages of chancroid ulceration, but preferably after the acute pus-formation symptoms have subsided, when improvement and cicatrization take place with a rapidity really surprising. As a dressing, in the intervals of the treatment, a layer of absorbent cotton saturated with distilled or boiled water is sufficient.

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Correspondence.

SURGERY IN PARIS.

Paris, November, 1898.

Mr. Editor: — Some of your readers will be interested in the following notes on surgery in Paris. They are the result of visits to the leading Parisian hospitals and will give a fair impression of the principal surgeons of Paris, those who exert large influence upon medical students and consequently upon embryo surgeons.

It may be thought that my criticisms are stringent. My intention is to make them so, otherwise they would be of little value. While I shall try to give every man his due, it will be my aim to show where it seemed to me that surgical work might have been performed with greater care and with stricter attention to that *sine qua non* of modern surgery — *asepsis.* As will be seen, there are wide differences in the procedures of Parisian surgeons of to-day. But while one surgeon whose work is bad severely criticizes the methods of men whose surgery is excellent, the latter are kindly in their judgment of their surgical *confrères.* Still, as one moves about among them he is astonished by the freedom of cynical criticism of each other in which they indulge — a liberty which no American surgeon would allow himself, even though he felt inclined so to do. Indeed, such a course would cost him reputation for courtesy and loyalty and would inevitably lower his professional standing; but such a result does not seem to accrue in Paris. Whether envy or jealousy be the source of this ungenial and non-fraternal habit I was unable to learn. It is, however, gratifying to be able to add that, in my experience, this peculiarity was not general, but was confined to a few men; still these exceptions were men of high standing whose example is influential.

In the hospitals of Paris there is great abundance of surgical material, and the surgeons find it difficult to keep pace with operative needs. Even after the summer vacation has begun the surgeons continue their work at the usual hour and the visitor will find examples of every sort of operation. Abdominal surgery, however, seems to pre-dominate, and the number of uterine, ovarian, tubal and cystic operations upon females of all ages from sixteen years and upward is very large. The extreme youth of many of the patients is striking and surprising. Is it because they are French?

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[1] Huchard, Gazette des Hôpitaux, 123, 1898.
[2] Canadian Practitioner, June; Münch. med. Woch., 38, 1898.
[3] The Practitioner, November, 1898
[4] Münch. med. Woch. 14, 1898.
[5] Ther. Mon. Hefte, 10, 1898.
[6] Marseille Med., September 1, 1898.

The amount of hospital work which is done in Paris is immense, and the devotion of surgeons to public patients is nobly unselfish.

A very satisfactory preparation of patients for operation is general, and, before he operates, the average surgeon is careful to bring his patients up to a good condition. Chloroform is the usual anesthetic, but those surgeons who use ether do not regret the change, on the contrary, they criticize the men who continue the administration of chloroform. Ethyl bromide, which quickly prepares a patient for ether, is not used anywhere in Paris. If it be used, it did not fall under my observation. Ether is given from a flannel covered cone without sponge, and is freely used. Chloroform is applied upon a bit of cotton cloth which covers the nose and mouth of the patient and, anesthesia once begun, the cloth is seldom lifted, the fluid being added by drops.

In but one instance did I see the pulse watched during the operation.

Catgut is in general use but silk is commonly adopted for internal sutures, the catgut ligating the external wound. In some cases catgut is used both internally and externally. One surgeon confined himself, for all requirements, to ordinary sponges.

Large differences in the use and care of gauze sponges, bandages and cloths were noticeable, some surgeons leaving the canisters open from beginning to end of the operation, the assistant passing these conveniences to the surgeon by hand. Other surgeons insist upon closure of the canister at once after opening it, and the gauzes are taken out, passed to them by means of aseptic forceps, and they are applied without being touched by hand.

Then, according to the surgeon, there is the dry and the wet pan of instruments. In the one case the latter are laid upon dry aseptic gauze, in the other they are covered by sublimated or carbolized water. In the first case one usually sees instruments in use thrown down among and therefore soiling clean instruments, to be afterward picked up by bloody and soiled fingers, the entire collection finally becoming a pell-mell assortment of clean and bloody utensils. There are exceptions to this carelessness.

Again, a surgeon keeps his knives, etc., in an aseptic fluid, and during the operation he will be seen to wash his soiled hands in the fluid of the trays.

Ligatures are sometimes wound upon delicate spools of glass, sometimes are laid upon the instruments in hanks. In no instance did I see glass spools suspended in glass racks in which they revolve, these being immersed in sublimated water. In all cases ligatures were kept exposed to the air, or the spools were kept among the instruments in aseptic fluid, but needles were unfailingly threaded by bloody fingers.

Throughout my study of the methods of the surgeons of Paris I kept in mind, as my standard of comparison, the only perfect application of asepsis which I had seen abroad, namely, at the hands of Kocher of Berne. For example, his needles were threaded from spools which spun in germicidal fluid, by a woman whose hands constantly dripped with aseptic applications; the needle was grasped by Kocher's needle-holder and no soiled hand ever touched the ligature. His instruments were always kept submerged, were passed to him by forceps, and, during use, were frequently plunged into special glass bowls of lysol or sublimated water. Moreover, he never allows a visitor to enter his operating-room until the latter has assumed a freshly baked linen coat, which he must button to the throat, turning up the collar, the skirts reaching his feet. In only one of the Parisian clinics which I visited was this required.

Now, it is simply logical, if visitors enter an operating-room directly from the street in ordinary attire, that their absolute nearness to instruments, ligatures in dry trays, and to open canisters containing gauzes, not to mention their proximity to the wound, will inevitably endanger the purity of everything about them. Without the excessive care used by Kocher, there is a wide gap between surgical work, which may seem excellent, and easily attainable and nearly perfect asepticism. In some of the Parisian operating-rooms are hung cards bearing the inscription: "You are requested not to touch instruments and, during the operation, not to speak aloud." This brings to mind the varying manner of surgeons while they operate. The majority are quiet and speechless. There are others who talk incessantly with assistants and visitors, explaining the operation in hand, giving reasons for their diagnosis, saying what they expect to find, drawing comparisons between their operation and similar undertakings at the hands of other surgeons. Some are calm and give orders quietly. Others are excitable, critical of assistants, irritable and noisy. The calm men have only two, perhaps three, aids; the excitable surgeons have six to eight assistants and still find fault.

In their dress for operation there is large variety, from one who removes even his shirt and trousers, to assume a special costume, to those who, while wearing aprons, roll up the shirt sleeves, which may be seen to come in contact with the patient, the surgeon's hands and wrists having been purified but not the arms.

The average toilette of the hands is good, although there are those who in this respect are merely perfunctory. The toilette of patients exhibits similar discrepancies. In some instances it was perfect, in others too quickly done and shaving of the parts only half performed.

Cleansing after the operation was rarely satisfactory. In one instance involuntary discharges were left about the anus and upon the nates, and the wound remained in a soiled condition. The claim everywhere, however, was that the death-rate after operation was low. As to care of patients on days following operation, it is usually good, and most wards are fairly clean, some of them markedly so. But in one I saw a woman who had a fractured leg with large destruction of tissue. The limb had not been dressed for two days. It was bathed in pus, was foul and ill-smelling. The surgeon mildly rebuked his assistants. The ward was not clean. I am glad to say that this was a decided exception. It reminded me of an observation which I quoted in a letter written to the Journal from Paris twelve years ago, namely, a surgeon said in my hearing that erysipelas was then "just as prevalent as it was previous to Listerism." I wrote that I was not surprised, for such astonishing uncleanliness as then existed in the wards of the surgeon in question would almost inevitably lead to erysipelas. Such, however, are the changes which since have been introduced that this very gentleman is now one of the strictest disciples of asepticism. It is always the younger men of Paris who are the most particular and the most exacting in the aseptic treatment. The older men have had to abandon old habits and habit is as strong as death and almost as unconquerable.

These older men perhaps still retain a leaven of the contempt for asepticism which pervaded the remark of one of the most famous of American surgeons, who, in addressing his class with reference to Listerism, then new and untried, said, "It is dirty business, gentlemen, dirty business." This was nearly thirty years ago. I was present when the remark was made. If this surgeon were living to-day and his words referred merely to the carbolic spray I should agree with him. But his thought was influenced by the feeling that the methods of his long life were good enough. He was fond of "good, laudable pus." He disliked the bother of the new *régime*.

In applying baked and powdered clay to wounds with good aseptic results, Addinell Hewson unconsciously antedated Listerism, but he was voted a crank. I could not help feeling that some of the older surgeons of Paris yielded to the stern requirements of modern surgery because it was unavoidable. At any rate, their methods were far from precise and careful.

(To be continued.)

METEOROLOGICAL RECORD

For the week ending December 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...27	29.45	28	35	22	100	95	98	N.	N.W.	48	24	N.	N.	1.05
M..28	29.70	29	36	22	95	62	78	N.W.	N.W.	25	14	O.	C.	.05
T...29	29.58	33	40	26	56	61	58	W.	S.	12	2	C.	C.	
W..30	29.31	32	36	29	98	70	84	N.	N.W.	17	16	N.	O.	.35
T....1	29.69	36	40	32	68	62	65	W.	S.W.	17	16	C.	C.	
F....2	30.13	36	44	28	71	61	66	W.	S.W.	14	12	C.	C.	
S....3	30.28	35	41	29	71	75	73	N.W.	N.E.	2	9	O.	O.	
☞	29.73	33	39	27			75							1.45

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 3, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York	3,438,899	—	—	—	—	—	—	—
Chicago	1,619,226	—	—	—	—	—	—	—
Philadelphia	1,240,226	—	—	—	—	—	—	—
St. Louis	623,000	—	—	—	—	—	—	—
Boston	528,463	209	61	9.12	17.28	.48	4.32	2.88
Baltimore	506,389	179	49	11.20	14.56	1.68	3.36	6.16
Cincinnati	405,000	—	—	—	—	—	—	—
Cleveland	350,000	—	—	—	—	—	—	—
Pittsburg	295,000	89	32	16.80	13.04	3.36	5.60	1.12
Washington	277,000	117	35	11.05	11.95	.85	3.40	5.95
Milwaukee	275,000	—	—	—	—	—	—	—
Providence	150,000	68	15	4.41	19.11	2.94	—	—
Nashville	87,754	25	4	8.00	16.00	4.00	4.00	—
Charleston	65,165	34	7	8.82	2.94	5.88	2.94	—
Worcester	108,240	29	12	24.15	6.90	10.35	—	3.45
Fall River	95,919	37	14	13.50	16.20	5.40	2.70	5.40
Cambridge	89,724	26	7	15.40	23.10	3.85	—	7.70
Lowell	88,641	36	14	15.08	16.66	2.77	—	5.54
Lynn	66,703	11	2	—	—	—	—	—
New Bedford	66,340	22	10	12.45	—	4.15	—	8.30
Somerville	61,101	18	3	11.11	16.66	5.55	—	—
Lawrence	57,263	18	7	11.11	11.11	5.55	—	5.55
Springfield	56,501	31	3	9.69	6.46	—	3.23	6.46
Holyoke	43,424	5	3	40.00	—	20.00	—	—
Brockton	37,278	—	—	—	—	—	—	—
Salem	36,883	3	0	—	—	—	—	—
Malden	34,613	10	2	10.00	30.00	10.00	—	—
Chelsea	33,468	13	1	—	7.69	—	—	—
Haverhill	32,022	12	4	16.66	8.33	—	—	—
Gloucester	30,589	10	3	20.00	—	—	—	—
Newton	29,716	11	5	9.09	9.09	—	—	9.09
Fitchburg	29,438	9	4	—	—	—	—	—
Taunton	28,167	16	—	—	18.75	—	—	—
Everett	25,338	6	2	—	33.33	—	—	—
Quincy	23,549	4	2	—	75.00	—	—	—
Pittsfield	22,643	—	—	—	—	—	—	—
Waltham	21,812	8	3	25.00	37.50	—	12.50	12.50
North Adams	20,971	6	4	—	33.33	—	—	—
Chicopee	17,842	7	4	—	42.84	—	—	—
Medford	16,511	5	1	20.00	20.00	—	—	20.00
Newburyport	14,915	3	0	—	—	—	—	—
Melrose	11,032	4	0	—	—	—	—	—

Deaths reported 1,113; under five years of age 315; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 126, acute lung diseases 168, consumption 128, diphtheria and croup 40, typhoid fever 31, diarrheal diseases 24, whooping-cough 11, cerebro-spinal meningitis 5, scarlet fever 3, measles 2, erysipelas 1.

From whooping-cough Pittsburg 4, Haverhill 2, Boston, Providence, Worcester, Holyoke and Peabody 1 each. From cerebro-spinal meningitis Boston, Washington, Worcester, Lowell and Gloucester 1 each. From scarlet fever Pittsburg 2, Cambridge 1. From measles Boston and Gloucester 1 each. From erysipelas Worcester 1.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending November 26th, the death-rate was 17.4. Deaths reported 3,748; acute diseases of the respiratory organs (London) 280, measles 83, fever 82, diphtheria 81, whooping-cough 51, diarrhea 48, scarlet fever 19.

The death-rates ranged from 11.3 in Croydon to 26.1 in Wolverhampton; Birmingham 18.5, Bradford 14.3, Cardiff 12.3, Gateshead 21.6, Huddersfield 12.2, Leeds 18.1, Leicester 18.5, Liverpool 22.3, London 16.7, Manchester 19.9, Newcastle-on-Tyne 18.0, Nottingham 18.3, Portsmouth 17.3, Sheffield 16.5, West Ham 14.7.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING DECEMBER 1, 1898

Stoner, George W., surgeon. Granted leave of absence for seven days. November 26, 1898.

Peckham, C. T., surgeon. Upon being relieved by Surgeon H. R. Carter, to rejoin station at Pittsburg, Pa. December 1, 1898.

Glennan, A. H., surgeon. Relieved from duty at St. Louis, Mo., and directed to report at Washington, D. C., preliminary to assignment to duty at San Juan, Porto Rico. November 26, 1898.

Brooks, S. D., surgeon. Relieved from duty at Port Townsend (Washington) Quarantine Station and directed to proceed to Angel Island, Cal., and assume command of the San Francisco Quarantine. November 26, 1898.

Cobb, J. O., passed assistant surgeon. To proceed to Pittston, Pa., for special temporary duty. November 19, 1898. To proceed to Arizona and New Mexico on special temporary duty. November 29, 1898.

Stoner, J. B., passed assistant surgeon. Granted leave of absence for seven days. November 26, 1898.

Perry, J. C., passed assistant surgeon. To assume command of the Port Townsend (Washington) Quarantine Station in addition to other duties. November 26, 1898.

Young, G. B., passed assistant surgeon. To proceed to Philadelphia, Pa., for special temporary duty. November 22, 1898.

Rosenau, M. J., passed assistant surgeon. Upon being relieved from duty at the San Francisco Quarantine, to report at Washington, D. C., preliminary to assignment to duty in Cuba. November 26, 1898.

Nydegger, J. A., passed assistant surgeon. Granted three days' extension of leave of absence. November 29, 1898.

Stewart, W. J. S., passed assistant surgeon. To proceed to Crisfield, Md., and report upon the advisability of establishing a relief station at that port. November 19, 1898.

Cummung, H. S., assistant surgeon. Granted leave of absence for seven days. November 28, 1898.

Tabb, S. R., assistant surgeon. Granted leave of absence for seven days, to take effect upon being relieved from duty at Vineyard Haven, Mass. November 29, 1898.

Lavinder, C. H., assistant surgeon. Granted leave of absence for seven days. November 29, 1898.

Russell, H. C., assistant surgeon. Granted leave of absence for seven days from November 16, 1898. November 16, 1898.

Parker, H. B., assistant surgeon. Granted leave of absence for two days. November 25, 1898.

Lumsden, L. L., assistant surgeon. Relieved from duty at Egmont Key, Fla., and directed to proceed to Washington, D. C., for orders. November 21, 1898. Assigned to duty as sanitary inspector of U. S. transport "Manitoba." November 28, 1898.

SOCIETY NOTICES.

Boston Society for Medical Improvement.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, December 19th, at 8 o'clock.

Dr. J. J. Putnam will present the subject: "Some of the Aims and Methods of Modern Hydropathy."

Dr. M. H. Richardson will read a short paper on "Diverticulum of the Esophagus, with Extirpation," and

Dr. M. Storer on "Retrodisplacements of the Gravid Uterus."

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society. — The Section for Clinical Medicine, Pathology and Hygiene. There will be a meeting of the Society at 19 Boylston Place, Wednesday, December 21, 1898, at 8 p. m.

At 8 o'clock: Dr. J. N. Coolidge, "A Case of Exophthalmic Goitre."

At 8.15 o'clock: Dr. G. B. Magrath will show an interesting pathological specimen.

At 8.30 o'clock: Dr. Gustav Liebmann will show "An Appliance (Langerhan's) for the more Effective Blowing Up of the Stomach."

At 8.45 o'clock: Dr. W. H. Prescott, "Double Dissecting Aneurism, with Report of a Case."

J. B. Ogden, M.D., *Secretary*,
Harvard Medical School, Boston.

Original Articles.

FEAR NEUROSIS.[1]

BY MORTON PRINCE, M.D.,
Physician for Nervous Diseases, Boston City Hospital.

There is a neurosis which, I believe, has never hitherto been described, and which is, I have learned, very common amongst musicians and others who appear before the public. This neurosis has been overlooked, because it is commonly looked upon as merely the manifestations of timidity or self-consciousness; but I am satisfied that it is more than this, for although it originates in timidity it persists as an automatic physical neurosis long after timidity has ceased to exist, and entirely independent of the original exciting cause. In fact, the characteristic peculiarity of the neurosis is this: that, although the symptoms are the natural physical manifestations of fear, nevertheless they are not accompanied by this emotion, but exist independently of any psychical state as a group of pure physical symptoms. Hence the term phobo-neurosis is more exact than phobo-psychosis.

Two sets of causative factors must be distinguished:

(1) A natural or excessive timidity at the beginning, in consequence of which certain external conditions have repeatedly excited fear and its physiological manifestations (tremor, palpitation, faintness, etc.). By a constant repetition, as would necessarily be the case with a musician, for example, these physical symptoms become welded together into an automatic process which persists as a true habit neurosis. This may be looked upon as a sort of degeneration of nervous processes by which frequently associated actions become grouped together. Physiologically, this is the same principle by which any art (violin playing, fencing, rowing) is learnt; pathologically, it is the basis of many neuroses and psychoses. After a time, as a result of maturer years and experience, the psychical emotion, fear, subsides, but the physiological manifestations persist — an apparent paradox.

(2) After the neurosis has become developed the immediate exciting cause of each individual attack is a primary auto-suggestion in the form of apprehension or expectation that the symptoms will come on under such and such circumstances, such as playing in public, and a secondary direct excitation by the act itself in accordance with the primary auto-suggestion. Such, at least, is the theory which seems to me to best explain the phenomena. But whether or not this is the correct interpretation of the genesis of the neurosis, the existence of the neurosis itself is, it seems to me, unquestionable.

Observation I. A professional singer, thirty years of age, consulted me for the following symptoms: Whenever he sang in public he was affected with (1) feeling of "goneness" and general trembling; (2) feeling of throbbing in the head; (3) palpitation; (4) perspiration; (5) general weakness. The same group of symptoms always appeared and in the same order. The trembling was objective, so that he could with difficulty hold his music. He had suffered in this way from ten to twelve years. He stated most emphatically that at present he had no lack of confidence in himself but, on the contrary, had a high opinion of his own ability — in fact, as he expressed it, was rather "stuck on himself." He did not mind the symptoms *per se*, but they interfered so much with his work as to be a serious hindrance. For this reason he sought advice. He knew of no cause for his trouble, and did not ascribe it to shyness or timidity, as he did not feel shy or timid. He thought it might be due to some sort of organic nervous disease, and this idea and the importance of being able to fill a professional engagement led him to seek advice.

If he was to give a concert, during the two or three days preceeding the appointed time these symptoms came on whenever he thought of the concert, that is, the idea of singing, and even practising, brought them on. He also had then a desire to have a movement of the bowels. This circumstance emphasizes the independence of the neurotic process. Careful inquiry elicited the facts that as a boy he was abnormally shy and bashful, and that when he *first began to sing* he had no confidence in himself. At this time these symptoms developed. But since learning to sing his shyness ceased and he has regained thorough confidence in his ability, but the symptoms which were originally excited by timidity have persisted, so that a sort of paradoxical condition exists, — the physiological manifestation of an emotion without the emotion itself. For it will be remarked that the symptoms in this case are only the ordinary manifestations of timidity and lack of confidence in one's self, such as would be excited in a novice by the ordeal of a public performance.

But in this case, by the law of association and by frequent repetition, they have been formed into an automatic process, so associated with the act of singing or idea of singing that either the act or the idea would excite the whole. But this, as the sequel will show, would not take place unless the subject made a suggestion to himself that this would occur. This suggestion was the apprehension or expectation that the neurosis would appear and spoil his performance.

This expectation was always present in his mind before a performance, and must be distinguished as something very distinct from timidity, which did not exist, as he thought. But I think it is open to question how far any one can analyze and state with precision the nature of his own state of consciousness at any particular moment. Nevertheless little more than traces of timidity was probably present. In other respects his health was good, excepting that he was a poor sleeper, but he was of a nervous temperament. Five or six years ago his health had temporarily broken down from overwork. After this he was worse.

This patient consulted me on a Thursday. He said that on the following Sunday he was to sing in an important concert given by a well-known musical organization. Much depended upon his success, as he hoped, if he sang satisfactorily, to obtain a permanent appointment. I explained to him at length the nature of his psychosis, and the mode of action of the proposed treatment. The following was then written on a piece of paper and given him to learn by heart and to keep constantly in mind:

> I know my symptoms are only a group of nervous processes which a long while ago were associated together by a lack of confidence in my ability to sing. But having now this confidence and knowing the nature of the habit, I know this association will be broken and there is no need to apprehend a return of the symptoms.

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[1] Read before the Medico-Psychological Society, April 16, 1896.

He entered heartily into co-operation with me in carrying out the plan.

On the following day (Friday) he returned and reported that, after having conscientiously done as directed, the neurosis had not returned, although he had practised as was customary with him. This occasioned him much surprise. On this day it was thought desirable, considering the importance of the test to which he was to be submitted, to emphasize the suggestion by repeating it in the hypnotic state. Whether he was hypnotized or not is probably a question of terms. At most he was in what is called the first stage, — which means that he was quiet, passive, without desire to open his eyes, although he could easily do so.

On Saturday he again returned with the same favorable report, having practised without any return of the symptoms. The treatment was repeated and the whole matter impressed upon him again. Sunday he sang. On Monday he reported that he had sung better (as he thought) than he had ever done before, without being disturbed in the slightest degree by his neurosis. There had been, he thought, a slight tremor of the hands while singing, but he did not consider it of any consequence, and was not incommoded thereby. He was in high spirits over what he considered his remarkable cure.

He wrote me as follows a month later, May 1st, in reply to an inquiry of mine regarding his condition:

> MORTON PRINCE, ESQ., M.D.,
>
> *Dear Sir:* In reply to your favor of yesterday. I intended to call, etc. . . .
>
> Now regarding your wonderful cure, for such I regard it: Since I sang for the Handel and Hadyn Society there have been no concerts of any importance only such as had engaged their principals previously, so I have not had a chance to try my newly acquired "nerve" on a large audience, but such singing as I have done has been done with the utmost calmness and fearlessness. I almost felt like saying of myself as is said of a conceited tenor of St. Paul's Cathedral. Being asked at the beginning of the big performance if he was "nervous," he said "yes" — he was nervous for fear his singing would work up the feelings of the audience too much! but not on his own account.
>
> The very feeling regarding a performance is changed — formerly even the sight of a stage or platform would send terror to my heart. Now I can view the performance with perfect composure and I do not think it would bother me much to be suddenly called on to preach or sing or anything else of a public nature. . . .
>
> I am exceedingly grateful to you, Doctor, and if I can add anything of interest to this would be delighted to call at any time and see you.
>
> Yours sincerely,
>
> ———

This letter would imply that he had had real subjective fear, but he evidently referred to the physical manifestations, as I had previously made very careful inquiry into this point. As to the permanency of the cure, I cannot add further information.

OBSERVATION II. Musician, well known and of high reputation.

The symptoms of the neurosis in this case begin about ten minutes before playing, and continue with exacerbations and remissions during the whole time while playing. When they develop they do so with a rush. The symptoms develop in the following order: (1) dryness of the throat; (2) feeling like that of indigestion; (3) hands cold and moist; (4) palpitation; (5) a sort of ataxia or clumsiness of the hands, so that he fails to have complete control over his instrument, in consequence of which he is much hampered in the practice of his art. This is the main reason for asking advice.

In consequence of this ataxia or clumsiness in the movement of his fingers he cannot play as well in public as in private. Upon these symptoms follow certain mental disturbances, which are described as a lack of confidence in his ability to do himself justice, a consciousness of himself and an irritability of temper.

The first time he experienced this neurosis was about fifteen years ago, when he began to be spoken of in public as possessing talent. Before that he had no symptoms whatever, but, on the other hand, had great confidence in himself. Later, when he was the subject of public esteem, he began to think about himself and came to the conclusion that he was not as skilled a player as the public thought. He at once lost confidence, apparently as the result of his own cogitations, and immediately the neurosis developed.

Later, as the result of prolonged work and study, he acquired the desired skill, and with it absolute confidence in his own ability as a musician, but with the return of confidence the neurosis did not subside but persisted. At present the subject is perfectly confident, as he stoutly maintains, of his skill, and insists that he is devoid of any sensation which approximates shyness or timidity.

Now it will be noticed that the symptoms constituting this neurosis in this case also are little more or less than the physiological manifestations of timidity, and yet, as in the preceding case, this patient claims to be absolutely without timidity; hence again we have the paradox of physical manifestations of emotion without the emotion itself.

The genesis of the neurosis in this case would seem, then, to be as follows: Real timidity in the early years of his profession excited the physical manifestations thereof. These by constant repetition and association have become segmented into a neurosis.

This is constantly re-excited by auto-suggestion. Although this is difficult to prove, my reasons for believing it to be the case are as follows: In consequence of the fact that this neurosis has come on so many times in the past and marred his performance, he states that, although he knows as an intellectual fact that he has skill of a high order, he has lost confidence in his ability to play in public as well as he can in private. His performance has been injured so many times that he is always apprehensive it will be injured again. He insists upon this distinction with considerable critical keenness. Consequently for a day before a concert this patient becomes irritable and at times apprehensive, and even when not apprehensive for so long a period before the concert, he is conscious, during a definite period of time before the appearance of the symptoms, of having a strong apprehension or expectation that these symptoms will come on. He always has a definite consciousness or idea that his playing will be hampered at each concert as it has been in the past. Now this is nothing more nor less than a suggestion to himself which may be put in the following words: When I begin to play I shall have such and such symptoms. He begins to play and the symptoms develop at once. This is similar in every way to such a suggestion as might be given to a hypnotized subject, such as, when the clock strikes ten you will arise and go to bed. And just as such a hypnotic subject on the given signal of the clock striking would carry out what he was ordered to do, so the person affected with neurosis, now being described, experiences just such physical disturbances as he suggests to himself that he will feel at such times and under such circumstances.

This patient, who is intellectually clever aside from his art, tells me that to his personal knowledge, based on conversations with numerous musicians, this neurosis is very common with members of his craft. Many musicians have their performances marred by the affection, and even some of the great violin and piano players of the world are sufferers from it. He instanced to me some whom he knew, who might rise to considerable fame were it not for it, and he insists that they usually state they are not conscious of any feeling like fear or shyness. How far this is true, of course, I can not of my own knowledge say. I am inclined to believe, however, that co-operative immediate excitant is a sort of self-consciousness or egotism which causes such people to become apprehensive of non-success, and the emotion caused thereby helps to excite the symptoms.

Observation III. Another case, residing in the suburbs of Boston, is not that of a musician, but one belonging to another craft.

This person in every other way is perfectly normal, but he has suffered from this affection to such a degree that he has been extremely hampered in the practice of his profession, and to a certain extent in his everyday life. It became, in consequence, a matter of great practical concern as well as suffering. In this case there was present the apparent paradox of all the physical manifestations of shyness without the presence of shyness itself. This person has absolute confidence in himself, recognizes his own ability, but when brought in contact with people under certain circumstances used to be overwhelmed by a neurosis which made it difficult for him either to carry on his profession or to do his part socially in the world.

In the practice of his craft he is obliged to give instruction to classes of students, as well as to lecture before audiences, and particularly to practise his art in the presence of others.

It was at such times in particular that the neurosis developed, although it also appeared under other circumstances. He described it as follows: While in any one of these public situations he would become conscious that people were looking at him; that is, his first sensation would be a marked state of self-consciousness, then with a rush the individual symptoms of the neurosis would overwhelm him. These symptoms would develop in the following order: first, a feeling of *faintness;* then *perspiration* would break out all over him; then he would, as he thought, *change color;* and finally, he would have *confusion of thought.* This confusion of thought would be of sufficient intensity to interfere with the work he was engaged in to a degree almost to amount to prohibition. It should be noted that these symptoms always appeared in this combination and in this order. A point to be emphasized is that these symptoms would come of a sudden, while he was perfectly composed and self-possessed, in the midst of a lecture or while practising his art. The continuance of what he was doing was then a matter of great difficulty and required the exercise of all his will power, which in turn was extremely exhaustive. To these symptoms various secondary symptoms now added themselves. Although the latter were distressing and psychologically interesting they need not detain us here, as they were not essential. Depression was one of them. They were important, as they served to redouble his self-consciousness, and thus again, as a consequence, the neurosis increased in intensity. This became actual suffering — not so much from the physical disturbances, for which he insisted he did not care, but because of the false position in which he was placed; that is, because of being thought to be timid and to lack self-confidence, when this was not the case.

The extent to which this subject was hampered is shown by his saying one day that he "would do anything, have his arm cut off if necessary," to be relieved. This patient had fought against his trouble with great pluck, but without success. Without warning, in the midst of a state of well-being, they would come upon him so suddenly that before he had time to think the neurosis would be developed.

Two well-known physicians, an alienist and neurologist, were consulted, but he was told he was only overworked (neurasthenia) and needed rest. But when he returned after a vacation his condition was as bad as ever.

The symptoms of this neurosis may now be recapitulated as follows: (1) consciousness of being looked at; (2) faintness; (3) perspiration; (4) flushing of face; (5) confusion of thought; (6) depression, etc.

It will be observed that the first five symptoms are the physiological manifestation of emotion.

A careful physical and mental examination of this patient revealed to me the following condition of affairs: Physically he was in the prime of health, well-developed and nourished; strong in every way. Probably no one of his friends or associates have ever suspected the existence of his trouble, as in social life he appeared mentally and physically as vigorous as a man could well be. It must not be imagined that he was hypochondriacal or in any way degenerate.

The genesis of the trouble was probably as follows: During boyhood he had been sensitive to ridicule, lacked confidence, and was shy. Or, in other words, at this time the perception of the fact that he was the object of observation by others caused in him the feeling of self-consciousness and lack of self-confidence.

With the emotional state thus produced there then developed the somatic symptoms, or physiological manifestation of emotion as above described. With increasing years and experience, complete confidence in his own ability was gained, and he lost all shyness in the true sense of the word; but, nevertheless, whenever at any time the thought came upon him that he was the object of observation, as in early days, all these symptoms developed at once with a rush, perfectly automatically, without any corresponding emotion. The fact that he felt these disagreeable symptoms made him naturally infer they were observable by others. Consequently he was still further disturbed, as he insisted over and over again, by the thought that others should think him to be lacking in self-confidence when he really possessed it. It was this last idea that produced the secondary symptoms.

It must not be overlooked that the original source of evil, namely, shyness and lack of confidence in his own ability, had long since subsided, and that the emotional-complex had been transferred to the associated idea or fear of other people's belief.

One more consequence should be noted: It finally came about that the fear that these symptoms would develop in public was sufficient to excite them. This apparently capped the climax and rendered further work exceedingly difficult. As an exciting cause, auto-suggestion in the form of apprehension undoubtedly played a part, as I believe. He was in constant apprehension that when he was placed in certain positions the neurosis would strike him. As already explained in the previous cases, this is equivalent to an auto-suggestion, such as, "When I am acting under such circumstances and such a thing happens, I shall feel so and so." This thing does happen and the neurosis is exploded as an automatic process. When overtired his condition was distinctly worse.

The treatment in this case was based upon the above analysis. The idea of neurasthenia was rejected, and the pathology as above outlined was explained at great length to the patient, who recognized its correctness and lent himself heartily to the new plan of treatment. Without this co-operation I believe this would have been a failure.

My idea was to artificially create in the patient's mind a fixed idea which should comport with the truth on the one hand, and which should be antagonistic to and therefore would inhibit the morbid idea and its consequences. To this end the following was written on a piece of paper:

> "These symptoms are only physical processes which by habit have become associated together by a previous pathological mental state. This mental state having subsided, the association will subside and I have nothing to apprehend."

This was later changed to:

> "I know I am the equal of the others. These symptoms are only physical processes which by habit have become associated together by a previous lack of confidence in my ability. Having now regained this confidence and knowing that I am the equal of others, this association will subside."

This he was told to learn by heart, and to repeat it constantly to himself on every possible occasion—when he was by himself, and as he walked the streets, the last thing before going to sleep, and especially before undertaking his professional work in public.

The result was decidedly favorable. The psychosis steadily grew less and in a month or two had substantially subsided. Nevertheless, there has been during the past year a tendency to relapse. But the course has been steadily towards improvement, until now his symptoms occur in so moderate a form that he no longer dwells upon them.

[Another year has passed since this was written. Although it is not easy to state with absolute accuracy the present condition of this patient, it is well within the truth to say, from my own frequent observations and the patient's own statement, that although not completely free from trouble, yet when we compare his condition with what it was, as shown by my earlier written notes, he is immensely improved. He is still troubled at times, but the attacks are mild, the secondary symptoms have disappeared, he does his professional work without particular discomfort, and his whole attitude of mind towards his trouble is different.]

Sometimes this neurosis does not occur in a pure form by itself, but forms a group of symptoms superimposed upon and complicating another disease of a different nature, perhaps true neurasthenia. For example, I have under observation now a young man who is a neurasthenic of probably a degenerate type, and therefore in certain respects incurable. In him certain habits of mind and certain peculiarities of body can be recognized, which are undoubtedly due to degenerative processes. Besides symptoms of neurasthenia he exhibits in a very neat way this phobo-neurosis. When brought face to face with people, particularly women, though the same may happen with men, he has a peculiar set of sensations which develop in the following order: (1) a feeling of shyness or confusion; (2) the face flushes; (3) confusion of thought; (4) feeling of general weakness.

Some palpitation occurs during the attack, but its exact position in the order is uncertain. In extreme attacks, ataxia or clumsiness of gait is added to the above.

These symptoms are of such intensity as to be a matter of considerable suffering and to cause the patient to make many sacrifices for relief. They come on with a rush or suddenness which does not allow for thought, and all the circumstances under which this occurs allow of no doubt of the independent automatism of the neurosis.

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AN UNUSUAL FORM OF BRONCHIECTASIS.

BY H. B. WHITNEY, M.D.,

Professor in Medicine in University of Denver; Visiting Physician to Arapahoe County Hospital, etc.

CERTAIN features of the following case will be seen to differ markedly from those commonly met with in this affection:

Wm. Mosler, age forty-four, laborer, was admitted to the County Hospital March 25, 1897. He gave the following history: At the age of twelve he had "pleurisy." At eighteen he began to suffer from asthma, which continued off and on in a mild form until twelve years ago, about which time he came to Colorado. It then ceased, and he has since been perfectly well, without cough or other evidence of his former trouble.

His present illness began three months ago as a pain in the region of the left nipple which lasted two hours and was very severe. This was followed immediately by a cough, which still continues. Expectoration was moderate at first, and for a day or two reddish in color; later it became purulent, increased in quantity up to a pint in twenty-four hours, its present amount, and almost at the outset, he thinks, became offensive in odor. He has not at any time been confined to bed. He speaks of chilly sensations at the first, but does not think he had either fever or dyspnea. He now weighs one hundred and twenty-five pounds and says his loss of flesh has been very moderate.

At the present time his chief complaint is cough, abundant fetid expectoration, soreness in the region of the left nipple, and some general debility.

The *Physical Examination* shows a man of medium size, rather poorly nourished, facies pale and somewhat phthisical in appearance. Cough almost constant, with frequent raising of a purulent and very offensive sputum, necessitating isolation. Patient is up and about; his pulse ranges from 95 to 100, respirations 22 to 28, and temperature normal to 101°, there being daily a rise of at least one degree.

The chest presents nothing abnormal on inspection or palpation. Percussion discloses a peculiar condition: Just outside the precordia, occupying the angle between its left border and the lower margin of the lung, is an area the size of an orange, which is flat in the erect posture and changes to slight tympany when the patient is on his back. Over this area there is friction. Respiration here is somewhat bronchial, and accompanied by scattered moist râles, especially for a short distance above and to the outside of the dull area. The voice sounds also bronchial, and there is distinct whispered pectoriloquy. The lungs are otherwise negative and the heart is normal. On examination the abdomen gives also negative results.

These local signs in the left lung were so plainly indicative of a cavity containing both fluid and air that the diagnosis seemed at once restricted to a very few conditions. Phthisis seemed presumptively excluded by the location, and still more by the concentration, so to speak, — the non-diffusion — of the signs; and, indeed, a later examination of the sputum for bacilli was negative. For gangrene the pain had not been sufficiently intense nor had the course of the affection been sufficiently acute and grave. The same might be said of a pulmonary abscess, although here the ground did not appear to be quite so safe. Bronchiectasis seemed hard to reconcile with the sudden origin, the absence of general bronchitis, and the limitation of the process to one side and apparently to a single cavity. The affected area lay close to the interlobar septum; and I was therefore, by exclusion, led to think that an encapsulated interlobar empyema had barely reached the surface when it had ruptured into a bronchus, become infected, and thus furnished the source of the foul pus which had since been so constantly discharged through the mouth.

On this hypothesis I made an exploratory puncture in the fifth space about one inch outside the main line, and obtained a small amount of very offensive pus. Operation was at once advised, and on the following day, in my absence, the man was anesthetized, and another exploratory puncture made as a preliminary to operation. No pus could be found, even on repeated trials, and the case was referred back to me. On the following day I again made several punctures with negative results, and the man then absolutely refused any further operative procedure.

Strange to say, he shortly afterward began to improve. He steadily gained flesh, and on October 4th his expectoration had diminished to ten ounces in twenty-four hours. Careful examination at this time failed to show any sign of the previous trouble except a small area of bronchial respiration, the size of a dollar, attached like a wart to the outer and upper segment of the precordia. In the "angle" there was no dulness, and the respiration was clear vesicular.

I did not see the patient again until January 1, 1898, three months later, and ten months after he had first come under my care. He had in the meantime continued to improve and had become a hospital "helper." Two days ago, however, while coughing, pain had suddenly appeared in the lower *right front;* and with this the amount of expectoration had suddenly increased from four to sixteen ounces. Physical examination of the chest now disclosed the following condition: *Left Front:* — No remains of the original trouble except slightly broncho-vesicular respiration at site of former pericardial excrescence. *Left Back:* — Very few moist râles in mid-scapular region. *Right Lung:* — Numerous moist râles through lower third, front and back. Friction in region below right nipple.

One month later the physical signs had become concentrated about the lower right front and axilla, and bore a marked resemblance to those originally found on the left. There was a zone of flatness about two inches wide, continuous with that of the liver and bounded above by a slightly curved line extending from near the nipple to the line of the angle of the scapula. Over this zone respiration was distinctly bronchial — almost amphoric — and there was distant whispered pectoriloquy. Vocal fremitus was diminished but not absent. There was no tympany, and hence, of course, none of the Wintrich signs of cavity. For a short distance above the flat area there was slight dulness and a few moist râles. At least the upper half of the lung was absolutely negative.

These signs remained unaltered until the man's death, from a pulmonary hemorrhage, on May 30, 1898, fourteen months after he entered the hospital. The only local change which occurred was a very slight increase of the flatness upward and toward the spine. The heart had continued practically normal; and there was never any enlargement or downward displacement of the liver. The general condition had shown a steady decline from the time, in January, when the signs in the right lung had first been discovered. There were no chills, but an irregular though steady hectic, together with the constant drain from the lungs, had produced a very considerable degree of weakness and emaciation when the final catastrophe came.

On two different occasions several exploratory punctures were made over the flat area with negative results.

Before stating the results of autopsy, it is to be remarked that the difficulties of diagnosis in this case were very great. It was, of course, quite evident with the right lung, as earlier with the left, that we had to deal with some sort of cavity or cavities communicating with the bronchi. But what sort of a hypothesis was consistent with an apparent cure of the condition which had first appeared on the left? The original thought of interlobar empyema, or possibly pulmonary abscess, seemed inadequate to explain a secondary and similar involvement of the right lung; experience tells us that such does not occur. Hydatid was considered, but the condition is extremely rare; there was but little pain and even the slightest positive evidence was wanting. Bronchiectasis, while not dismissed from consideration, was very difficult to reconcile with the history of acute onset, the relative recovery of the part first affected, and the subsequent invasion of the right lung.

Autopsy disclosed the following pulmonary conditions: In the lower part of the interlobar fissure of the left lung was a small quantity of cicatricial tissue, evidently the result of a former pleurisy. Following this up led to a cavity, situated close to the fissure in the lower part of the upper lobe and about as large as a small egg. It was collapsed, wholly empty, and communicated directly with a somewhat dilated bronchus. Its walls appeared to be extremely thin and were uninflamed. With the exception, perhaps, of a very slight injection of the bronchus leading to this cavity, the left lung was normal.

In the right lung the changes were more recent and profuse. The upper half was negative except a small isolated cavity, the size of a walnut, lined with a thick membrane and containing pus. The lower half, on the contrary, was riddled with cavities varying in size from a chestnut to a small egg. The shape of these cavities was in the main saccular, and many of them had a wide communication with a bronchus. In a general way they resembled the cavity found upon the left, except that the walls were more inflamed, and they contained usually a considerable quantity of offensive, muco-purulent secretion. The surrounding lung tissue was comparatively uninvaded; the absence of tuberculous or cheesy masses was especially noted, although there was, perhaps, around some of the cavities a slight pneumonic infiltration. In a general way the cavities presented the peculiar appearance of being scooped out of comparatively healthy lung. They were most numerous and largest at the extreme base in front — in the middle lobe — corresponding to the situation *intra vitam* of the most prominent physical signs. Throughout the affected portion there was a considerable degree of acute bronchitis without marked chronic changes in the thickness of the bronchial walls. The heart and other organs were relatively normal.

Let us attempt a brief analysis of this case, which is exceedingly instructive with reference to the clinical history of bronchiectasis. It certainly discloses features of this disease which differ decidedly from those generally accepted, and it is here to be especially emphasized, as being of the greatest importance in the interpretation of the case, that the history of onset given above is to be accepted as reliable. The patient was a man of more than ordinary intelligence, and the history was taken first by the interne and later, with great care, by myself. A persistent cross-questioning failed to alter in any way the statements originally made.

We find, then, an acute onset of pain, cough, and abundant fetid expectoration in a man previously well, and — what is particularly to be noted — absolutely free from any cough whatsoever. Signs of a cavity soon develop in a circumscribed region of the left chest, persist for two or three months, and then gradually disappear; at the same time there is a marked general tendency toward recovery, and a great diminution in cough and expectoration. Several months later the right side suddenly becomes affected in a similar way, the old symptoms return, expectoration again becomes exceedingly fetid and abundant, and after three or four months of sepsis with steadily increasing exhaustion, the case terminates fatally by a pulmonary hemorrhage. Corresponding to this clinical course the post-mortem shows a large quiescent bronchiectasis on the left, and on the right numerous bronchial dilatations in a state of active catarrhal inflammation.

Assuredly these bronchiectases could not have originated in a few days, or even a few weeks. They must have been of long standing and slow development, already at least partially formed at the time of the original acute attack. This latter I conceive to have been an acute inflammatory process, involving the pre-existing bronchiectatic cavity, and particularly the surrounding pulmonary tissue. Hence the pain and reddish sputum at the outset, the pleuritic friction, and the suddenly increased activity of bronchial secretion. An explanation, also, of the abrupt development of cavity signs is not far to seek. A collapsed cavity in normal lung tissue may give little evidence of its presence; the same cavity dilated by abundant secretion, surrounded by a consolidated lung, and perhaps thus provided with smooth and rigid walls, will present conditions favoring the production and transmission of abnormal sounds.

This inflammatory process then gradually subsided. The cough and expectoration diminished, the local signs disappeared, and the *status quo ante* was again restored. Unfortunately, however, the same process was repeated in larger measure in pre-formed bronchial dilatations of the opposite side, and an accidental hemorrhage produced the fatal result which otherwise would probably have occurred later from sepsis alone.

The chief lessons to be drawn from this case are, first, that bronchiectasis may be wholly latent, and second, that the symptoms which it often produces — chiefly cough and abundant fetid expectoration — are susceptible of spontaneous cure.

In the first place as regards latency: The conception of the bronchiectatic process as latent, and hence essentially primary, is certainly not a commonly accepted one. We usually think of it as either obstructive, where there is some local mechanical obstruction of one or more large bronchi; or tractional, as in a fibroid lung; or inflammatory, as where, from a long-continued bronchitis, the bronchial walls become gradually relaxed and eventually distended. A primary, slow, relatively benign, and wholly latent development of saccular dilatations of the bronchi in the midst of healthy lung tissue strikes one at first as a strange idea.

It is, however, not new. In Vol. VI of the "Twentieth Century Practice of Medicine" may be found an admirable description of primary bronchiectasis, by Stewart and Gibson, together with a complete historical review of the subject. It is there shown that Briquet, Dittrich and Barlow had observed apparently primary bronchial dilatations, of saccular character, previous to a more complete study of this form by T. Grainger Stewart in 1867. Stewart then maintained and still holds the opinion that these cases of bronchiectasis are often the result of a *primary atrophy* of the bronchial walls. Leroy, also writing in 1879, and apparently unacquainted with the article by Stewart, advanced the same view. The cause of the atrophy itself is admittedly obscure, and is referred to in a general way as a constitutional peculiarity.

A few quotations from Stewart and Gibson concerning the clinical history of these primary cases will be of interest: "In many, if not all, of the cases the affection comes on insidiously, no symptoms appearing to attract the attention of the patient or his friends perhaps for long after the dilatations have been formed. But gradually or suddenly inflammation of the bronchial mucous membrane is lighted up." After decomposition of the secretion, "The patient's history is now one of intermittent cough, with fetid sputum and breath. He becomes liable to severe febrile disturbances due to a septicemia from absorption of the products of decomposition, which attacks may be recovered from under treatment, or may prove fatal, or the decomposition of the secretion may be followed by inflammation and consolidation of the lung — a septic pneumonia; sometimes also by ulceration, abscess, or gangrene." "Sometimes death results from exhaustion induced by the constant discharge of sputum." "Barth met with two cases in which hemoptysis proved fatal, and we have met with similar cases."

In the case reported by the writer it is of course possible that the atrophic dilatations of the bronchi had some relation to the preceding history of asthma. It is, however, to be considered, that the patient had suffered neither with asthma nor bronchitis for twelve years previous to the acute onset of his present disease.

As regards the second point of interest — the spontaneous recovery from the first attack — I can conceive no other explanation of the marked improvement in general condition and the great diminution of cough and expectoration which took place, together with the recession of local signs, and particularly the post-mortem appearance of the bronchiectatic cavity. The latter was so collapsed, and the surrounding pulmonary tissue was in so normal a condition, that, much to my chagrin, the lung, after numerous sections, was pronounced negative. Confident however, that there must be something to show for the pronounced physical signs which I had heard, I followed up the septum and finally came upon the collapsed cavity described in the report.

The rarity of any spontaneous cure of bronchiectasis must be very great. Guitrac (quoted by Stewart and Gibson) speaks of two ways in which cure has been known to take place: one by cretifaction of contents, the other by discharge through the thoracic wall. Stewart and Gibson, however, have never met with any such cases, and regard recovery as extremely infrequent. My own case would seem to indicate that nature does work in the direction of at least relative recovery, and this must be regarded as very encouraging toward therapeutic efforts. The chief special medication in the case reported was large doses of the hyposulphite of soda, of which two drachms to half an ounce was taken daily, considerably diluted in syrup and water. There was certainly an almost immediate effect in diminishing the odor of the sputum; indeed during the first attack it entirely disappeared. Whether or not this treatment had anything to do with the temporary recovery is questionable.

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TUBERCULAR CYSTITIS IN CHILDREN.[1]

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Although tubercular cystitis is more frequently met with in young adults, a number of cases have been reported in children during the past few years. The genito-urinary organs in children being in a rudimentary state of development are invaded with difficulty by the infectious agent of tuberculosis, but this is not the only reason for the infrequency of reported cases. The symptomatology of tubercular cystitis in children is often so masked that the attention of the physician is not directed to the condition of the bladder, and I am of the opinion that if microscopical and bacteriological examination of the urine of children were more frequently resorted to urinary tuberculosis would be more often discovered in little patients.

All the causes attributed for the development of vesical tuberculosis in the adult may be applied to the child, such as acute infectious cystitis, the extension of an infection of the genital organs to the urinary tract, and explain why tuberculosis of the bladder is infrequent in children.

In young subjects, as is the case with adults, tubercular cystitis is either primary or secondary. When secondary it is more particularly due to tubercular lesions in the lung, but it may develop from a coxitis or adenitis. The primary form is seen in children born of apparently healthy parents, and its appearance is in the form of urinary disturbances that are often very misleading.

Our personal experience with tubercular infection of the bladder in children is limited to a single case which is here briefly reported.

Miss M. G., age eleven, was seen in October, 1896. She was the only child, born of healthy parents, both being alive, and had always enjoyed the best of hygienic surroundings. As a little child the patient had always been well excepting for measles at the age of four, and scarlet fever at seven. In neither of these affections had there been any renal or vesical complications, and the catheter had never been used. For the four months previous to our first visit the patient complained of a frequent desire to micturate, and this increased to such an extent that at our first visit she was going to the bath-room about every fifteen minutes. During the last six weeks the desire to pass water was complicated by a burning sensation at the time of micturition and following the act, and so intense that the child would cry out with pain. Strange to say, sleep was fairly good; every two or three hours there was a demand to empty the bladder. At the same time the appetite diminished and a yellow leucorrhea appeared. The bowels were regular. Exercise seemed to increase the pain, but riding appeared to have little effect. The tongue was clean, the pulse was 80, and at no time did the thermometer register above 37° C.

Examination of the thoracic and abdominal viscera was negative; the child did not cough; there were no night sweats, and there had never been a rhinitis nor discharge from the ears. No enlarged lymphatic glands could be found, and a careful inspection of the throat showed that the tonsils and pharynx were in normal condition.

On account of the severe bladder symptoms we decided to examine the bladder and kidneys. Ether was given and after complete narcosis the abdomen was carefully explored, but no enlarged spleen or kidneys could be felt. The bladder could be palpated low down behind the pubis and its walls appeared rather thickened. A small Kelly's bladder speculum was then introduced. The trigonum was very hyperemic, the ureteral orifices were normal. Two small and superficial ulcerations, each about the size of a split pea, were seen; their borders were rather irregular, and they had a dirty yellow surface. The fundus of the bladder was somewhat hyperemic, although not very much so, and along the course of some of the vessels a few small pearly-colored points were present, having all the characters of tubercles. The urine was cloudy and slightly acid in reaction when voided, and muco-purulent deposit settled at the bottom of the tube after standing. This deposit was stained for tubercle bacilli and a few were found without much difficulty.

Four different samples of urine removed by a sterilized glass catheter into sterile tubes were inoculated into guinea-pigs; all four animals presented a well-marked tubercular peritonitis at necropsy a few weeks later.

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[1] Read by invitation before the Danbury, Conn., Medical Society, November 2, 1898.

The small ulcerations were cauterized five times with a 60-per-cent. solution of lactic acid at an interval of one week, and 20 cubic centimetres of an iodoform glycerine emulsion at 15 per cent. were injected, and allowed to be retained until expelled by the bladder, every four days for seven weeks.

The patient was placed upon cod-liver oil and a diet of milk, eggs and meat, and during the first ten days of treatment the following pill was taken at bedtime to relieve the dysuria:

℞	Ext. belladon.	0.01
	Ext. hyoscyam. } āā Ext. stramonii }	0.03
	Ext. valerian.	0.06

M. F. pil. D. tal. dos. No. XX. Consp. pulv. liquirit.

At the end of four months the local condition was greatly improved, the symptoms were far less severe, and it was then thought best to send the patient to a proper climate. She went to the Bermudas and returned late in the spring.

In May, 1897, we again saw the patient, and cystoscopic examination failed to reveal any trace of the ulcerations other than two small star-shaped cicatrices. The fundus was still somewhat hyperemic, but no tubercles were observed. The general health was good, and the patient had gained about eleven pounds during her sojourn away.

Microscopical examination for tubercle bacilli was negative, and a guinea-pig inoculated with the urine remained well, and ten weeks later, when killed, showed no trace of any lesion of the peritoneum.

Here is a case, it seems to me, where the entrance of Koch's bacillus into the economy remains a mystery. The tonsils, which I consider a very frequent point of inoculation, were normal, and no trace of any other focus of the disease could be detected. What this child may develop in the future we cannot predict, but at least for the time being she is free from any process within the bladder.

If we consult the leading text-books, such as "Guyon's Lectures," Zeulzer and Oberländer, von Antal, Desnos, or the "American System of Genito-Urinary Diseases," we find that practically tubercular cystitis may be divided into three groups of symptoms, namely, disturbances of the micturition, changes in the urine, and the physical signs.

Disturbances of the micturition are the first to appear. Gradually, without any known cause, or in a subject having some tubercular lesion, micturition becomes painful, difficult, and at last is accompanied by severe pain which lasts for a time after emptying the bladder, or may even be continuous Pain is hardly ever wanting, and it is precisely its intensity that is a diagnostic feature of tubercular cystitis in the greater number of instances of the affection.

Under the influence of the tubercular lesions the muscles of the bladder contract and give rise to retention of urine from spasm of the vesical neck, or, on the other hand, this latter portion of the viscus is destroyed by a process of ulceration and then incontinence results.

Now, a *true* incontinence or retention of urine is not always met with in tubercular cystitis in the adult; we may have a *false* incontinence and pain, both of which are the first symptoms present, and they are always well marked.

Examination of the urine at the beginning of the affection will only reveal a clear polyuria, but pyuria soon occurs, the purulent matter being voided more particularly at the end of micturition. Hematuria, which is frequent at the onset, may be present during the entire course of the disease, but at irregular intervals and in small amount. For a time it may be absent and then suddenly recur. Search for Koch's bacillus in the urine should never be neglected, and it will often be found.

Consequently, we may say that *pain*, *hematuria* and *pyuria* are the principal symptoms of tubercular cystitis in the adult, at least in the primary form of the affection, because in advanced cases of pulmonary tuberculosis the lesions in the bladder are often overshadowed by the poor general condition of the patient.

In children, tuberculosis of the bladder does not present any such distinct array of symptoms, and usually one symptom alone indicates the presence of the disease, and for this very reason a number of cases are often not recognized.

The symptom that is the most prominent in tubercular cystitis in children is certainly incontinence of urine. But in this affection, both in adults and children, we have several kinds of incontinence, as we have above remarked. In the first place, there is a *true* incontinence, where the urine escapes without producing any desire to micturate. When present, this form of incontinence is due to a certain amount of destruction of the neck of the bladder by an ulcerative process. The breaking down of the diseased tissues destroys the prostatic region, and the urine accumulates in the cavities thus formed; from these it trickles into the membranous region, which will retain it if the urethral sphincter is still intact, but if the muscle is destroyed or paralyzed by the tubercular process the urine will escape and cannot be retained.

Tubercular inflammation may paralyze the action of the sphincter to a certain extent, especially if the muscle is congenitally weak.

A false incontinence varies in nature. Sometimes it is simply a micturition from overflow, in which case *it is not* an incontinence but is a retention, and is met with in certain painful forms of cystitis. The neck of the bladder is closed by spasm, and from this a more or less complete retention will result.

Now a real false incontinence is what is particularly seen in children, and is in reality a frequent and very ardent desire to pass the urine. Even in adults when the desire to urinate occurs the patient may not even have the time to get to the bath-room and voids the urine in his clothes, and it can readily be understood that under these circumstances children, who are less reasonable than their elders, will micturate in bed at night and in their clothes during the day. But all the forms of incontinence may be met with in children, and in some cases the urine dribbles out drop by drop, and when the patient is asked to urinate into a glass only a small amount can be voided or even none whatever.

The escape of urine is voluntary, because the patient can be made to retain his urine in the bladder for a few minutes. It is in reality a false incontinence, the desire to urinate is present, but it is imperious and, being constantly present, the child cannot resist it.

In some instances there is nocturnal incontinence and during the day there is simply a frequent and painful desire to micturate. The bladder being irritated by the tubercles contracts frequently as soon as urine collects, but there is no paralysis of the sphincter. In no case that I have found reported has incontinence been due to a destruction of the neck of the bladder by tubercular ulcerations, as is so frequently found in adults.

The lesions are scattered, and when an abscess opens there then form small, superficial ulcerations which cannot destroy the urethral sphincter. Necropsies have clearly shown that the neck of the bladder is a favorite seat for tubercular lesions, and the same may be said of the deep urethra. When the infection of the bladder is secondary to that of the kidney the ureteral orifices will present pathologic changes, or small ulcerations will be found near them. When there are lesions in the deep urethra spasm will result.

Incontinence from overflow may also be observed along with a more or less complete retention, this being due to spasm of the urethra. The spasm in tubercular cystitis indicates, just as it does in other forms of cystitis, that there is a severe hyperemia of the neck of the bladder, due to the presence of tubercles or ulcerations in this region of the organ.

In children, as we have said, incontinence from pollakiuria is the most prominent symptom of tubercular cystitis, but hematuria, pyuria and pain may also be present, and we will now consider, in a few words, each one of these symptoms.

Pain varies in different cases, and often is wanting, or at least appears to be, because we must be careful not to be misled on this point, for little children cannot tell us exactly what they feel. Severe pain will make them cry, while they do not pay much attention to little dull pains or burning sensation, as would the adult. It may, however, be said that pain sufficient to make the child cry is never so persistent that sleep is entirely prevented.

Hematuria appears to be an infrequent symptom in tubercular cystitis in children, and does not show itself at the beginning of the trouble as it does in adults. Pyuria, on the contrary, is important in little ones, and Guyon has insisted upon the necessity of a careful analysis of the urine, because if it contains pus the incontinence present is not due to a neurosis.

Consequently, in both children and adults, the urine in tubercular cystitis is most always purulent, but it is so in varying degrees, but in rare exceptions it may remain perfectly clear and is passed in large quantities, — a fact that may cause much difficulty in diagnosis.

In all cases of suspicious cystitis a careful bacteriological examination of the urine should be carried out. The microscope will reveal pus cells and red blood corpuscles, while chemical analysis will often show the presence of albumin due either to the pus or to lesions of the renal gland.

The search for Koch's bacillus will often be negative, but should be often repeated, and finally we can perhaps discover the organism, which when found will settle all doubts as to the nature of the affection. Inoculation of the pus contained in the urine, or the urine itself, into animals, especially the guinea-pig, should always be resorted to, and the presence of the specific bacillus may thus be demonstrated when the microscope and culture-tubes have remained negative. One inoculation is not enough, and several animals must be employed, each one receiving a different sample of the urine.

As to cystoscopic examination I would say, that in my experience tubercular ulcerations have nothing that one could call typical. They may be small or large, round or irregular in outline; their borders may be elevated; or, on the other hand, no induration will be found in their neighborhood. Their surface may be clean or covered with a secretion or by salts from the urine. Tubercles are to be found scattered along the course of the blood-vessels and are easily recognized as small pearly points, and which have been well figured by Casper of Berlin in his recent and excellent work "Handbuch der Cystoskopie" on Plate IV, Figure 15 (Leipzig, 1898).

It is hardly necessary for me to say that a complete examination of all the other viscera should be made, and often we will find an active or latent focus of tuberculosis in some other organ. Of course in small boys the testicle and prostate are not likely to be invaded by the process on account of their rudimentary state of development, so that no information can probably be gathered from the condition of these organs.

Primary tuberculosis of the bladder in children is, if we may judge from reported cases of the affection, relatively good in its prognosis, and generally, with proper treatment and change of climate, the symptoms will disappear,— at any rate for quite a time. The affection remains localized, and although cases are recorded in which the lungs became involved, a tubercular cystitis has in the young a marked tendency to get well.

In childhood other tubercular lesions have this same tendency, such as coxitis, even when there is suppuration in the joint, while such a condition in an adult would be very serious. Other tubercular lesions disappear, such as abscess of the lymphatic glands, arthritis, conjunctivitis or rhinitis.

The diagnosis of tubercular cystitis in the child is not always an easy matter, and may even be overlooked. The frequent absence of pain, especially in the early stage, hematuria and the excellent general condition of the patient when the bladder is the primary seat of the infection, will mislead the physician as to the nature of the symptoms present.

Incontinence of urine in childhood being the chief, if not the only, symptom of cystitis in general and the tubercular form in particular, we should study the type of incontinence present in a given case. When a child presents an incontinence it may be the first symptom present of a general tuberculosis which will undergo its evolution at a later date, and simply indicates that there is an active focus of the tubercles in the urinary reservoir.

A repeated examination of the urine will show the presence of a cystitis and in order to obtain a sufficient quantity the catheter may have to be employed. The urine always shows pathologic changes in tubercular cystitis, while in nocturnal incontinence due to a neurosis it is always perfectly limpid.

In tuberculosis of the bladder, both in children and adults, the urine contains a quantity of small filaments or grumous matter, which falls to the bottom of the glass after standing, forming a rather thick purulent or muco-purulent deposit. The urine above this will be found perfectly clear if the bladder alone is the seat of the disease, but when the kidney is involved in the process the entire bulk of urine will remain cloudy no matter how long it may stand. In some few instances a little blood or a few clots are to be found.

The urine will be found acid in reaction in tubercular cystitis unless some mixed infection has taken place, and the same may be said of the cystites due to the bacterium coli, so that no differential diagnostic help can be gained, but the rapidity of growth on culture media of the latter organism will quickly put an end to any doubt as to the nature of the bladder infection.

All the symptoms above mentioned indicate that there is a cystitis present, but the nature of the lesion is often difficult to decide. Exploration of the bladder will quickly eliminate calculus or neoplasms of the organ, which frequently give rise to cystitis in young people. Neoplasms, and papillomata in particular, give rise to repeated and profuse hematuria, which appears and disappears suddenly.

The infectious origin of a chronic cystitis now remains to be discovered. The gonococcus is not apt to infect children's bladders, but the bacterium coli is certainly a potent factor of vesical inflammation in both adults and children, more especially female subjects, and I have notes of several cases in which this organism was the cause of chronic cystitis in children.

In considering a case of cystitis in a child we should recall two diagnostic points which have much importance, namely, the absence of any distinct cause for the bladder trouble and any unusually long duration of the affection. Guyon has rightly said, "A spontaneous cystitis is about the same thing as a spontaneous bronchitis, and both should bring to mind the question of tuberculosis," and we would add that when the cystitis persists in spite of a well-directed treatment we should suspect the beginning of a tubercular process within the bladder as probable.

If lesions are found in the bladder we must next ascertain if the kidneys are not also involved, and consequently a careful palpation of the renal glands is necessary. Certain pathologic findings in the urine, such as a cloudy polyuria or renal casts, indicate that the kidney is infected.

The treatment of tubercular cystitis is general and local, but as the disease in children has a rather good prognosis when it is primary, no surgical interference is to be considered unless other milder measures prove useless.

Cod-liver oil, creosote and tonics are of value, and iodoform in the form of a pill is highly recommended by Guyon and Reverdin. Locally an iodoform or guiaicol emulsion is to be injected into the bladder and retained until expelled; theoretically they are of value, and practically have proven their excellent curative action. The ulcerations may be cauterized and curetted if they be extensive. Being aware of the favorable results obtained from local applications of lactic acid in tubercular laryngitis, we were led to experiment with this agent in the bladder, and the results obtained in the case here reported would appear to indicate that further use of this substance is justifiable.

The indications for suprapubic cystotomy vary according to the end to be obtained. If it is done to bring about a radical cure it should only be performed in cases of *primary vesical tuberculosis* and then we can expect much from drainage of the bladder. The ulcerations can be directly cauterized with the thermocautery or even excised through the opening.

When this operation is done as a palliative treatment, — that is to say, when other foci of the disease are present and the cystitis is secondary, — the relief from pain that the patient will obtain is quite enough to justify its performance.

To sum up, we may say that a primary tubercular cystitis in children is curable when the lesions are not advanced, and that if general treatment and local applications do not show any effect on the process after a reasonable trial suprapubic cystotomy is the operation of choice, and will be followed with as good results as those obtained by it in the adult.

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Clinical Department.

A CASE OF NECROSIS OF THE MASTOID WITH SEPTICEMIA AND GANGRENE OF THE LUNG; OPERATION; RECOVERY.[1]

BY PHILIP HAMMOND, M.D.,
Assistant in Otology, Harvard University; Clinical Assistant, Massachusetts Charitable Eye and Ear Infirmary, etc.

C. S., a schoolboy of sixteen years, was brought to the Aural Clinic at the Massachusetts Charitable Eye and Ear Infirmary on June 27, 1898, in a very weak condition.

He had a history of frequently recurring earaches since childhood. Three years ago he had a bad pain in his right ear, since which it has discharged continually. There had been no recent pain in this ear until a week before his appearance at the Infirmary, when he experienced severe pain following a cold contracted a few days previously.

Tenderness and extreme pain over the right mastoid and side of head soon developed, and with these symptoms a feverish condition set in. Three days after the first onset he had a severe pain in the top of his head, together with some dizziness. The next day he had three chills, one of them quite severe, and on the following day he had nausea and vomiting, with dizziness, which still persisted at the time he presented himself for examination.

There was a very foul suppurative discharge from the ear, and when this had been cleansed out a large destruction of the tympanic membrane was visible. The region over the mastoid antrum was extremely sensitive to pressure, and there was marked tenderness over the region of the jugular. On examination the eyes proved to be normal, there were no cardiac or renal disturbances, and a careful count showed the blood to be in a normal condition.

The boy was immediately prepared for operation, and that same afternoon I opened his mastoid in the usual manner. The tissues were not very thick over the bone, and the surface of the bone was rather rough and bleeding. The cortex was opened by means of gouge and mallet. The bone was everywhere inflamed and bled freely. The mastoid cells were almost entirely destroyed, and the resultant cavity filled with a greenish, foul, cheesy material. This was removed by the curette, establishing a direct communication with the antrum.

While curetting in the depths of the mastoid at about the level of the antrum the instrument entered the lateral sinus, and on account of the hemorrhage the operation had to be stopped. The cavity was packed with iodoform gauze, and over this a heavy aseptic gauze dressing was applied.

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[1] Read before the Middlesex East District Society, August 31, 1898.

The patient recovered from the ether well, and the wound bled into the dressing but little. The day following the operation he had two chills, one at 1 P. M., the other at 6. The temperature varied from 101° to 103°, and he took his nourishment poorly.

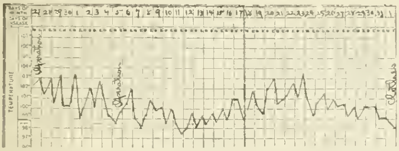
The second day following the operation the patient had another chill, with a rise in temperature to 103°. The dressing was removed from around the meatus, but the packing in the sinus was not disturbed. There was a slight but very foul discharge from the meatus.

On June 30th, the third day after the operation, all packings were removed. There was no bleeding, and the sinus was distinctly seen to be pulsating.

The wound was dressed daily after this, and gradually improved in appearance, but as regards his general condition the boy became worse. There were frequent chills, and an intermittent temperature.

During the next few days there developed a marked tenderness of the neck on pressure, apparently rather nearer the median line behind than over the jugular, and on July 2d a slight swelling was noticed beneath the mastoid. This increased during the two succeeding days, until on the 5th there was decided swelling over an area beneath the mastoid tip as large as the palm of one's hand.

On consultation with Dr. Clarence J. Blake it was deemed advisable to operate at once. Accordingly the boy was etherized, and because of the condition in which it had been necessary to leave the bone at the former operation on account of the hemorrhage from the sinus, I curetted the antrum and roof of the mastoid thoroughly, to be sure that there was no remaining spot of caries to infect the meninges, before attempting to do anything near the sinus or abscess cavity.



On careful examination the sinus was found to be soft, and apparently contained no clot. There was no spot of caries posteriorly connected in any way with the swelling in the neck. A probe was next passed downwards and backwards from the mastoid, opening through the superficial tissues into the swollen area, revealing the presence of pus. The probe was passed across the crater of the abscess to the most dependent portion, where a counter incision was made.

In all, about two ounces of pus was evacuated. The cavity was carefully curetted, much granulation tissue being removed, and finally a drainage-tube was inserted.

This wound was dressed daily, and the patient's general condition improved greatly during the next two weeks.

About the middle of July he began to have a slight but persistent cough, which gradually grew worse. Examination of the lungs was negative until July 19th, when a patch of moist râles appeared in front of the left shoulder, and running under the arm. Examination of the sputum gave a negative result. The wound steadily improved from the date of the second operation. On July 19th the lower end of the drainage sinus was clean and nearly closed, the mastoid wound was in good condition, and the ear nearly dry. On this day it was noticed that the breath had a fetid odor.

On July 23d the record states that cough had been persistent, and there had been a rising temperature. There was dulness over the left side from the third rib down, with decreased voice and respiration sounds, and a few râles. There was a very foul odor to the breath. The mastoid wound was nearly dry. By the last of July the boy had been gaining in strength daily. In the left lung under the axilla, and in front at the same level, were dulness, decreased voice and respiration sounds, and a few râles. On coughing a fetid purulent sputum was produced, with very foul odor.

The case was examined by Drs. Mixter and J. L. Morse, both of whom pronounced it gangrene of the lung. The area involved was probably about three inches in diameter. They both agreed, however, that he would do as well under medical care as in any other way, and events justified this decision.

By the first of August he was able to sit up every day, and during the next week the mastoid wound healed in from the bottom very rapidly.

At the time of his discharge from the Infirmary the wound had all healed but a superficial granular spot, and there was but a slight discharge from the ear. The record states, "the cough is not so marked, nor the odor so fetid. Sleeps very well, and in every way the patient's general condition seems better."

He was discharged from the house on August 7th and was followed in the out-patient department during his convalescence. On August 17th he was entirely well, and he has written since that date saying that his health is in excellent condition and that he is not bothered by cough at all.

It is evident that we have had to deal here with a case of severe septic infection from the primary disease of the ear, with at least two foci of metastatic abscesses, for as such I look upon the superficial abscess of the neck, and the purulent condition in the lungs. When I first saw him I thought from his septic appearance that he probably had a purulent thrombus in the lateral sinus, and such was also the opinion of my colleagues. Believing this, I had intended to remove all caries from the mastoid first, and then tap the sinus with a trocar, to see if the flow of blood was obstructed in any way. Of course, in opening the sinus as I did I dispelled all doubt as to the presence of a thrombus, and I am inclined to think that his septicemia was due to general absorption.

It is true that by establishing a direct communication between his sinus and a purulent cavity an extra avenue for the entrance of germs into his system may have been opened, but a study of his train of symptoms for a week prior to his admission to the Infirmary leads me to the belief that he had already been infected before the operation, and that for but prompt relief he would have succumbed in a very short while.

A New Whooping-cough Bacillus. — An Italian investigator, Dr. Vincenzi, of Sassari, claims to have discovered the specific pertussis microbe. He found it in the sputa of children suffering with whooping-cough, being present in some cases in very large quantity, while it was absent in other diseases. Dr. Vincenzi did not succeed in causing the same disease by inoculation in animals. — *Medical Record.*

CÆSAREAN SECTION IN A GENERALLY CONTRACTED PELVIS WITH A TRUE CONJUGATE OF SEVEN CENTIMETRES MINUS.

BY SARAH ELLEN PALMER, M.D.,

Surgeon to the New England Hospital; Assistant Surgeon to the Woman's Charity Club Hospital and Physician to the Pope Dispensary.

THE patient was a small, apparently well-formed woman, fifty-five inches in height and weighing eighty pounds. Late in the seventh month pelvic measurements were made, and the true conjugate found to be a little less than two and three-quarters inches in a generally contracted pelvis. Dr. Emma L. Call, who kindly saw the patient in consultation, agreed in the above measurements.

The patient was given the choice of premature delivery with little chance of saving the baby or a Cæsarean section with good prospect of life for both mother and child. She unhesitatingly chose the latter.

A date was fixed as the probable termination of pregnancy, and September 13th chosen for operation unless labor began before. The reason for this was that more satisfactory preparation could be made than for an emergency operation. Kelly advises this and Washburn has found subsequent dilatation of the cervix in any event.

The patient went to the Baptist Hospital on the 11th of September, and the usual preparation for an abdominal section made. She was much debilitated by an unusually severe attack of hay-asthma and the accompanying wakefulness and bronchitis.

Mrs. T. G. H., English, twenty years old, married six years and never before pregnant. Last menstruation December 15th. Slight flow January 2d. Quickening April 12th.

Operation September 13th. Ether, given by Dr. Julia Tolman, was begun at 10.28. Patient on the table at 10.43. Vagina cleansed and sterilized; gauze introduced by assistant. The pad of corrosive gauze was removed from abdomen and the skin scrubbed with soap and water, which was followed by a wash of corrosive (1 to 1,000 water and alcohol).

Abdominal incision begun at 10.55. Uterus lifted out of abdominal cavity and a rubber ligature thrown around cervix, ready to tighten if hemorrhage proved uncontrollable without this precaution. Dr. Clara J. Alexander assisted, first holding the abdominal walls firmly against the uterus, and then held the broad ligaments, ready to compress the arteries more firmly after the child was delivered.

Incision made in uterus and membranes cut; incision continued to within seven centimetres of fundus and nearly down to the cervix. Child delivered at 10.56 and twenty seconds, or one minute and twenty seconds from the start. Cord clamped and cut; baby handed to Dr. Mary Hobart in five seconds more. The placenta was attached to the fundus, and the membranes were found adherent along the line of incision. Adhesions separated, and placenta grasped and gently twisted according to Kelly's method; removed intact without difficulty. Uterus immediately contracted and the wound closed by two rows of silk sutures, one row deep down to, but not through, the mucosa, and a second half deep. Cervix dilated from above, and a piece of Harrington's gauze pushed down through the cervix, leaving the end in the uterus, the vaginal gauze being removed by an assistant.

Dr. Anna Richardson assisted with the sponges and instruments. Uterus replaced and omentum pulled down over intestines. Meantime the walls had been so firmly held that no fluids had escaped into the abdominal cavity. Peritoneum closed by catgut and the walls by silkworm gut; the last stitch tied at 11.23, or twenty-three minutes from the start.

Sterilized gauze fastened over wound by collodion and dressings complete at 11.28. Before removing the patient from the table, indeed after placenta was delivered, two grains of ergotin was given subcutaneously and one pint of normal salt solution, with eight ounces of black coffee by rectum.

The recovery was uneventful for the mother, excepting for the bronchitis increased by the ether, and after-pains such as might be experienced by a multipara.

The gauze was removed from the cervix at the end of twelve hours, and with the exception of the second twenty-four hours the lochia went on as in a normal case. I mention this because I find that experiences vary, and the alarm I felt when the discharge ceased the second twenty-four hours was not justified.

As for the baby, the resuscitation was difficult, and not for thirty-six hours was the condition satisfactory. The child seemed profoundly etherized. The present condition of mother and baby is perfect.

I have to thank my assistants and hospital nurses, who helped to make this case a success.

THE MEDICO-LEGAL SIGNIFICANCE OF THE PRESENCE OF SUGAR AND GLYCOGEN IN THE LIVER POST MORTEM.[1]

BY W. K. BROWN, M.D., AND WYATT JOHNSTON, M.D., MONTREAL.

IN 1897 Lacassagne and Martin, of Lyons,[2] reported the results of two hundred cases which were tested as to the presence of sugar and glycogen in the liver at the autopsy. Their observations were made with a view of investigating the statement of the late Claude Bernard,[3] that the livers of persons dying sudden or violent deaths contained sugar or glycogen, and usually both, while these substances were said to be absent from the livers of persons dying of disease.

Until the subject has recently been re-studied and a practical method of performing the test was discovered by Lacassagne there were practically no observations, except some made in his laboratory by his pupils Colrab and Fochier in 1888, and Colonel in 1893. The technique recommended is to make an emulsion of the liver-substance (usually 100 grammes), by rubbing it up with water, boiling this in a porcelain capsule, filtering with animal charcoal, and testing the filtrate by Fehling's solution. If glycogen was present the fluid was opalescent. We find that smaller amounts of liver-substance suffice, and that the use of charcoal is hardly necessary.

Lacassagne and Martin recognized the medico-legal value of a test of this kind in deciding such difficult points as whether the injuries received by a person suffering from some serious disease are the immediate cause of death or not. They state that, in the main, their results are strongly confirmatory of the statements of Bernard, though they reserve for the present their opinion as to its significance in poisoning cases. They find that dead-born syphilitic children give a negative reaction, and children live-born or dying during parturition positive ones. On these points we have confirmed their observations.

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[1] Read at a meeting of the Massachusetts Medico-Legal Society, October 5, 1898.

[2] Archives d'Anthropol. Criminelle, 1897, p. 446.

[3] Thesis de Faculte des Sciences, 1853.

As the matter seemed to us of practical importance we have made observations on a series of one hundred unselected cases, obtained from the coroners' court and hospital service, and about equally divided between violent and natural deaths. We wish here only to summarize the results obtained, and it is the intention of one of us[4] to report the observations more fully in a subsequent paper. The number of cases studied we do not regard as sufficiently large to serve as a basis for exact statistics. Our results were typical in eighty-eight cases and atypical in twelve.

(*a*) RESULTS IN CASES DYING FROM DISEASE.

Sugar and glycogen were found absent from the livers of those dying from disease except in two cases, in one of which cerebral hemorrhage and in the other brain abscess suddenly terminated the lives of persons apparently in fair health. One case of fatal gastric hemorrhage in hepatic cirrhosis gave a negative test, however. In cases of sepsis, of even a few hours' duration, the result of the reaction was always negative. In an elderly person dying of exhaustion ten days after the receipt of severe burns sugar and glycogen were also absent. A negative result was obtained in a case of puerperal eclampsia fatal in twenty-four hours. A negative result was obtained in a case of diabetes dying from septic infection following gangrene.

(*b*) RESULTS IN CASES DYING FROM VIOLENCE.

Where the death was sudden and affected persons in vigorous health, sugar and glycogen were always present, provided that the processes of alimentation were proceeding in the ordinary manner. On the other hand, in three cases where death resulted within forty-eight hours of injuries (cut throat, fracture of vertebræ, fracture of the base of skull) the result was negative; in the last-named case there was a moderate catarrhal jaundice, from which the patient was convalescing, and the lungs showed traces of commencing aspiration pneumonia. In two cases where death was immediate and due to fracture of the skull, the liver showed neither sugar nor glycogen. In both of these cases there was evidence, both post-mortem and clinical, of acute alcoholism, while there appeared to be no food in the stomach or upper intestine, and in one of them scarcely any feces was found in any part of the intestines. Here it appeared that the individuals had been indulging in a long spree, and, as is common in such cases, had taken little or no food. In another case, where death occurred in the course of an attack of delirium tremens, a negative test was obtained. We think that this point is one on which further information is important, in view of the frequency with which an excessive use of alcohol forms an incident in the circumstances in deaths calling for medico-legal examination.

A case of suicide by carbolic acid also gave negative results to the test. Here, as the man was found dead locked in his room, we had no clear account of the conditions affecting alimentation, but it was stated that his habits were intemperate and that he had recently been drinking heavily. The autopsy did not show that food had recently been ingested.

In two cases of drowning, where the bodies were in an advanced state of decomposition, the test gave negative results; in two others the test was positive.

CONCLUSIONS.

We can confirm the results of previous investigators as regards the result of the test in healthy persons living under normal conditions of nutrition. From our experience so far we are inclined to regard the test as one of very considerable value where the conditions relative to alimentation previous to death can be established through the history or by the results of the post-mortem. It should be borne in mind that the information as regards the cause of death is indirect and that the direct information relates only to the glycogenic function of the liver. We wish to emphasize the important influence of sepsis and of alcoholism with abstention from food; when these are excluded we find the results very constant.

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[4] W. K. B.

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Medical Progress.

REPORT ON PROGRESS IN GYNECOLOGY.

BY EDWARD REYNOLDS, M.D., BOSTON.

SOME OF THE DISADVANTAGES OF VAGINAL DRAINAGE FOR PELVIC ABSCESS.[1]

In this extremely interesting paper Noble, one of the leading advocates of vaginal drainage, takes occasion to insist upon the restriction of this method to large complicated pelvic abscesses, especially in acutely sick and in feeble patients, and incidentally writes of the disadvantages of the method. He believes that the operation must occasionally be abandoned from incorrect diagnosis, and in other cases on account of mechanical difficulty in reaching the abscess from below.

He quotes under this heading the case of a patient who had had six previous abdominal sections. Her appendix, her ovaries and her uterus had been removed, and she had had several operations for secondary trouble. Her temperature was 103° F., and a mass was felt in the left half of the pelvis. On making an incision into left broad ligament no pus was found, and an extensive exploration of the ligament with the finger made it evident that the mass was of a non-inflammatory character. At a subsequent abdominal operation it was found to be a small cyst in the broad ligament. The vaginal incision did no harm and no good. He reports another case in which he broke up several large exudates without finding any pus, and was uncertain whether the operation was to be of value or not. It did no harm, and was followed by the greatest benefit. He reports in detail two other cases in each of which a vaginal incision into an ovarian abscess failed to effect a cure, and its radical removal by an abdominal operation was subsequently necessary. After reiterating his belief in the value of the method for restricted use, he closes in the following words: "When a method of treatment is comparatively new its advocates usually describe its advantages in glowing terms, and say nothing of its disadvantages. Its opponents, on the other hand, decry the operation, but as they do so without experience, their testimony, as a rule, carries less weight. As I have advocated this method of treatment, I thought it might be of interest to relate these instances of failure or partial success. They carry the lesson that disappointments will frequently follow a resort to vaginal incision and drainage for supposed pelvic abscess. The frequency of failure will of course depend upon the relative accuracy of diagnosis in these cases."

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[1] Charles P. Noble M.D. American Gynecological and Obstetrical Journal, vol. xii, p. 301.

IMPROVED TECHNIQUE IN OPERATION FOR INTRA-LIGAMENTOUS CYST, WITH PRESENTATION OF SPECIMEN.[2]

Hall, after describing the ordinary methods of dealing with sessile, intra-ligamentous cysts, describes a method which he practised successfully on an extremely difficult and almost hopeless case. Its essentials consist, briefly, in tying off both the uterine and ovarian arteries upon the healthy side, cutting down through the broad ligament of the healthy side and across the cervix; then tying the uterine upon the other side, and peeling out the cyst from below, cutting away the broad ligament as becomes necessary. The operation is, of course, rendered bloodless and much more rapid. The writer was led to it by the imperative necessity of controlling hemorrhage during an operation which he reports.

ON THE PATHOLOGY OF STUMP-EXUDATES AFTER SALPINGECTOMY.[3]

Ries makes an exceedingly interesting report upon his microscopic examinations of three uteri which were removed some months or years after the removal of one or both tubes. All the tubal stumps were found permeable. After reporting the cases in detail, and reporting one in which Gottschalk found the tube occluded, he says: "At all events, Gottschalk's communication proves that my observations must not be generalized without further investigations. The cases seem to differ. In some the tubal cavity becomes occluded; in others it does not. Presumably, the technique of the operation has something to do with this difference, though at present we are not in a condition to say how much. If the uterine end of a tube is broken off in the course of the removal of a tube, as happens frequently in cases where the tubal tissue is chronically inflamed and infiltrated, it is often unnecessary to put any ligatures on the stump. In these cases there is a greater probability of the tubal cavity remaining open. I could not find out whether this occurrence had taken place in the three cases which I have reported above. Cauterizing the stump will hardly suffice to bring about complete occlusion. If the tubal stump is ligated with silk the thread remaining on the stump for a long time may, by pressure atrophy, bring about complete occlusion, while catgut, perhaps, will be absorbed before pressure atrophy of the mucous membrane has been effected. Stitching the peritoneum over the tubal stump, or, better even, excising a wedge of uterine tissue with the tube and closing the wound in the uterus with sutures through its muscular tissue should give more probability of success.

"My observation that the tubal cavity may remain patulous after salpingectomy appears to give a natural and more rational explanation of the origin of stump-exudates than any other theory hitherto offered. It is clear that, the tubal lumen remaining open, infection ascending from the uterus finds ready access to the peritoneum through the open tubal stump, just as primarily the infection spread from the uterus along the tubal mucosa into the peritoneum. This latter process causes perisalpingitis, perio-ophoritis, perimetritis, the conditions so frequently associated with tubal inflammation — and a perisalpingitis forming around a tubal stump is exactly the condition which is clinically termed a stump-exudate. These observations explain also the difference between two classes of cases, one class being characterized by the occurrence of the stump-exudate during the convalescence from the operation, in the other class the stump-exudate occurring months after the operation. In the first class the infection has spread through the open tube from the uterus, which contained infectious material at the time of the operation and could not be made completely aseptic. In the second class of cases the uterus has been healthy or was made aseptic at the time of the operation, but the uterus is infected, and the infection spreads through the open tubal stump after the patient has left the hospital.

"If after removal of the tube its stump can remain open it is not only possible that an infection spreads through it but an ovum may pass through the patulous stump and pregnancy take place. And, in fact, modern literature contains a number of cases which are almost experimental evidence of the possibility of the tubal stump remaining open after salpingectomy. Such cases are published in the *Transactions* of the American Gynecological Society for 1892, and in the *American Journal of Obstetrics*, 1897."

EFFECT OF THE ERECT POSITION ON MENSTRUATION.

E. C. Gehrung[4] considers that the immense number and variety of diseases to which the human female is subject, in comparison to the female of other mammalia, is influenced by the erect position.

The study of sanguineous menstruation, which belongs almost exclusively to the human female, has been the subject of much labor and speculation. Some scientists contend that it is a secretion; others that it is a hemorrhage. The author places himself unreservedly upon the latter side. If it is a hemorrhage it is pathologic, and not physiologic. He considers this excessive sanguineous discharge an accidental hemorrhage, subserving no useful purpose, and recognizes for its principal cause the erect position.

From his observations the author draws the following conclusions:

(1) That the erect position of man is acquired or assumed, and that the different organs have to depend for their support greatly on accident and the gradual adaptation, through necessity, of means to ends. A gradual transformation has occurred through numberless years, but the transformation is not yet complete.

(2) That if the support of the pelvic organs is insufficient for all purposes the production of artificial ligaments (Alexander's ventrofixation, etc.), or artificial mechanical supports, are the legitimate means to counteract the otherwise deficient conditions, and that a reliance on therapeutic agents is generally useless.

(3) That menstruation is the equivalent of the rut or estruation of the lower animals, and may or may not

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[2] Rufus B. Hall, M.D. American Gynecological and Obstetrical Journal, vol xii, No. 1, p. 23.

[3] Emil Ries, M.D. American Gynecological and Obstetrical Journal, vol. xii, p. 29.

[4] Denver Medical Times, January, 1898.

be accompanied by a greater or less sanguineous discharge.

(4) That any excessive loss of blood, or loss for too long a period, is radically wrong — a pathological condition due principally to the erect position, and that it should, by all means at our disposal, be repressed (not suppressed), that is, diminished to a moderate quantity and duration, especially by mechanical means, such as vaginal dry or wet tampons.

THE EXISTENCE AND THERAPY OF CHRONIC GONORRHEAL VAGINITIS.

Oskar Bodenstein[5] claims that the chief seat of chronic gonorrheal colpitis is in the posterior vaginal fornix, and adds, furthermore, that this, and not the urethra, is almost invariably involved. Many authors have considered this to be the starting-point of the process.

He quotes the following clinical criteria, as taught by Sanger, for the establishment of the diagnosis of chronic gonococcus infection:

(1) The history may reveal: (*a*) opthalmo-blenorrhea of one or more children; (*b*) former *ardor urinæ;* (*c*) gonorrhea in the husband.

(2) Disease of Bartholini's glands, characterized particularly by a petechial purplish red area about the orifice of the ducts; especially suggestive is the discovery of the *maculæ gonorrhœciæ* on both sides, together with a reddening of the ureteral orifice.

(3) Fistulæ, abscesses and cysts of the Bartholinian glands are conclusive evidence of existing gonorrhea.

(4) Spitzcondylomata.

(5) Dark red spots upon a yellowish-white streaked base upon the vulva.

(6) Erosions of the external os of the cervix.

(7) The local application of a 50-per-cent. solution of zinc chloride will cause the granules in the vaginal mucous membrane to spring into relief in chronic gonorrhea.

(8) Involvement of the urethra.

Irrigation practised by the patient should be of strong solutions of bichloride or carbolic acid, should be taken in the recumbent position and with an elevation of the bag to the height of one to one and a half metres. He calls particular attention to the advantage gained by making use of the air contained in the douche-nozzle and tube as a means of distending the vagina, thus creating an "aërocolpos." In this manner all the folds and irregularities of the organ are straightened out, and the entire surface becomes accessible to the irrigating fluid.

But it is chiefly to the treatment of these cases in which the irrigation treatment has been unsuccessful that his paper is directed. As is the case in the male urethra, chronic gonorrheal vaginitis is a deep-seated process, the infectious agents being found chiefly in the submucosa, and thus but little affected by irrigations, especially as ordinarily practised. In the treatment of chronic urethritis in the male, large-sized sounds are used, which distend the affected areas, mechanically bringing the gonococci nearer to the surface, and thus excite increased secretion, which is controlled by local applications. Reasoning from analogy, a similar plan of treatment ought to be successful in chronic vaginitis. He employs, therefore, a firm tamponade of the upper half of the vagina, filling in all the fornices. To aid in the softening and desquamation of the abnormally thickened horny layer of the epithelium he adds glycerine to the cotton employed for this purpose. This agent, in virtue of its hygroscopic properties, also produces an exosmosis, which washes the gonococci to the surface. After twenty-four hours the tampons are removed, the secretion (which is increased in amount) mopped up and a topical application of nitrate of silver made in solutions varying in strength from 2 to 20 per cent. Then the tamponade is again practised. In this manner an early cure will be effected, provided, of course, that the adnexa are not also the seat of infection.

THE APPENDIX AND THE FEMALE GENERATIVE ORGANS.

Pichevin[6] says that Trent, of Amsterdam, basing his opinion on the anatomical researches of Glado, advances the theory that appendicitis is a less serious affection in women than in men, on account of the free passage of the infectious products from the lymphatics of the appendix to those of the broad ligament, and that thus a parametritis is often produced, the origin of which could be traced to the appendix. He then adds the description given by Glado of the appendiculo-ovarian ligament:

"The relation between the appendix vermiformis and the internal genital organs of the female has long since been recognized. It is known that the appendix can come in contact with the appendages of the uterus and contract adhesions with either ovary or tube.

"Upon lifting up the appendix there is formed a peritoneal fold, which is continuous with its meso, and passes forward to merge with the superior border of the broad ligament. This falciform band is the appendiculo-ovarian ligament. It is least elevated at its centre, where it crosses the iliac vessels, and measures about one to two centimetres in height. It is a fairly constant anatomical structure and permits of a more or less free communication between the lymphatics of the organs thus connected, as was shown in two cases by injecting the recent specimens with colored fluids. Thus a starting point is offered from which many important pathological deductions may be drawn. It explains the course of purulent collections from the broad ligament to the cecum, and *vice versa*, and the frequent determination of pus accumulations toward the iliac fossa finds herein an acceptable anatomical explanation."

The author remarks that as Glado has been able to prove the existence of this lymphatic communication in but two cases, it is therefore exaggerated, or at least premature to describe this as a constant anatomical condition, and adds that further researches will be necessary to prove the pathological value of Glado's discovery.

A SIMPLE METHOD OF COLLECTING THE ISOLATED SECRETION OF EACH KIDNEY IN THE FEMALE.

Alfred Neumann[7] calls attention to the fact that in considering the indications for operative interference in cases of unilateral tumor of the kidney it becomes expedient to determine the presence and integrity of the other kidney, especially when the urine passed *per urethram* contains blood, pus, kidney epithelium, etc. Catheterism of the ureters, he says, is difficult of accomplishment, not devoid of danger, and has of itself caused hemorrhage in 50 per cent. of the cases. The various methods of comparison and the temporary ligation of one ureter have found but few adherents.

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[5] Deutsche med. Woch., October 14, 1897.

[6] La Semaine Gynécologique, November 16, 1897.

[7] Deutsche med. Woch., October 21, 1897.

His idea rests upon the principle of partitioning off the two sides of the urethra and of the fundus of the bladder to the height of the mouths of the ureters. This is accomplished by means of a tube of thin metal, four centimetres in length, one centimetre in diameter, and containing in its lumen a vertical partition, which is continued beyond the proximal end of the tube to a distance of four centimetres, so that its entire length is eight centimetres. At the distal end of the tube the two lateral compartments are prolonged into two diverging tubules to each of which a test-tube can be attached. The proximal end of the partition gradually narrows down to a rounded point. The tube and its prolongation have a slight curve with the concavity upward, so that it adapts itself well to the posterior surface of the symphysis pubis.

The method of application he describes as follows: The patient sits well forward on the edge of the operating-table and rests the extended and abducted limbs upon the floor or other support; the conical end of the instrument is passed into the urethra with the concavity forward, and readily glides into the bladder, upon which any urine which may be present will flow out. Then one of the tubules is attached to an irrigator, and the bladder is flushed with a solution of boric acid. After this fluid has been drawn the index finger is passed into the vagina and the instrument is gently and evenly pressed against the symphysis pubis, and thus the lower segment of the bladder and the urethra are divided into two separate compartments, each receiving the secretion of its respective kidney. As additional advantages of this method he cites: That the secretions of two kidneys are received simultaneously, thus allowing a comparison to be made of the amount of the secretion from each; that the position of the patient is less objectionable to her than those employed in other methods of investigation; that neither general nor local anesthesia is required; that illumination of the bladder is unnecessary, and no danger of infecting ureter or kidney is incurred; and, above all, that it requires little or no dexterity to accomplish the desired object.

POST-OPERATIVE PYSCHOSES.[8]

In a discussion on this subject before the Société de Chirugie[9] Reynier denies that psychical disturbances could result from surgical operations in patients without any previous tendency to such manifestations. A careful review of the family history of such individuals will show that there is either a marked hereditary taint, or that they have already presented evidences of some mental or moral aberration.

Segond affirmed that he was unable to offer a satisfactory explanation of the psychoses following gynecological operations. He was inclined to believe that suggestion was an important factor in many instances. Among 642 cases of artificial climacteric he was able to find, after a conscientious search, only four patients with post-operative mental affections — one of kleptomania, two of melancholia, and one of mania. The latter persisted for only two weeks, and the two cases of melancholia made a rapid recovery. The patient with kleptomania "was a thief before operation and remained one afterward."

The speaker summarized his views as follows: There is no recorded case of a pyschosis directly due to a surgical operation. In the majority of the cases in which mental disturbances have been attributed to surgical interference the patients were either mentally affected beforehand or possessed an hereditary taint. In the absence of a previous history, women who become insane after operations should be regarded as the victims of suggestions, furnished by either the physician or friends of the patient.

PLASTIC OPERATION FOR INCONTINENCE OF URINE.

Lebedeff[10] reports the case of a patient who was unable to retain her urine after an operation for urethro-vesico-vaginal fistula. In order to replace the sphincteric action which was wanting he advised the following method of making pressure upon the posterior wall of the urethra: a surface an inch long and half an inch wide was denuded on either side of the urethra, in the folds between it and the labia minora. The posterior wall of the urethra was then pushed upward so that the surface could be apposed, and their inner edges were united by a continuous catgut suture. Silk sutures were used to complete the approximation. On filling the bladder with water and exercising upon it, its retentive power was found to be perfect.

KUSTNER'S INCISION IN CELIOTOMY.

Frantzen[11] describes the following modification of Kustner's incision in ventrofixation: A transverse cut is made through the skin, its edges are held apart with retractors, and the peritoneal cavity is then opened by a longitudinal incision. Two sutures are passed through the fundus uteri and include the peritoneum, aponeurosis, and lower skin flap. Deep sutures are inserted, and finally the edges of the external wound are approximated, and the sutures, including the uterus, are tied over a roll of gauze. The resulting cicatrix is said to be quite firm.

CASES OF PREGNANCY FOLLOWING VENTROFIXATION, AND IMPROVEMENTS IN THE TECHNIQUE OF THE OPERATION.

The Treatment, through the Posterior Vaginal Cul-de-Sac, of Adherent Uteri.[12]

Dr. H. A. Kelly said that the suggestion to operate on the posterior pole of the uterus was most rational from a mechanical standpoint, but there were certain difficulties connected with the technique which demanded careful consideration and experimentation before a final judgment could be passed. His own preference had been for hysterorrhaphy or suspension of the uterus, not fixation. Out of 110 of these operations done since 1889, all of them through the abdomen, not one had died, nor had a single case developed ileus or, indeed, any serious morbidity. There had been very little vesical disturbance, particularly since he had been using rectal enemata of saline solution on the operating-table. With one exception there had not been anything unusual about the subsequent pregnancies. This one exception, however, had thrown a good deal of light on the proper method of operating. She was one of the early cases, done according to a method which had proved faulty. Suppuration occurred, making it necessary to remove the sutures. As a consequence, extensive adhesions formed between the uterus and the abdominal wall. She became pregnant, and was delivered after a difficult forceps operation. She recovered, with an infection on the left side. This case emphasized the great importance of not "fixing" the uterus. The uterus should come up easily and lie almost in touch with the abdominal wall. When the pelvis was deep he modified the operation by catching the peritoneum behind the symphysis pubis and pulling it over the top of the uterus, and so getting rid of the traction. As a matter of fact, however, there always was some traction, owing to the filling of the bladder and to the fact that the uterus does not lie normally in contact with the abdominal wall. After some months the ligaments are pulled out and the uterus is in a perfectly normal anterior position and at "rest." Those who were specially interested in the statistics of this subject should give an analysis of the difficult labors based upon the exact method of operating. He had recently collected the various operations, and had found that there were no less than forty-five different methods of treating the uterus. Personally he preferred the direct operation — getting at the uterus through the abdominal cavity — rather than doing Alexander's operation. Both operations were substitutes for the normal, for the round ligament was not put there by nature to hold the uterus anteriorly, except under unusual conditions. If the ligament did any active work in holding the uterus forward, it would not appear, as it does, as a soft lax cord when viewed through the abdomen at operation. Dr. Kelly said that he had found in subsequent laparotomies that some of these round ligaments rupture after Alexander's operation. One patient recently examined in this way after pregnancy and delivery showed the uterus in a backward position and the ligament greatly elongated. It measured 19 centimetres in length from the posterior surface of the uterus to the anterior abdominal wall, and was only 1.5 millimetres in diameter. He still preferred the suspensory operation, which he had practised for so many years, and he would continue to practise it unless more cogent reasons were advanced in favor of some other method.

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[8] American Journal of Medical Sciences, August, 1898, vol. cxvi, No. 2.

[9] La Presse Médicale, 1898, No. 28.

[10] Wratch; La Gynécologie, 1897, No. 6.

[11] Gaz. de Botkine; La Gynécologie, 1897, No. 6.

[12] American Journal of Obstetrics, July, 1898, vol. xxxviii, No. 247.

Reports of Societies.

FIFTH DISTRICT BRANCH, NEW YORK STATE MEDICAL ASSOCIATION.

Fourteenth Annual Meeting, Held in Brooklyn, May 24, 1898.

The President, N. W. Leighton, M.D., in the chair.

DISCUSSION ON GONORRHEA.

Dr. Robert W. Taylor read a paper on

THE PATHOLOGY AND TREATMENT IN MALES.

Within the last few years, he said, so much talk had been disseminated in regard to this subject that was loose and unscientific that the time seemed ripe for a clear and conservative discussion. In the sensational reports of the marvellous cure of cases in an incredibly short space of time with which our medical literature had been flooded one was struck, first, with the flippancy of tone displayed by the writers, and, second, by their lack of knowledge of the pathology of this really very serious disease, which they affected to regard so lightly. When we read of these speedy cures in such a large percentage of cases we perhaps wondered why we were not able to get such brilliant results; but the real marvel was the utter recklessness of the statements of these writers who advocated such unwarrantable measures. The present contribution, Dr. Taylor said, was an honest attempt to throttle this recklessness. Undoubtedly our recent more precise knowledge of the pathology of gonorrhea had taught us much that was of advantage in the treatment of the disease; but it was still true that there was much in the old methods that was worthy of retention.

In the great majority of cases the infecting agent was the gonococcus of Neisser, and in a small minority the streptococcus and staphylococcus. In addition to the virulence or mildness of the infection, the susceptibility of the individual had much to do with the severity or lightness of the attack in any given instance. It was thus seen that in order to obtain any reliable data we must have a knowledge of the intimate nature of the disease and of the constitution and condition of the subject attacked. If the microorganism were virulent and the tissues in a favorable condition for it the development of the infection would be rapid. Having described the initial symptoms of an attack of gonorrhea and the microscopical appearances of the discharge in the first stage (before the appearance of the pus), he said that the latter proved that the infection was as yet confined to the surface of the mucous membrane. If the patient was seen in this stage it was possible in many instances to abort the attack, but, unfortunately, very few patients appreciated the significance of the early symptoms of the disease, and the surgeon was rarely consulted until it was too late to make any attempt at aborting the trouble.

As the infection progressed toxins were developed, there was marked hyperemia, and the submucous tissues became involved, while the inflammatory process extended farther and farther along the urethral canal. The secretion was now yellowish and thick, and contained pus-cells, as well as gonococci. In such an acute attack of gonorrhea, generally involving the posterior urethra and accompanied with much cellular exudation, it was well to remember that in the list of requirements for a cure the killing of the gonococcus was to be placed last. Our aim should always be to allay the inflammation and, by restoring the parts to their normal state, deprive the gonococcus of the conditions necessary to its activity.

Referring to the "rapid transit" methods of treatment of late so much in vogue, Dr. Taylor described Janet's plan of irrigating the urethra. By the use of a solution of permanganate of potassium varying in strength from 1 to 1,000 to 1 to 4,000 or 5,000 Janet claimed that he could not only abort gonorrhea in the inital stage but that he could promptly cure it in the acute stage. The irrigation treatment had to be applied by the surgeon, to whom it was necessary for the patient to go once or twice a day. Cases treated in this manner were looked upon as cured in a very short time, but when they were closely investigated it was generally found that there remained some redness and a sticky condition of the mucous membrane. As a matter of fact, the patients in the majority of cases were not cured at all, and after the irrigation had been discontinued it was generally found necessary to resort to the ordinary methods of treatment. By this irrigation plan the patient was railroaded into the terminal stage of the disease. It was apt to be followed by catarrhal inflammation and other more serious results. If the patient escaped epididymitis he would probably have posterior urethritis and severe stricture. This hydrostatic irrigation had been exploited fifteen years ago in this country, long before Janet had appeared as its champion. Among its disadvantages were, that it impaired the resiliency of the parts and gave rise to chronic prostatic irritation; so what should have been a boon proved a curse to the patient.

A treatment that was based on the pathology of the disease gave the best results. It was worth while to mitigate and shorten the attack if it could be done in a safe and reliable manner. In the early stage it was advisible to introduce into the fossa navicularis a three-and-one-half-inch soft-rubber catheter and employ rather strong solutions, such as permanganate of potassium, 1 to 500, nitrate of silver, 1 to 250, and bichloride of mercury, 1 to 1,000. Many cases could be thus aborted, but it was by no means certain that the result would be successful. With the utmost care in diagnosis and treatment we could never prognosticate with positiveness that the measures employed would prove curative.

In acute gonorrhea the old-time measures were still of great service. Among these might be mentioned rest, a spare diet, the avoidance of coffee, alcohol, spices and asparagus, moderate purgation and a general antiphlogistic treatment. In florid stage it became a question whether any local treatment would be admissible. It was generally of service, however, to have the penis soaked frequently in a hot concentrated solution of boric acid. If any injection was made into the urethra it should be with a syringe having a soft-rubber extremity. With the subsidence of the very acute symptoms injections of warm lead water were often of service. Later the ordinary penis syringe could be employed and various injections resorted to, such as lead hydrastis, astringents, etc. Of late certain new remedies had been highly recommended, such as argonin, protargol, etc., but he thought it was as yet too soon to pronounce definitely as to their efficiency. In the declining stage, although it was now the fashion to frown upon their use, he still thought the various antiblennorrhagics of decided benefit. If it were found that they caused gastric disturbance they should be discontinued.

In every case of gonorrhea the examination of the urine from time to time was of great practical service to the surgeon. With the disease in the acute stage and advancing, pus-cells were found in abundance, but with the decline of the inflammatory process there was a change in the urine, and the appearance of epithelial cells indicated the commencement of the reparative process. Our aim should now be, *First*, to cause the absorption of the round-cell exudation and give tone to the blood-vessels, and *second*, to assist the formation of new epithelial coatings. Here the nitrate of silver was of great service. From two to four ounces of a solution of the strength of 1 to 8,000 or 10,000 should be injected once a day. If the effect was good the strength of the solution might gradually be increased up to 1 to 250. Pus gradually disappeared from the urine, and the epithelial cells also grew less and disappeared.

The treatment thus outlined was comfortable to the patient and curative. By it the integrity of the submucous tissues was maintained, for with the use of a small, delicate catheter no damage could be done. As to the length of time required for the cure of a gonorrhea, he thought that both the profession and the public had been grossly misled by the statement so often made, that it was only from a week to fourteen days. Many of the so-called cures, it could be positively stated, were failures and the patients were left in really bad condition. Dr. Taylor thought that if a patient were cured in from four to six weeks he might consider himself a lucky man, and that the statistics of the so-called rapid transit methods were altogether fallacious.

Dr. John W. S. Gouley read a paper on

URETHRAL STRICTURES.

He proposed, he said, to speak briefly on the genesis and management of idiopathic strictures. Fifty years ago the opinion prevailed that strictures were due to the violence of the treatment that patients were subjected to — the so-called abortive treatment. Since then it had been made clear that the urethritis itself is the real basis of the stricture, that an acute urethritis is a stricture *in posse* and a chronic urethritis a stricture *in embryo*. With the cure of an acute urethritis the nascent stricture might be nipped in the bud, but if trouble remained after the acute urethritis the stenotic process might be of very slow growth. The formation of a stricture was due to the deposit of a new product, a cicatricial or scar tissue, of a slowly contracting nature, resulting from the urethral inflammation.

Dr. Gouley then referred briefly to the various methods of treatment of urethral stricture. The sudden and violent methods of divulsion formerly employed, he said, had now been abandoned. In speaking of internal urethrotomy he said that while incision of the meatus might be necessary, it should never be to the extent of producing that unsightly hypospadias which was so revolting to the patient. In case there was fistula or extravasation of urine present external urethrotomy was called for. There was no method of treating urethral stricture which did not require long-continued periodic dilatation by means of the sound; but the abuse of very large sounds was to be deprecated.

Dr. William E. Beardsley read a paper on

GONORRHEAL RHEUMATISM.

He said that about ten per cent. of those suffering from gonorrhea were attacked with symptoms of gout or rheumatism. The affection was first mentioned by Martinière, in 1644, but it was Sir Benjamin Brodie, of England, who was the first to clearly describe it. Having mentioned that Tyson regarded it as of septic origin, and referred to Taylor and other authorities, he stated that since the discovery of the gonococcus by Neisser, in 1879, the view had been pretty generally accepted that the disease of the joints or fibrous structures was due to the invasion of micro-organisms, or a specific poison affecting the general system.

The synovial membrane was first affected, and then the fibrous aponeuroses. Suppuration was seldom met with. The fever accompanying the joint affection was slight. The joint affection, as a rule, was not severe and showed no tendency to metastasis. The joints attacked were generally the larger ones, and especially the elbow and wrist. Among the other parts more or less liable to be affected were the knees, ankles, fingers, toes and the sterno-clavicular articulation. There were swelling and tenderness, and the tissues covering the joint and the adjacent parts were apt to become edematous; but there was not usually a blush of the skin. The pain was acute, and was much increased by any attempt to move the limb. Tenderness was especially noticeable when pressure was made upon the stronger ligaments of the joint. Cardiac complications were rare. An absolute diagnosis in the earlier stages was often very difficult. In arriving at a diagnosis we must exclude other forms of rheumatism, and the gonorrheal history was, of course, of great service. The discharge from the genital organs might be slight, or even a mere gleet. It did not appear to be diminished or otherwise affected by the outbreak. As a point in the diagnosis, it should be remembered that in this affection the swelling was chiefly external to the joint. *Prognosis:* Few cases proved fatal, but chronic joint trouble sometimes resulted. Anchylosis was an occasional sequela.

In the treatment it was well to devote especial attention to the urethral or vaginal discharge, as the cessation of this was usually followed by improvement in the joint trouble. The affected joint should be kept at rest, and hot or warm applications made to it. Attention should be paid to the general health of the patient, and Miller had obtained good results with quinine, the dose being rapidly increased from one to five grains, three times a day. Alkalies, iodide of potassium, salicylate of soda and other remedies for rheumatism had often been tried in this affection, but seemed to be quite unsatisfactory. As a rule, it might be stated that the joint affection improved under the use of treatment based on the history of gonorrhea.

Dr. Lawrence Coffin read a paper on

GONORRHEAL OPHTHALMIA IN ADULTS.

This affection, he said, was characterized by catarrhal inflammation, photophobia and the sensation of a foreign body in the eye. There was great danger of losing the eye, as the cornea became involved in ulcerative processes. There was a profuse purulent discharge, and the neighboring glands were liable to become affected. Purulent inflammation of the entire eye might result, constituting what is known as panophthalmitis. The disease was most frequently contracted by the use of the same towel by a husband and wife, or by a number of employees in a factory or mill. It was a point worthy of notice that we did not always find present the gonococcus of Neisser. The right eye was generally affected first, and the reason for this was perhaps because the right hand is apt to be more frequently carried to the eye than the left.

Treatment. — It was best to put the patient to bed, because when this was done we could better regulate the light and temperature, and also be assured that our local applications would be made more regularly. It was a matter of importance that the unaffected eye should be protected. The conjunctival sac should be washed with a solution of bichloride of mercury of the strength of 1 to 3,000 or 5,000 every one or two hours. At the outset, if there were great swelling and edema, and not much pus, the use of nitrate of silver was not called for. The instillation of solution of sulphate of atropia, of the strength of two grains to the ounce, with cocaine, was of great service in many cases. In addition to whatever other treatment was employed light compresses of cheese-cloth, kept on a block of ice, should be applied over the eye freshly every half-minute throughout the day and night. If there were ulcerations present hot applications, instead of cold, should be used. Leeching was sometimes very beneficial. In the second stage, when the discharge was purulent, nitrate of silver was called for, great care being taken not to destroy the conjunctiva.

Dr. Coffin said that he had found hydrozone a very useful agent, on account of its antiseptic and pus-destroying properties. In young adults if the swelling of the eyelids was great it was sometimes necessary to cut the external canthus, dividing it with a scalpel from without, and leaving the conjunctiva uninjured. The hemorrhage thus caused was beneficial to the patient, and the procedure enabled us to apply our treatment more effectually. Great care in the way of cleanliness, both as regards the patient and the attendants, was, of course, essential. In the later stages of the disease weaker solutions of nitrate of silver were of service, as well as alum, zinc and the old ointment of red oxide of mercury. In spite of the most active and careful treatment, the patient might be left with haziness of vision and spots on the cornea, and, possibly, with staphyloma.

Dr. William McCollum read a paper on

MORAL PROPHYLAXIS AND THE ETHICAL DUTY OF PHYSICIANS TO THE PUBLIC.

He thought it was the duty of all family physicians to warn young men of the dangers and terrible consequences of venereal diseases. Moral prophylaxis, he believed, was of little value, but the prophylaxis of fear, if properly impressed, might have considerable beneficial effect. If a young man could have plainly set before him the evils resulting from illicit intercourse, which were liable to affect not only himself throughout life but also to destroy the health and happiness of his family, it might have considerable influence in helping him to avoid them. The trifling way in which gonorrhea was commonly spoken of showed that its frightful consequences were not at all appreciated by the public, and he hoped that the day would soon come when in all our high schools and colleges courses of lectures would be established in which the young would be instructed in these matters in regard to which they were now so wofully ignorant. It was, therefore, gratifying to learn that at the University of Berlin, within the last three years, a lecture course had been inaugurated in which an accurate knowledge of venereal disease was taught in a popular manner and illustrated with stereopticon pictures. These lectures, which were open to students in every department of the University, had been very largely attended, and their influence had already proved most beneficial.

Dr. J. C. Bierwirth read a paper on

THE MEDICO-LEGAL RESPONSIBILITY OF PHYSICIANS TO THEIR PATIENTS AND PATIENTS' FRIENDS.

He said that since he had been asked by the President to address the Branch on this subject he had investigated the matter very carefully, and had found that there is really *no* such responsibility. The well-known case of Kitson against Playfair was the only one on record bearing on the point, and a suit of that kind could never have been brought in the United States. It was well, therefore, he thought, that the general misapprehension on this subject should be rectified. In this country there was no law whatever prohibiting any physician from telling anything he knew about a patient, provided he spoke the truth.

The *moral* standpoint, however, was very strongly fixed in the minds of the medical profession, and in the code of ethics of the American Medical Association the sacredness of the relations between physician and patient was duly set forth. In the State of New York the prohibition applied only to the physician when on the witness stand. In the common law no such protection was afforded, and, therefore, the statute referred to was enacted. Dr. Bierwirth then quoted largely from an opinion by Judge Willard Bartlett, in which he cited a number of cases. If a physician, he concluded, disregarding his moral obligations, chose to expose the secrets of his patient, his doing so broke no statute, however reprehensible his conduct might be.

DR. L. GRANT BALDWIN read a paper on

THE SYMPTOMS AND DIAGNOSIS OF GONORRHEA IN FEMALES.

He was under the impression, he said, that it was Dr. Taylor who had once given expression to the opinion that gonorrhea is, directly or indirectly, responsible for more deaths than syphilis. Whether it was Dr. Taylor or some one else who had made the remark, he believed that few would dispute its truth at the present day. In the case of women one very unfortunate circumstance was that the disease so often escaped the attention of the patient. In the female the urethra was very often not affected. Whether the specific inflammation was located here or in other parts, however, many women naturally objected to having an examination made, and, even if an examination were made, the true nature of the trouble might not be recognized by the physician. One reason why this escaped attention was that few women, with the exception of prostitutes, were willing to confess that they had been exposed to the danger of contracting gonorrhea. Therefore, even if gonorrhea were suspected by the medical man, he might hesitate to make the true diagnosis.

If the urethra were primarily affected the attack would be attended with difficulty of micturition. There was a slight rise in the temperature and pulse, and the neighboring glands were apt to be affected. The discharge from the vulva was profuse and marked by a characteristic odor. Yet all these conditions might not confine the woman to bed or cause her to call in the services of a physician. Prostitutes, under these circumstances, often went on infecting men. Yet all the symptoms mentioned, it was not to be forgotten, might be caused by other troubles than gonorrhea, and a positive diagnosis could be only with the aid of the microscope. The acute stage of gonorrhea was seldom seen by the gynecologist. When the patient came under his observation the glands at the mouth of the vagina were usually enlarged, and the vagina itself was marked by punctate spots. There was a history of dyspareunia and sterility, and in the advanced stage of the affection the tubes and ovaries would be found to be seriously diseased. Many women would tell us that they had never been ill until they had married, and that since that time they had suffered from backache, headache, leucorrhea and menorrhagia or metrorrhagia. There were some cases in which the disease extended rapidly beyond the uterus, but these were not common.

(*To be continued.*)

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Recent Literature.

Leprosy in New South Wales. Report of the Board of Health for 1896.

There are some noteworthy points in this brief report. Thirty-seven cases were under detention in the lazaret. Nine previous were reported as being suspected lepers during the year, six of whom turned out to be affected by some other disease. Nineteen of the patients were Chinese, and were deported to their former home. Of the sixteen remaining in the hospital, eleven were whites — a very significant fact.

Appended to the report are four life-size, excellent radiographs of changes in the bones of the fingers in cases of anesthetic leprosy.

New South Wales has set a praiseworthy example to other countries, (1) in requiring that all suspected persons shall be examined by experts, under a warrant issued by the Board of Health; (2) by making the notification of leprosy and the detention of lepers compulsory; and (3) in the deportation of foreigners affected by this disease to their own country.

A Manual of Otology. By GORHAM BACON, A.B., M.D., Professor of Otology in Cornell University Medical College, New York; Aural Surgeon, New York Eye and Ear Infirmary, with an introductory chapter by CLARENCE JOHN BLAKE, M.D., Professor of Otology in Harvard University. New York and Philadelphia: Lea Brothers & Co. 1898.

Dr. Bacon's work is, as both its title and the arrangement of its contents imply, not a text-book but a handbook especially intended for the use of students, the purpose of the author in preparing a manual of otology being, as set forth in the preface, to give the student a short and compact treatise on the subject and at the same time to afford a book of easy reference when opportunity may be lacking for the consultation of the excellent and more exhaustive treatises on otology which have been published both in this country and abroad. The success achieved in the prosecution of this modest and useful purpose is best shown in the pages of the book itself, in the emphasis which is laid upon the importance of treating all diseases of the ear in their earliest stages, and in the full consideration given to those particular diseases of the ear which come most frequently under the observation of the student and the general practitioner.

Notes on Micro-organisms Pathogenic to Man. By SURGEON-CAPTAIN B. H. S. LEAMANN, I.M.S. New York and Bombay: Longmans, Green & Co.

This is a small volume of 96 pages, cheaply bound and having no illustrations.

It is another addition to the long list of publications on bacteria and bacteriological methods. It has nothing to recommend it, when so many better books on the same subject are available.

Exiled for Lèse Majesté. By **James T. Whittaker.** Cincinnati: Press of Curtis & Jennings. 1898.

This is a very interesting little novel from the pen of Prof. J. T. Whittaker, the author of a well-known text-book on Practice of Medicine. The plot (the exile to and escape from Siberia of a young Russian student, who was punished for a so-called "political" crime) is developed very ingeniously and entertainingly; it is the more interesting, as it contains a great element of probability, for, as the author acknowledges in the few prefatory words, "nearly all the incidents in it are real." Incidentally the little book shows the author's erudition in and remarkable familiarity with the Hellenic history, with the classics, both ancient and modern. as well as with Russian life and history. Of this latter we find particularly interesting the few glimpses into the hard and despotic character of Tzar Nicholas I. It is full of interesting and instructive quotations, and interspersed with beautiful verses and felicitous sayings by the author himself, out of a multitude of which we are tempted to bring forward the following: "A physician does not pretend to still the storm; he is simply a pilot who is satisfied to steer the ship through" (p. 57); or, "time is never so hopelessly lost as that which is spent in bewailing its loss" (p. 70). "The people judge the physician by the results of his treatment; but physicians judge each other by the correctness of diagnosis (p. 126)." The reader is well repaid for reading this novel, which shows keen insight into Russian life.

A Treatise on Diseases of the Ear, together with a brief Sketch of the Anatomy and Physiology of this Organ. By **Albert H. Buck, M.D.**, Clinical Professor of Diseases of the Ear, College of Physicians and Surgeons, Medical Department of Columbia University, New York; Consulting Surgeon, New York Eye and Ear Infirmary and the Presbyterian Hospital. Third revised edition, pp. 573, with index and 147 illustrations. New York: Wm. Wood & Co. 1898.

Dr. Buck's first book, published in 1880, was especially valuable to his colleagues as the record of the personal experience in clinical otology of a careful and experienced observer, and in the present volume, much enlarged and presenting more of the characteristics of a text-book, this distinction has not been lost. Both in the classification of subjects and in the use of distinctive headlines the present edition is much increased in value for purposes of ready reference, and the addition of a chapter of forty-five pages on the pathological condition of the fauces, vault of the pharynx, and nasal cavities, which play an important part in the causation of ear diseases, and the further space devoted to the consideration of meningitis, extradural abscess and abscess of the brain in connection with suppurative middle-ear disease mark the advances which have been rationally made in the extension of the field of otology in these directions during the past eighteen years and help to make this the best clinical text-book on diseases of the ear and their complications as yet published in this country.

The Monument to Charcot, which has been erected in front of the Salpêtrière, was unveiled on Sunday, December 4th, at 10 A.M. M. Leygues, Minister of Public Instruction, presided at the ceremony.

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SOME MINOR CAUSES AND CONDITIONS RELATIVE TO THE SPREAD OF TYPHOID FEVER.

Recognizing the fact that the definite and exciting cause of typhoid fever exists in the excreta of those who are ill with this disease, there are yet many variable conditions and circumstances under which the specific poison of the disease spreads from the sick to the well. The most common medium of transmission of the typhoid germ is unquestionably the water-supply, either public or private, and the natural tendency of water to run down hill, carrying these excreta with it from the houses of the sick into wells, ponds and streams used as water-sources, explains the frequency of this mode of infection. The serious epidemics at Lawrence, Lowell, Newburyport, at Plymouth, Pa., Chicago and Philadelphia were all traceable to this cause and mode of infection. Dr. Ernest Hart rendered a useful service in collecting a very large number of such epidemics and publishing them under the name of "Water-borne Typhoid."

Probably at least three-quarters of the extensive epidemics of typhoid fever have been of this character.

Closely allied to the water epidemics are those which are commonly ascribed to the milk supply, and in these the primary medium of transmission is undoubtedly the polluted water which in some way or other gains access to the milk, either as an adulterant, or in its use for the washing of the receptacles in which the milk is stored, or transmitted from producer to consumer, since no evidence has ever been produced to show that typhoid-fever infection could be transmitted to the milk by means of polluted water which the cows had swallowed.

The foregoing methods of transmission having been eliminated, there yet remain other modes which recent observations have shown to be possible. At Lawrence, Mass., after the introduction of a filter for purifying the entire water-supply of the city, and reducing the death-rate from typhoid fever to less than one-tenth of its former proportions, and eliminating certain cases among persons who were known to have drunk the water of the canals in the city, there still remained unexplained other cases, some of which appeared to be due to the return of persons from certain summer resorts where the sanitary conditions were seriously at fault and where these persons had contracted the disease. From a statement in the last report of the State Board of Health it appears that an inspection of these resorts, picnic grounds, etc., has been made which showed that many of these places afforded conditions unusually favorable for the spread of disease, but in many instances the proprietors had shown themselves willing to comply with suggestions as to much-needed improvements. The number of these places in the neighborhood of cities and large towns has greatly increased since the introduction of electric railways running in every direction.

Another source of infection, which has become manifest in recent years, is the ice-supply. Well-authenticated cases of typhoid fever have, in recent years, been traced to the use of ice from ponds and streams polluted with sewage. The need of protection in this direction has shown itself in the trend of public legislation in the past twenty years, and at least three different laws have been enacted in Massachusetts for the protection of the community against the sale of polluted ice.

It is remarkable that thus far the cities and towns of Massachusetts which have taken action under these statutes have been chiefly those of the western part of the State (North Adams, Holyoke and Worcester), in which the actual degree of pollution has been much less than that of Eastern Massachusetts. The extent of water pollution depends very largely upon density of population, and the greater density is that of the Metropolitan District. There are ponds still in use as sources of ice-supply in Brighton, Arlington, Lynn, Wakefield, Melrose and Woburn upon whose water-sheds the population is from 1,000 to 1,500 per square mile, and into which sewage is constantly running without let or hindrance. The authorities of these places, as well as those of western towns, have power to prohibit the sale of this ice.

Another source of typhoid infection is to be found in those shell fish which are eaten raw. Many different kinds of shell-fish are eaten raw in England and upon the continent of Europe, but in America the oyster is almost the only kind which is thus used.

The report of Dr. Bulstrode to the Local Government Board of England in 1895 showed conclusively that epidemics of typhoid had been due to the use of oysters from places upon the coast of England which were polluted by sewage. Similar epidemics have also been reported from Connecticut and from Amherst College, due to the same causes. It is not unreasonable, therefore, to suppose that some of the unexplained cases which occur in our cities in the autumn may be due to the eating of raw oysters gathered from sewage-polluted waters. The season of greatest typhoid prevalence coincides with the beginning of the oyster season. The actual intensity of sewage-pollution in the Providence River, noted for its oyster-beds, is far greater than that of any of the sea-coast oyster-beds mentioned in the report of Dr. Bulstrode. The Providence River and Narragansett Bay receive the sewage of about 300,000 inhabitants, living in Providence, Pawtucket, Worcester and other places contributing to the water-shed of the bay, and this sewage-polluted stream floats to and fro over the oyster-beds at each turn of the tide.

THE USE OF MORPHIA IN HEART DISEASE.

Opium still remains one of those drugs whose varied uses must be learned empirically from clinical observation rather than from any theoretical consideration of its *modus operandi*, or from any study of its physiological and toxicological effects in healthy men and animals. Its wide range of action, according to the dose and form of administration, makes it applicable to certain cardiac affections, especially such as are attended with dyspnea and pain. In many cases of angina pectoris, despite the undeniable advantages to be derived from nitro-glycerine and nitrite of amyl, it must be the main reliance. By the consent of the profession, morphine is the preparation most generally chosen, and the popular opinion that it is both a respiratory and cardiac stimulant (helping the heart perhaps by a general vaso-dilator action, besides allaying morbid irritation and pain) is not without foundation.

Is morphine equally beneficial in aortic and mitral disease?

Some (as Dujardin-Beaumetz) think that it is of especial benefit in aortic regurgitant disease. Here it is, he says, a sovereign remedy — as much so as digitalis in mitral insufficiency — opposing the two great symptoms which result from lesions of the sigmoid valves — the cerebral anemia and the dyspnea ; it also combats the neuralgias of the cardiac and pulmonary plexuses.[1] T. Clifford Allbutt finds morphine equally serviceable in mitral regurgitation, one hypodermic injection being given in the evening. Bartholow also speaks favorably of morphine injections in mitral disease. Germain Sée extols these injections in cardiac dyspnea, but calls attention to the evils attendant in the use of morphine, such as disturbance of the appetite, digestion and nutrition, formation of the morphine habit, diminution of the urine, etc. He has seen morphine bring on the Cheyne-Stokes respiration when injudiciously administered.[2]

Osler thinks that the calming influence of opium in all conditions of cardiac insufficiency is not sufficiently recognized.

Tyson takes the ground that persistent cardiac dyspnea, dependent so often upon passive congestions and pleural effusions, not otherwise relieved, demands an opiate of which morphine is the best. In milder conditions Hoffmann's anodyne may be tried.

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[1] Diseases of the Heart, American Edition, p. 146.

[2] G. Sée: Maladies du Cœur, p. 505.

The American translation of Strümpell speaks of morphine in cardiac disease thus: "The dyspnea of heart disease is usually the most distressing symptom of all. Here, too, our chief task is, of course, to restore the compensation; but failing this, we must try to relieve the dyspnea symptomatically. Morphine is most efficient in this respect. In general, morphine is, next to digitalis, the most indispensable remedy in the treatment of severe heart disease. It is usually well borne, and procures great relief, especially if given subcutaneously. If we have to do with the last stage of the disease we need not spare large doses."

Dr. F. S. Toogood in the *London Lancet*, November 26, 1898, regards the notion that morphine is dangerous in heart disease attended with renal insufficiency as a prevalent one; he disputes its justness, and commends the use of morphine in desperate cases where other remedies have failed. Although doubting the prevalence of such a view among our best practitioners here, the report of experiences which were illuminating to him may not be amiss for others, as we are inclined to agree with Osler, that the "calming influence of opium in all conditions of cardiac insufficiency is not sufficiently recognized."

Toogood has employed morphine hypodermically in those distressing cases (mainly of mitral incompetence) where the exhibition of digitalis, strophanthus and convallaria excites vomiting, where the stomach retains practically nothing, where the heart is extremely irritable and irregular in rhythm and the pulse in volume, where often an ever-present dyspnea renders the condition of the patient intolerable from exhaustion and want of sleep, and where there may be also edema from failing circulation, and a scanty amount of albuminous urine. In these cases the subcutaneous injections have given most gratifying results. The pulse has become steady, strong and regular, the edema has disappeared, the dyspnea has been relieved, and the urine, instead of being scanty, high colored, of high specific gravity and containing albumin, has become normal in amount and character, and the albumin has become much less or has entirely disappeared. Dr. Toogood reports five cases, two of them typical cases of angina pectoris, where life was apparently prolonged and a fair measure of comfort maintained by morphine injections; no bad effects from the remedy were noted. One of the other patients had mitral regurgitation with edema and dyspnea, urine scanty, loaded with lithates and somewhat albuminous, pulse small, rapid and irregular. Under the influence of morphine injections, he was able to sleep quietly and comfortably; the pulse came down to 80 beats per minute; the urine increased to 70 ounces; the edema disappeared, and the albumin cleared up. His general health so far improved that he was able to resume most of his former occupations.

Another patient had both aortic and mitral regurgitant disease, and all the ordinary cardiac stimulants having failed, resort was had to morphine hypodermically. A fresh lease of life was given to this patient. In another case diagnosticated as obstructive mitral disease, the pulse, first tumultuous and rapid, became almost imperceptible, and the patient was in a state of collapse. The urinary secretion was nearly suppressed. Under the influence of a hypodermic injection of one-fourth of a grain of morphine every twelve hours the patient began to improve, was able to sleep; the vomiting, before persistent, ceased; the urine became normal in amount, and the tumultuous action of the heart subsided. This patient ultimately recovered so as to be able to resume work.

Dr. Toogood closes with the remark "that morphine in large doses is a cardio-vascular depressant is well known, but its soothing effects upon irritable conditions of other organs are so well recognized that I am inclined to think that the undoubtedly beneficial results in cardiac disease are due to its action upon the nervous apparatus of the cardio-vascular system, both central and local, bringing rest to an overstrained organ, and allowing it the chance of developing its recuperative power."

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MEDICAL NOTES.

Professor Röntgen Leaves Würzburg for Leipsic. — Professor Röntgen has resigned his appointment at the University of Würzburg, having accepted the post of Professor of Physics at Leipsic.

Typhoid Fever at Honolulu. — Typhoid fever prevails extensively and unnecessarily among the United States troops at Honolulu, dispatches dated November 23d stating that there were over three hundred cases there at that time.

The O'Dwyer Scholarship. — The trustees of Columbia University have established in the College of Physicians and Surgeons a scholarship to be known as the O'Dwyer Scholarship, in recognition of Dr. Joseph O'Dwyer's professional labors.

Dr. Wood Recommended for a Major-Generalship. — Brigadier-General Leonard Wood, M.D., a graduate of the Harvard Medical School, and now Military Governor of Santiago Province, has been recommended to Congress by President McKinley for promotion to a major-generalship in the regular army.

Fevers in Children. — Dr. S. S. Adams, of Washington, lectured, by invitation of the faculty, before the seniors of the University Bellevue Hospital Medical College, December 20th, at the hour of the usual pediatric lecture. Subject: "Fevers in Children, their significance, general diagnostic value and antipyretic treatment."

Small-Pox and Yellow Fever. — Small-pox is still prevalent at Mobile, Ala., where sixteen cases and three deaths are reported from November 10th to December 6th. Eight cases and one death are reported at Pueblo, Col., and a few scattered cases in Iowa, and Norfolk, Va. One death from yellow fever is reported at Havana, and seven at Vera Cruz, Mexico.

BOSTON AND NEW ENGLAND.

Large Bequests to Hospitals. — By the will of the late John L. Gardner, of Boston, $50,000 is bequeathed to the Boston Lying-In Hospital and $50,000 to the Massachusetts General Hospital, on the death of his widow.

Two Centenarians. — The celebration of the one hundred and third anniversary of a birth in Concord, N. H., and of the one hundred and second anniversary of a birth in Portsmouth, N. H., are reported in the daily press with apparent authenticity.

An Unregistered Physician Sentenced. — Ulderic St. Pierre was fined $500 and sentenced to jail for three months in the United States District Court, at Fall River, December 15, on the charge of practising medicine without being a registered physician.

NEW YORK.

Death of Dr. George W. Baker. — Dr. George W. Baker, a prominent practitioner of Brooklyn, died of pneumonia at his residence in that borough on December 4th, at the age of sixty-one.

Public Baths Nearly Self-Supporting. — In the fifty-fifth annual report of the New York Association for Improving the Condition of the Poor, which has just been issued, it is stated that the number of bathers during the year at the People's Baths, in Centre Street Market Place, was 85,128 men, 15,048 women, and 15,509 children. These baths were started as an experiment, without belief that they would prove self-supporting, but good management has made them nearly so.

A State Sanitarium for Consumptives Recommended. — A committee of the State Senate appointed at the last session of the Legislature to consider the advisability of establishing a State home for consumptives held a meeting at the City Hall on December 13th, when several experts in pulmonary disease appeared before the committee and urged the recommendation of such a sanitarium in the Adirondacks.

A Priest opens a Sanitarium. — A Roman Catholic priest has purchased a site in Jersey City for a sanitarium, which he proposes to construct as a rival of the Keely Cure establishments. He has not made public his plan of treatment, but he states that after years of close study of the various remedies for inebriety he has devised a method of physical treatment which has proved most efficacious in removing the desire for drink.

Typhoid Fever and the Paterson Water-Supply. — An outbreak of typhoid fever of considerable proportions has lately developed in Paterson, N. J., and the Board of Health, having failed to find any other source for the disease, has come to the conclusion that it is due to a contamination of the water-supply and ordered an investigation of the condition of the latter. One would think that in a flourishing city like Paterson the health authorities would keep up such a constant supervision of the water-supply that any contamination would be detected before it had had time to produce such serious results.

Death of Dr. Edwards Hall. — Dr. Edwards Hall, formerly one of the most prominent physicians of New York, died at his residence in that city on December 10th. He was born in Washington County, N. Y., October 16, 1818, and was graduated from Hamilton College in 1840. He received the degree of M.D. from the Albany Medical College in 1844, and after coming to New York became one of the founders of the Academy of Medicine.

Death of Dr. Nathan S. King. — Dr. Nathan S. King, of Yonkers, N. Y., died on December 11th, of pneumonia. He was born in Fishkill, in 1824, and was graduated from Williams College in 1849, and from the College of Physicians and Surgeons, New York, in 1852.

Reinstatement in the Harlem Hospital. — On December 15th, Dr. Thomas H. Manley was reinstated as Visiting Surgeon in the Harlem Hospital. Three years ago twenty-eight physicians were dropped from hospital service in New York, no charges of any kind being preferred against them. This was an unprecedented proceeding in the history of the Department of Charities, and was supposed at the time by many to be the result of political and medical college intrigues.

Annual Dinner of the Medical Department of Columbia. — The annual dinner of the Alumni of the Medical Department of Columbia University was held on December 8th. Among the speakers were Drs. L. H. Sayre, Charles McBurney, J. G. Curtis, F. P. Kinnicutt, President Low and the Rev. George B. Van De Water, Chaplain of the University. In the course of his address, Dr. Low paid eloquent tributes to the memory of Dr. John Blair Gibbes, who fell in battle, and Dr. Lindheim, who died of disease contracted in the discharge of duty in the army.

Decennial of the Babies' Hospital. — The decennial anniversary of the Babies' Hospital, founded by the Post-Graduate Medical College, was celebrated on December 8th. Dr. L. Emmett Holt read the report of the Medical Board, and in his annual report Dr. T. E. Satterthwaite, President of the Board of Directors, stated that the Cribside Committee of young ladies had raised $5,000 for the building of a nurses' home at Oceanic, N. J.

The New York Orthopedic Dispensary and Hospital. — The annual meeting of the Board of Trustees of the New York Orthopedic Dispensary and Hospital was held on December 8th, and a large number of visitors inspected the wards and machine shop on the occasion. The report of Dr. Newton M. Shaffer, Chief of the Medical Staff, showed that during the year 110 patients were treated in the hospital department and 3,420 in the dispensary.

Death of Dr. Salmon P. Cohen. — Dr. Salmon P. Cohen died of pneumonia at his residence in New

York on December 6th. He was born in Germany, in 1845, and came to America in 1860. He afterwards returned to Germany, and was graduated in medicine at Leipsic in 1877. He had practised successfully in New York for twenty years.

Death of Dr. T. H. Huzza. — Dr. T. H. Huzza, of Atlanta, Ga., died on December 8th, at the New York Hospital, after an operation for appendicitis. The appendicitis was of traumatic origin, and was due to an injury received a few days previously on a railway train while on his way to New York.

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THERAPEUTIC NOTES.

Uterine Cancer.[1]

℞	Acidi salicyl.	gr. viii
	Sod. salicyl.	ʒ iii
	Tr. eucalypti	ʒ vi
	Aq. destil.	ʒ vi

M. Et. sig. Three tablespoonfuls in a quart of water for injection every three or four hours.

Pertussis: [2]

℞	Tinct. bellad.	ʒ ii
	Phenacetine	ʒ i
	Brandy	ʒ iii
	Fl. extract chestnut leaves	ʒ xii

M. Sig. Ten drops every two to six hours for a child one year old; a child ten years old may be given as much as a teaspoonful.

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Correspondence.

"THE MEDICAL DEPARTMENT OF THE ARMY AND THE SPANISH WAR."

Washington, D. C., December 12, 1898.

Mr. Editor: — Your editorial of December 8th on "The Medical Department of the Army and the Spanish War" is so unjust to the officer at the head of that department that it cannot be allowed to pass unnoticed.

In the first place, it is very unfair to simply assume that Surgeon-General Sternberg did not recognize the inadequacy of the medical department and do what he could to have it increased. No one who knows this officer personally would say that he was not "forceful or earnest" or unlikely to push a matter he was interested in, though it is manifestly impossible that the details should be known. "To appeal to the profession at large throughout the country for its support and influence," as suggested, in bringing any matter to the attention of his military superiors is a measure entirely out of keeping with military methods, and could not for a moment be thought of.

Reference is made to the first and fourth paragraphs on page 4 of the last report of the Surgeon-General of the Navy. The first refers to examination of applicants for contract surgeons in advance of authority for their employment. Of navy conditions nothing is known, but it was certainly impracticable to take any steps in the army looking to the employment of contract surgeons before authority to employ them and money for the necessary expenses to be incurred had been given. Contract surgeons were appointed only upon the highest professional endorsement. It cannot be said that the services of these gentlemen were not generally satisfactory.

The second allusion to report referred to the prompt fitting out of the United States navy hospital ship *Solace*. She is certainly a great credit to the medical department of the navy. It is also true, however, that very early in April, it is understood, the fitting out of an army hospital ship, in case of war, was advocated by General Sternberg. That its fitting out was delayed was no fault of his, and the ship *Relief*, with her sister ship *Missouri*, has rendered most excellent service.

General Sternberg is said to have "reached the surgeon-generalcy through political methods"; "that his life training has been that of a laboratory man," and, therefore, he has been found wanting. The first is pure assumption, of which there is not a particle of probability to one who knows this officer. His appointment in 1893 by President Cleveland was undoubtedly based upon his long and distinguished career as a medical officer and his conspicuous services in the investigation into the causes of yellow fever (1887–1889) and in connection with the successful quarantine against cholera in 1892. As to the second, what are the facts? General Sternberg entered the medical service in June, 1861, rendered most efficient service during the war of 1861–5, in the field, in battle, in charge of general hospitals, in temporary charge of medical director's work. After the war he served at military posts, in cholera epidemics and on Indian campaigns. It was not until 1877 that he took up the practical study of bacteriology, and this, be it remembered, to fit himself the better for the important duties devolving upon him as a member of the Havana Yellow Fever Commission of the National Board of Health.

It is impossible to take up all the statements in your editorial in detail, but I note in passing the remark as to the advantage in giving large discretion to officers at a distance as necessary in war times. This advantage was not only recognized by the surgeon-general, but acted on throughout the department. Officers were given the very widest latitude and discretion wherever it was of advantage to the public service. The difficulty was that many were disinclined to take it and to assume responsibility. The difficulties that have had to be met by the surgeon-general and the medical department would be better understood if it is borne in mind that the United States is not a military nation. The very sentiment of the people is against a standing army and preparation for war. The whole appropriation for the medical department in peace times was but $130,000 yearly — sufficient for the small army then existing, which was always ready for emergencies, but allowing nothing to provide in advance for an army expanded ten times, as it was in a few weeks for the Spanish War. Not only so, but few believed up to the last moment that there would be any war, nor was it until war was actually declared, late in April, that authority was given to take any steps involving the expenditure of money or put the medical department on a war footing. All that was possible to be done in advance was done. When the suddenness with which an army of over two hundred and fifty thousand was extemporized is considered, how supplies (many of them of special pattern for military use, such as field litters, pouches, etc.) had to be manufactured and distributed, a large force of medical men and nurses obtained, general hospitals organized, hospital ships and trains fitted out, sanitary rules laid down, the officer who planned and carried out these varied operations must be granted by any candid man to have shown energy and executive ability of a high order.

It is hoped that this brief statement, which is written without Surgeon-General Sternberg's knowledge, but by one who knows what he writes, will be, in justice to him, admitted to your columns.

[We are glad to publish the enclosed letter from an official occupying an important position in the medical service of the United States, at the earliest possible moment after its receipt. The editorial in question was written after a careful consideration of the surgeon-general's own report. A reconsideration of the editorial in the light of the letter tends to confirm the positions therein taken. The second paragraph alone of our correspondent's letter goes far towards this result. We desired to accord General Sternberg a full share of all possible credit. We were not unmindful of the difficulties encountered, whether in or out of Congress. Our correspondent has apparently missed the spirit of our article, which we still venture to hope may have some influence, inducing those in charge of the surgeon-general's office to carefully consider reorganization. — Ed.]

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[1] Le Progrés Médical, No 40, 1898.

[2] Lancaster. The Indian Lancet, September 1, 1898.

[Special Correspondence.]

SURGERY IN PARIS.

(Concluded from No. 24, p. 611.)

In my wanderings in Paris I saw surgical work in ten hospitals. Everywhere I met courteous welcome, and therefore, in view of the fact that I am criticising surgical methods, I prefer not to name either hospitals or surgeons.

The first surgery which I saw was in an amphitheatre with floor of stone which was black with dirt and the surrounding wordwork was covered thickly with dust. The surgeon and his assistants cleansed their hands but not thoroughly. Instruments were in dry trays covered with gauze. Ligatures were catgut taken from coils which lay upon cloths supposed to have been aseptic but were exposed to the dust of the room and germs from many visitors who were admitted in street dress. Toilette of patient once would have been thought excellent, but, notwithstanding the scrubbing was followed by douching the skin with strong alcohol, it was perfunctory. I prefer Kocher's method of twofold preparation of the patient, once before the patient is brought to the table, to which he comes in aseptic bandages, and again after being placed upon the table, the second scrubbing and douching being continued until the knife enters the tissues.

In the operation in question: At its close the wound was wiped clean but was not washed in aseptic water of any sort. The after dressing was good, many dense sheets of charred cotton wool being last applied. The operation was not especially cleanly. Tables and bowls were of glass and asepticism was fair but far from perfection. Chloroform was the anesthetic.

At a *second* hospital, once shockingly dirty, I found a new pavilion including a most excellent and brightly lighted operating-room in which I had the satisfaction of seeing something like asepsis. Surgeon and his two or three assistants were dressed in special suits, including white linen trousers. The toilette of their hands was sufficiently thorough. The glass tables and basins were clean and wholesome. Gauze sponges and cloths were taken from the canister by the surgeon, the gauzes were seized and applied by means of instruments, the receptacle being immediately closed. Toilette of patient was not sufficiently prolonged. Trays were purified by pouring alcohol into them and then setting fire to the fluid. Instruments were all boiled and laid in the tray upon aseptic cloth, but — and this is a serious point — instead of being kept in aseptic fluid they remained exposed to the air and were surrounded by many visitors, who were admitted without the necessary baked linen coat. The silk ligatures were wound upon dainty spools of glass, but these, instead of being kept immersed, lay among the exposed instruments, the ligatures were cut from them by the bloody fingers of the assistant and therefore, when used, were not clean. During the operation I did not see one instrument cleansed nor thrown into fluid. They were laid down and taken up just as they were until the operation was completed. Results here of course must be less perfect than they would be if greater care were used. The wound was wiped clean but not washed. The room was nice and sweet and clean, but still these departures from my standard were disappointing. Ether was the anesthetic. There was a card requesting silence, etc.

Third Hospital. — The old place has now one completed pavilion and others are in process of construction. The new wards are clean and modern. I saw many good results of gynecological operations in severe cases.

The operating-room is of the typical modern sort; tables and basins of glass. The surgeon is extremely particular as to asepsis. No visitor is admitted without the freshly baked linen blouse. Instruments are kept submerged. The surgeon does a dry operation, uses catgut, ties three knots after the surgical knot. Toilettes excellent. Operation cleanly as were all appurtenances. This surgeon removes everything but underclothing and dresses in a special spotless suit. During the operation constantly watches the clock to time his work; is excitable and irritable; uses the card asking silence, etc. Chloroform the anesthetic.

Fourth Hospital. — Surgeon operates in an unused ward at the top of the building — not a proper room for operations and it was not clean. Visitors admitted without precautions. Chloroform is given. Instead of gauze ordinary sponges are used. Surgeon floods his wounds with hot salt water; uses catgut externally, silk internally. During the operation he washes his hands in the fluid in which instruments are submerged. The entire procedure lacked care. Assistants abounded.

Same Hospital. — Surgeon operates in a dirty amphitheatre; uses dry asepsis. Instruments exposed. Ether the anesthetic. Visitors admitted in street apparel.

Fifth Hospital. — Here I found airy, bright, clean pavilion wards, finished in gloss paint. The operating-room is a charming, exquisitely clean apartment in an isolated pavilion.

Instruments in a dry, gauze-lined tray. Dry asepsis. Everything was nicely done, the surgeon being a clever and very neat operator; has very few assistants and does his work quickly, is calm and speechless during the operation, which is cleanly and nearly bloodless; has card requesting silence. Visitors admitted without precautions and instruments and ligatures exposed to the air.

Sixth Hospital. — The operating-room is in an old wooden building modernized as to pavement and fittings. Great aseptic care is used, but I observed that the canister of sponges, as all gauze sops are called in Paris, stood uncovered near an open window throughout the operations and the wind was high. Again, I noticed that the door of communication with the corridor was left open during long periods of time. This corridor was on the ground floor, all its windows and doors were open and it contained many individuals who were uncleanly.

The toilette of the patient was the best and most thorough which I saw in Paris and was continued up to the moment of introduction of the knife, the part being flooded and scrubbed with ether at the last moment. But the pubes were only half shaved, the operation being *per vaginam.* The wound was frequently flushed with sublimate. Catgut was the only ligature used. The internal lips of wound in a laparotomy were closed by the only continued suture I had seen or did see in Paris. It seems to me better and sounder than the interrupted. Constant and excellent cleansing of the hands was the rule. Visitors were admitted in street dress. During the operation the surgeon talked steadily with assistants and visitors, was courteous to his aids and never in the least excitable. He and his procedures leave a good and nearly satisfactory impression. Chloroform was the anesthetic. Room fairly clean. *Another surgeon* has a fine, new operating-room, typically modern but not clean. Instruments upon gauze in a dry tray. Those in use thrown pell-mell among other clean ones, as were also bloody gauze sponges, which were used over and over again. Canisters of gauze left open until emptied. Wound not properly enclosed by gauze cloths; it was not touched by any fluid. Ligatures, catgut and silk. (On only one occasion have I seen torsion used in Paris.) The skin about the wound was not nicely cleansed before dressing. Visitors admitted in street dress. Surgeon not fitly attired; his shirt sleeves, rolled back, came into close contact with the wound. Chloroform used. I made ward visits with *another* genial and courteous surgeon, whose diagnostic ability was striking. Care of patients indifferent. Wards crowded and not clean. It was here that I saw the compound fracture to which I have already alluded and which was in a bad condition. This surgeon, whose work was faulty, criticized the surgery of a *confrère*, whose procedures are modern and careful. His operating-room is in a new isolated building and was satisfactory. Ordinary as well as gauze sponges were used. Instruments in a gauze-covered tray. Ligatures lay among bloody instruments. The operation was a hysterectomy and the removal of a large cystic tumor. Much blood was lost and the whole procedure was slovenly. *Débris* and "gurry" from the wound were thrown upon the floor. During the operation mucus oozed from the uterus into the abdominal cavity, which was not afterward flushed. After the operation the nates, covered with involuntary discharges, and the vulva, were left soiled and unwashed. Washing of the surface of abdomen after closure of the wound was very imperfect. The operation was roughly done and asepsis was negligent — a great contrast to the cleanliness of other surgeons. But no surgeon in Paris equals Kocher in thoroughness of care and asepsis. The surgeon to whose work I am alluding claims a low death-rate. I saw many of his patients after operation. They averaged well and fever was never high. The anesthetic was chloroform.

Seventh Hospital. — The surgeon had a pavilion operating-room which was bright and clean and showed excellent asepsis. The operator was neat, quick and very cleanly. His operations were nearly bloodless. But I observed that he wound an ordinary sponge about the drainage-tube left in the wound after an operation for salpingitis. Instruments were in dry trays; bowls purified by burning alcohol. A woman shaved the pubes of the patients, all of whom were women. There are women attendants in all the surgical clinics of Paris. This surgeon had but two male assistants and the work went better than with other surgeons who have six helpers. Ether was the anesthetic. Visitors admitted in street dress. At this hospital the surgeon-in-chief is antiquated and his methods are not up to date.

Ricord Hospital. — At this institution I visited the clinic of Gueyrat, who showed me much courtesy. His clinic was devoted to venereal out-patients all of whom, on this occasion, were men. His examinations were quick and decisive. His diagnosis was lucid. Asepsis was good. Each patient came into the room wearing his hat, which he did not remove, and having exposed to view the member to be examined. The effect was comical but the arrangement facilitated things. Remedies and advice were rapidly given by drawing upon a series of printed prescriptions followed upon the same sheet by a regimen and detailed counsel. The prescriptions were chosen from a row of boxes in accordance with the needs of the patient under examination and were signed by the physician. This saved time, for Gueyrat simply referred each patient to the printed prescriptions and then dismissed him. It was a very instructive clinic, for nearly every variety of venereal disease was presented. On the other hand, there was a pathetic element, which may be illustrated by the case of one patient to whom Gueyrat abruptly announced that he had syphilis, that he would not be cured for five years and that, for obvious reasons, he must at once tell his wife. The poor devil's face was a study. "But what can I say to her?" "Say you smoked a bad pipe. Say that you wrestled with one of your chums and that he made you ill. It isn't my affair. Say what you like. But you must tell your wife." This was kindly but decidedly said. After I had seen *eighty to one hundred* patients I asked the assistant how often such a large number of men applied for treatment. "Every day" was the reply, "and there are other similar services in this hospital." It must be remembered too that each new clinic was attended by many new patients. I have never largely followed venereal clinics and my reflection that this astounding condition of things, which I never before had seen in such huge proportions, could not be seen out of Paris, might perhaps have been an error. The St. Louis Hospital treats syphilitic skin affections and there also patients abound. The course of lectures upon syphilis at the St. Louis is excellent.

At the *Necker Hospital* I attended the service of Guyon, who is a celebrity in the treatment of diseases of the urinary passages. In his absence, Alboro, his assistant, held the clinic. The audience was large, being composed mostly of visitors, who sat in rows. Alboro is a young and handsome *Cuban.* This discovery made him the more interesting to me. He spoke fluent French with an accent. In explanation and demonstration he was very clear and as an operator in litholopaxy and the division of strictures, etc., he was supple, graceful and remarkably quick. Patients abounded. Asepsis was only fairly good.

While at the *Charité* I followed Potain during a ward visit. He still continues his gentle, precise methods of diagnosis. As a lecturer in the amphitheatre it is not worth while to try to hear him, even though one easily understands French, for his voice is so feeble that on the front benches he cannot be heard in a room on the back seats on which I used to hear him with comparative ease.

At one hospital the assistant who gives the anesthetic has chloroformed two thousand patients with only one death, which, he said, occurred at the beginning of his service, thereby indicating that the death was partially due to his lack of experience. This gentleman keeps for each patient chloroformed a card upon which he notes the date of operation, the name of surgeon who operates, the diagnosis, name of chloroform assistant, profession, age and sex of patient, condition of heart, of pulse, lungs and respiration before anesthesia begins, the hour and minute of application of the chloroform, quantity used, whether pure or mixed, condition of muscular relaxation, of pulse and respiration after sleep begins, direction of ocular axes before and after anesthesia and finally the palpebral reflex. These cards are filed and later the notes are classified.

A surgeon showed me the photograph of a singular tumor which he had recently removed. The pedicle of the growth was attached to the uterus, extended outward *per vaginam* and there expanded into a cauliflower enlargement, the size being that of the closed fist.

Paris spends 40,000,000 francs upon her hospitals. Only three or four are supported by private subscription. There is great liberality in supplies, but one surgeon surprised me by saying that surgical utensils are too luxurious and costly. They are simply of the best quality and he is behind the times.

Between Parisian surgeons and their assistants there exists a pleasant *bonhomie* and an agreeable familiarity of which the young men never take advantage. The desire of the surgeon to make his assistants familiar with his reasons for all that he does is very evident.

Here ends my experience, which seems sufficiently extensive to enable me to say that, while so far as operation goes, surgery in Paris is most praiseworthy, there is, in many hospitals, large room for improvement in aseptic methods and an evident lack of care in details. This is merely my opinion, but is one with which I think that all who believe in strictness of procedure will agree.

Yours truly,
H. O.

HOLOCAIN IN INFECTED CORNEAL ULCER.

Boston, December 20, 1898.

Mr. Editor: — Prior to the publication of a short paper on the anesthetic and therapeutic uses of the new drug holocain, I desire to call the attention of the profession to certain experiments I have been making and results I have obtained in a hitherto untried field.

They are based on the bactericidal properties of this agent, so carefully investigated by Heinz and Schlösser. Reasoning therefrom, it seemed that it might prove beneficial in cases of infected corneal ulcer. For some months past I have used it in this class of cases, thus far with excellent results.

Dr. Standish, of this city, and Dr. R. H. Derby, of New York, have kindly sent me the result of their experience in this direction, which thus far goes to confirm my own. I write at present simply to urge others to aid in ascertaining whether the favorable results thus far obtained are coincidences or consequences.

Very truly yours, Hasket Derby, M.D.

METEOROLOGICAL RECORD

For the week ending December 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S. . . 4	30.09	40	42	38	68	94	81	E.	E.	20	34	O.	R.	.06
M . . . 5	29.35	42	46	37	83	62	72	S.W.	W.	12	24	O.	O.	.39
T. . . . 6	29.84	38	41	35	62	67	64	W.	S.W.	20	10	O.	O.	
W. . . 7	29 92	36	41	32	72	52	62	S.W.	S.W.	12	11	C.	C.	
T. . . . 8	30.12	30	34	26	63	42	52	W.	W.	10	20	C.	C	
F. . . . 9	30.20	23	28	18	59	54	56	N.W.	W.	13	8	C.	C.	
S. . . 10	29.76	28	33	22	55	57	56	W.	W.	15	18	O.	O.	
☞	29.90		38	31			63							45

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 10, 1898.

CITIES	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1173	311	7.28	18.96	1.28	1.20	2.56
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	436	114	7.13	15.54	.46	1.61	4.60
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	201	53	3.43	16.66	.49	1.47	.98
Baltimore . .	506,389	182	58	7.15	22.55	.55	.55	6.05
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	97	28	13.39	11.33	2.06	7.21	2.06
Washington .	277,000	119	24	15.30	11.05	—	7.65	6.80
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence . .	150,000	64	16	7.80	17.16	4.68	—	1.56
Nashville . .	87,754	28	6	7.14	3.57	—	—	3.57
Charleston . .	65,165	19	6	5.26	—	—	5.26	—
Worcester . .	108,240	24	6	16.66	12.50	4.16	4.16	8.32
Fall River . .	95,919	—	—	—	—	—	—	—
Cambridge . .	89,724	30	10	6.66	13.33	3.33	—	3.33
Lowell . . .	88,641	30	10	3.33	10.00	—	3.33	—
Lynn	66,703	—	—	—	—	—	—	—
New Bedford .	66,340	20	9	15.00	5.00	—	—	10.00
Somerville . .	61,101	—	—	—	—	—	—	—
Lawrence . .	57,263	25	10	12.00	12.00	—	4.00	40.00
Springfield .	56,501	9	1	—	9.09	—	—	—
Holyoke . . .	43,424	12	3	25.00	8.33	—	8.33	—
Brockton . .	37,278	11	2	—	9.09	—	—	—
Salem	36,883	8	0	—	12 50	—	—	—
Malden . . .	34,613	12	4	8.33	16 66	—	—	—
Chelsea . . .	33,168	7	2	—	—	—	—	—
Haverhill . .	32,022	7	2	14.28	28.56	—	—	14.28
Gloucester . .	30,589	6	2	—	—	—	—	—
Newton . . .	29,716	10	0	10.00	10.00	—	—	10.00
Fitchburg . .	29,438	11	2	9.09	9.09	—	9.09	—
Taunton . . .	28,167	11	1	—	—	—	—	—
Everett . . .	25,338	3	1	33.33	—	—	—	33.33
Quincy . . .	23,549	5	1	—	—	—	—	—
Pittsfield . .	22,643		—	—	—	—	—	—
Waltham . .	21,812	10	2	—	20.00	—	—	—
North Adams .	20,971	6	2	16.66	16.66	—	—	16.66
Chicopee . .	17,842	5	1	—	—	—	—	—
Medford . . .	16,541	5	1	—	60.00	—	—	—
Newburyport .	14,915	4	1	—	25.00	—	—	—
Melrose . . .	14,032	4	3	—	—	—	—	—

Deaths reported 2,610; under five years of age 694; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 206, acute lung diseases 448, consumption 258, diphtheria and croup 100, typhoid fever 48, diarrheal diseases 27, whooping-cough 15, scarlet fever 8, cerebro-spinal meningitis 5, measles 3.

From whooping-cough New York 7, Philadelphia and Pittsburg 2 each, Boston, Washington and Holyoke 1 each. From scarlet fever New York 6, New Bedford and Lawrence 1 each. From cerebro-spinal meningitis New York 2, Nashville, Holyoke and Malden 1 each. From measles New York 3.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending December 3d, the death-rate was 19.1. Deaths reported 4,108; acute diseases of the respiratory organs (London) 310, diphtheria 108, measles 87, whooping-cough 71, fever 71, diarrhea 49, scarlet fever 40.

The death-rates ranged from 12.4 in Burnley to 27.8 in Wolverhampton; Birmingham 21.3, Bradford 18.7, Croydon 17.2, Gateshead 17.1, Hull 16.1, Leeds 17.4, Liverpool 21.3, London 18.2, Manchester 21.7, Newcastle-on-Tyne 24.8, Nottingham 18.1, Portsmouth 19.3, Salford 24.2, Sheffield 18.1, Swansea 20.4, West Ham 21.1.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOURTEEN DAYS ENDING DECEMBER 15, 1898.

BAILHACHE, PRESTON H., surgeon. To proceed to Philadelphia, Pa., to inspect the barge "Protector." December 2, 1898.

BANKS, C. E., surgeon. To proceed to the ports of Boothbay Harbor, Portland, Me., Fall River and Boston, Mass., as inspector. December 2, 1898.

GLENNAN, A. H., surgeon. To proceed to San Juan, Porto Rico, for special temporary duty as quarantine officer. December 9, 1898.

STONER, J. B., passed assistant surgeon. Detailed to inspect stations of the third class. December 5, 1898.

NYDEGGER, J. A., passed assistant surgeon. To proceed to New Orleans, La., for duty and assignment to quarters. December 15, 1898.

CLARK, TALIAFERO, assistant surgeon. To proceed to South Atlantic Quarantine Station and assume temporary command. December 15, 1898.

LAVINDER, C. H., assistant surgeon. To proceed to Cape Charles Quarantine as inspector of unserviceable property, and then to proceed to Washington, D. C., for further orders. December 7, 1898. To proceed to Philadelphia, Pa., for temporary duty. December 10, 1898.

MCMULLEN, JOHN, assistant surgeon. To report at Bureau for special temporary duty. December 10, 1898.

FOSTER, M. H., assistant surgeon. Granted thirty days' extension of leave of absence on account of sickness. November 27, 1898.

Board convened to meet at Washington, D. C., at 11 A. M., December 14, 1898, for the physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon CHARLES E. BANKS, Chairman; Passed Assistant Surgeon G. T. VAUGHAN, Passed Assistant Surgeon E. K. SPRAGUE, Recorder.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — The Section for Obstetrics and Diseases of Women will meet at 19 Boylston Place, Wednesday, December 28, 1898, at 8 P. M.

Papers: Dr. R. A. Kingman, "Report of a Second Case of Double Ovariotomy during Pregnancy; Hydatiform Mole."

Dr. W. M. Conant, "Extra-uterine Pregnancy with Report of Cases."

At 9 o'clock, election of chairman.

F. W. JOHNSON, M.D., *Chairman.*
C. H. HARE, M.D., *Secretary.*

THE ASSOCIATION OF AMERICAN ANATOMISTS. — The eleventh session of this Association, meeting in conjunction with the affiliated societies, will be held in the rooms of the Department of Anatomy, College of Physicians and Surgeons (Medical Department, Columbia University), New York City, No. 437 West Fifty-ninth Street, Wednesday to Friday, December 28 to 30, 1898. A very interesting programme is published, subject to modification by the Association or the Executive Committee after assembling.

The President of the Association is Dr. B. G. Wilder, of Ithaca, N. Y., and the Secretary Dr. D. S. Lamb, of Washington, D. C.

THE AMERICAN PHYSIOLOGICAL SOCIETY will hold its annual meeting at New York City, December 28th, 29th and 30th, the first day at the College of Physicians, the second (in conjunction with the American Psychological Association) at Schermerhorn Hall, Columbia University, and the third day at the University and Bellevue Hospital Medical College.

BOOKS AND PAMPHLETS RECEIVED.

Are Complete Castrates Capable of Procreation? By F. R. Sturgis, M.D., New York. Reprint. 1898.

The Phonendoscope. By Aurelio Bianchi, M.D., Parma. With 37 illustrations by A. George Baker, A.M., M.D., Physician-in-Chief of the Chinese Medical Dispensary, Philadelphia. Philadelphia: George P. Pelluy & Son. 1898.

Lecture.

THE ARTHRITIS OF CEREBRO-SPINAL FEVER.[1]

BY WILLIAM OSLER, M.D.,
Professor of Medicine, Johns Hopkins Medical School, Baltimore, Md.

Since March, 1898, eleven cases of cerebro-spinal meningitis have been admitted to the wards. The disease has been prevailing to a slight extent in the city, scarcely enough to justify the use of the term epidemic, but as this is the first opportunity we have had since the opening of the hospital to study it these few cases have been most interesting. A lecture upon seven of them, which I gave to the post-graduate class on June 15th, has already appeared in the *Maryland Medical Journal*, July 16th. To-day I wish to call your attention to a feature of the disease which was not illustrated by any of the previous cases, namely, the remarkable joint complications.

Arthritis is a very inconstant symptom. North, in his valuable "Treatise on a Malignant Epidemic commonly called Spotted Fever,"[2] speaking of the more unusual symptoms, mentioned "swelling, like rheumatism, of the joints." In his collection of communications from different physicians describing the early epidemics between 1806 and 1811 several of the correspondents mention inflammation of the joints, like the acute rheumatism. A more specific early statement is that given in the admirable report on the disease by Thomas Welch, James Jackson and John C. Warren, a committee appointed by the Massachusetts Medical Society in 1810. "In some cases swellings have occurred in the joints and limbs; these have been very sore to the touch, and their appearance has been compared to that of gout. The parts so affected feel as if they had been bruised. These swellings are in the smaller as well as in the larger joints, and are often of a purple color. Those on the small joints especially sometimes disappear as the disease approaches its crisis.[3]

In many of the carefully studied epidemics in France and Germany special attention has been paid to the joint lesions of the disease. In the recent outbreak in Boston arthritis occurred in only 6 of 111 cases.[4]

In Ward F there have been two patients with severe cerebro-spinal meningitis, in both of whom arthritis was an early and quite marked manifestation.

Case I. *Clinical Summary.* Abrupt onset with chill; fever; delirium; stiffness of the neck; enlargement of the spleen; multiple arthritis; patchy erythema of the skin with purpura; lumbar puncture; demonstration of diplococcus intracellularis in the meningeal exudate, in the blood, and in the pus from knee-joint; death on the sixth day.

Anatomical Summary. Purulent cerebro-spinal meningitis; extensive collapse with areas of pneumonia at bases of both lungs; purulent arthritis.

At the ward class on Saturday, November 5th, in one of the small rooms behind Ward F I found Jacob B., age twenty-four years, who had been brought to the hospital the evening before in a state of delirium and unconsciousness. He was a medium sized, fairly-well nourished man, with dark features; he looked very ill. The decubitus was dorsal, with the face and neck turned to the left, in which position they remained during the examination. He could not be roused. The pupils were of medium size, equal, did not react well to light, no strabismus. There was no discharge from the nose or ears. The respirations were rapid, 36 per minute, the breath foul and pungent. The pulse was 132. The lips and mucous membranes were of good color, and the tonsils and throat were free from exudation. There were no herpes. The condition which attracted most attention was that of the joints. The right wrist was swollen and puffy and a little red. The skin over the knuckles of the hand was reddened and the joints seemed a little swollen, and there was a slight erythematous swelling over one or two of the phalangeal joints. The wrist was less swollen; there was a marked reddening over the styloid process of the right ulna. Both elbows were reddened and swollen, particularly over the olecrana, and on the left side a brawny swelling extended for several inches over the triceps. The redness was very intense, the inflammation seemed superficial, and the swelling did not extend to the front of the joints. The right knee was swollen and there were purplish-red blotches over the patella. The left knee was less swollen, but presented the same blotchy erythema. There was tenderness in the calves of both legs, and while examination of the joints caused no sign of wincing, deep pressure in the right calf caused an expression of pain to pass over his face. There was blotchy redness without much swelling over the malleoli, and on the inner surfaces of both feet there were spots of purpura.

The examination of the lungs showed a decided flatness in the lower right axilla, extending into the intrascapular area, with harsh, not typically tubular, breathing, and a few crackling râles. The heart sounds were clear. The abdomen showed no rose spots, was flat and a little tense; the spleen was enlarged and could be readily felt below the costal margin. On the evening of admission there was a leucocytosis of 17,000, which by the next morning had risen to 22,000.

While the limbs were perfectly flaccid, it was impossible to move the neck, which was so rigid that the whole trunk could be lifted by placing the hands under the head. The patient's temperature, which, on admission, was 101°, sank to 98° at 8 P. M., but had slowly risen, and at the time of examination was about 102°.

The patient's history, as obtained from the friends by Dr. Hastings, was that the illness came on rather suddenly, with a chill and nausea and vomiting, on Tuesday, the 1st, since which time he had been in bed and had fever. On Thursday night he was actively delirious. He first complained of much pain in the back of the head and neck; he had slight diarrhea, two or three movements daily, no epistaxis. When visited at his home by Dr. Hastings before admission to the hospital the delirium and stupor were marked, pulse 120, respirations 28, and there was great rigidity of the limbs.

It was evident that the patient was suffering with a very profound infection. The condition of the joints resembled that in an acute pyemia. The deep coma and the rigidity and stiffness of the neck were, however, suggestive of cerebro-spinal fever. The consolidation of the lower part of the right lung appeared to be pneumonic, but while meningeal symptoms in ordinary pneumonia are not uncommon, they are very rarely associated with stiffness of the neck or rigidity of the limbs, and arthritis is an excessively rare event. Lumbar puncture was performed by Dr. Futcher, and 50 cubic centimetres of a turbid fluid with a few white stringy flakes was removed. Cover-slips showed diplococci resembling the diplococcus intracellularis. From the right knee about half an ounce of pus was obtained, which showed similar looking diplococci.

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[1] Clinical Lecture, Johns Hopkins Hospital, November 9, 1898.

[2] Treatise on a Malignant Epidemic commonly called Spotted Fever, New York, 1811, p. 15.

[3] Medical Communications and Dissertations of the Massachusetts Medical Society, vol. ii, 1813, p. 135.

[4] Councilman, Mallory and Wright; Report Massachusetts State Board of Health, 1898.

Throughout Saturday the patient grew progressively worse. His temperature rose to 103.5° in the evening. The leucocytes were 37,000 per cubic centimetre. The respirations increased to 60 per minute; the pulse became small and much more frequent, between 160 and 172. The right knee-joint became much more swollen, and the swelling and redness of the elbow-joints, and the metacarpo-phalangeal joints of the second and first fingers of the left hand and of the first phalangeal joint of the left ring finger were much more swollen. Both wrists were also more red. A marked change had taken place also in the lungs. The area of flatness on the right side had increased, and there was also in the subscapular region on the left side an area of flatness with distant tubular breathing. The stiffness of the neck was not so marked, and the patient moved the head about from side to side. The pupils were not irregular, and there was slight external strabismus of the left eye. Towards the evening purpuric spots appeared on the thighs, most extensive on the inner side. There was general muscular rigidity. The urine contained a large amount of albumin, the specific gravity was 1,024, and it contained many hyaline and granular casts. The symptoms progressively increased through the night, and he died at a little after ten o'clock on the 6th of November, on the morning of the sixth day of his illness. The temperature rose to 105.5° at 4 A. M., and remained above 105° until his death. Just before death the head was thrown backward by a quick contraction of the muscles, and there were movements of the limbs, particularly on the right side. Early in the morning of the 6th there was a diffuse purple mottling of the skin of the trunk and limbs.

The condition found post mortem you see illustrated in the specimens before you. Notice over the surface of the convolutions of the brain, more particularly, too, over the sulci on the right side, a creamy, purulent exudate; the same is seen over the upper part of the cerebellum, and to a less extent over the pons and medulla. There is very little exudate in the anterior portion of the base in the region of the optic chiasm. The cord presented a slighter degree of exudate, chiefly in the upper part; it was not involved to the same extent as in some other cases which came to autopsy in the spring.

The condition of the lungs is very interesting. You will remember that at the ward class on Saturday morning there was flatness in the lower right axilla and infrascapular region, with fine crackling râles and harsh, but not definitely tubular, breathing. Corresponding to this a large part of the lower lobe was dark in color, collapsed, and to the touch there were areas of consolidation. A very similar condition developed quite rapidly in the left lower lobe, and when removed it showed the same state, very dark in color, with here and there more prominent areas, also dark, but which felt much firmer and indurated. On inflation through the bronchus this dark, airless tissue was shown to be really in a condition of collapse, though there were areas of pneumonic consolidation scattered through it. The spleen was enlarged and soft. There were no special changes in the heart, though perhaps there were a few small beads of vegetation on the aortic cusp. There was suppuration in the right knee-joint; the other joints could not be opened.

Perhaps the most remarkable feature of this case is the widespread diffusion of the diplococcus intracellularis throughout the body. For the first time the organism has been isolated from the blood during life and from the joints. A full report upon this interesting aspect of the question will be given subsequently by Dr. Gwyn.

Case II. *Clinical Summary.* Onset of illness with arthritis; continued fever; tentative diagnosis of typhoid fever; development of paraplegia; lumbar puncture; purulent meningitis; laminectomy; irrigation of the spinal membranes.

You remember that on last Wednesday, November 2d, I showed you a man from Ward F, John F., age twenty-five, a sailor, who was admitted October 29th, complaining of pain in the right hip and left ankle. He had knocked about the world a good deal, but he seemed to have escaped all serious illnesses, except an attack of gonorrhea and of syphilis in 1894. In the spring of 1897 he received an injury to the hip and was eight weeks in hospital at Shanghai. Subsequently he was in hospital for three weeks at Yokohama, and was told that he had rheumatism.

His present illness began on Wednesday, October 26th, with pain in the right ankle, which became swollen and red. The next day the left ankle, and the following day his right hip, became painful. He felt feverish, but he had no headache. He was able to walk to the hospital. On admission his temperature was 104°. There were tenderness and stiffness in the right hip-joint, without swelling or redness. The left ankle was swollen, red and very tender. There was a slight redness and tenderness of the left wrist. I need not detail to you again the general negative condition on the very complete examination made by Dr. Hastings. One feature, for which indeed I showed him specially last Wednesday, was the abundant crop of peliomata over his abdomen and thighs. Until the day you saw him his temperature had been pretty steadily between 102° and 104°. On the 2d it fell to 100°. We were very doubtful as to the condition. He had more fever and looked much more ill than in an ordinary attack of acute rheumatism. We suspected typhoid fever. The inflammation in the ankle-joint subsided in a couple of days. A suspicious feature was that on the 31st and on November 1st he complained of a great deal of pain in the back and hips, and, as he said, all over, and he had several profuse sweats. On November 1st it was noticed that he held his head in a retracted position, but there was no stiffness of the neck muscles. He was delirious at times, but as a rule answered questions intelligently. The joint symptoms had subsided completely at this date. During the past week there have been remarkable changes. We suspected, as I said, typhoid fever, though he had no rose spots and the Widal reaction was not present. The spleen, however, was palpable and he looked very much like a patient with enteric fever.

On November 4th he had retention of urine, and he did not seem to be so well, though the temperature was lower, not above 103°, but he had delirium.

There was no retraction of the head or stiffness of the neck. On the 4th, 5th and 6th he still had to be catheterized. At the examinations to this date nothing special had been noted about his legs. I remember quite well that on the 3d, when I examined the condition of the ankle and of the hip, he seemed to use the legs quite naturally. At 3.30 P. M. on the 6th, as he was being prepared for an enema, it was noticed that the legs had a very helpless appearance, and when the patient was asked to move them he could not. On further examination complete anesthesia was found as high as the level of the navel, above which there was a band six or seven centimetres in width of hyperesthesia. At 5 P. M. the patient was in the same condition, only the abdomen had become more full, and there was extreme tenderness. The legs were quite limp, and the patient was quite unable to move them. There was slight stiffness of the neck, most marked on trying to bend the head forward. The reflexes, superficial and deep, of the legs were absent, rectum reflex was present. At 6 P. M. lumbar puncture was performed and about two drachms of a thick, creamy, brown-tinted pus removed. It showed microscopically cells and numerous diplococci, mostly extracellular and in clumps; some of these looked very like the diplococcus intracellularis. At 9 P. M. on the same evening Dr. Cushing exposed the lower part of the cord and a thick, purulent pus was drained away, coming chiefly from the lower part. The region of the cord seen looked hyperemic. A small catheter was passed under the dura, and the membranes were irrigated with normal salt solution, with which much pus escaped. The patient stood the operation well, but there has been no change since in the condition of the paralysis. He is rational and the temperature has not been so high. The leucocytosis persists, and is to-day 30,000 per cubic centimetre.

When the spinal symptoms developed we naturally thought of cerebro-spinal fever, and it very possibly is a case of this disease. The smears taken from the spinal puncture showed some suspicious-looking diplococci, though from cultures, both at puncture and operation, there have grown the staphylococcus pyogenes aureus. There is no evident source of infection, as is usual in cases of meningitis due to the ordinary pus organisms. It is to be regretted that cultures were not made from the inflamed ankle-joints when he first came into the hospital.

The infectious arthritides, while common in some fevers, are very rare in others. In acute rheumatic fever, the typical infectious arthritis, the nature of the poison is still unknown; it is probably specific and peculiar, and the joint lesions show little or no tendency to pus formation. The other infections differ very much indeed in the frequency with which joint complications occur. In the gonorrheal infection, the septic fevers, cerebro-spinal fever, Malta fever, dengue and scarlet fever they are common, while in measles, typhoid fever, small-pox and pneumonia they are exceedingly rare.

There are two points of special interest in these cases; first, the early onset of the arthritis. I confess that in Case II we were completely thrown off our guard. I suspected for a day or two rheumatic fever; then as the symptoms subsided and as the temperature kept up we thought possibly it might be an unusual instance of arthritis in early typhoid fever, as gonorrheal infection could be excluded.

Case I illustrates probably the maximum degree of involvement of the joint in cerebro-spinal fever. It shows, too, the rapidity and severity with which the complication may develop. When Dr. Hastings saw this man at his home on the third day of his illness the joints were sore and red and swollen.

The second point, of still greater interest, is the light which Case I throws on the nature of the infectious arthritides. The arthritis in cerebro-spinal fever brings up a question, much discussed of late years by neurologists, of the cause of the joint affections in diseases of the central nervous system. All grades — simple congestive synovitis with areas of painful redness resembling erythromelalgia, acute multiple synovitis and arthritis, extensive disorganizing suppuration of joints — are found in the acute and chronic forms of spinal cord disease. A very careful bacteriological study should be made of these cases. The joint lesion is usually regarded as trophic in character; and I think the general view has been that in cerebro-spinal fever also the arthritis is a secondary effect of the inflammation of the cerebro-spinal meninges. In this case the separation of the specific organism from the inflamed joints and from the blood demonstrates that the joint complication may be the direct effect of a widespread diplococcus septicemia.

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Address.

REFORM IN MEDICAL EDUCATION.[1]

PRESIDENT'S ADDRESS BEFORE THE SOCIETY OF AMERICAN NATURALISTS.

BY B. P. BOWDITCH, M.D., LL.D., D.SC.

The choice of a physiologist as the presiding officer of the Society of American Naturalists might perhaps have justified me in selecting some of the problems connected with experimental physiology as the subject of my remarks this evening but, as questions of this sort are wont to awaken but a languid interest except among those who are themselves engaged in physiological research, I have thought it better to allow my choice of a subject to be guided by the fact that we are nearly all of us actively engaged in *teaching* as well as in *studying* our sciences, and to address you this evening upon some topic connected with education.

My own experience of twenty-seven years as a professor of physiology and of ten years as Dean of the Harvard Medical Faculty naturally inclines me to discourse upon the subject of medical education, and since the great profession of medicine demands from its practitioners a certain familarity with the fundamental truths of all the natural sciences, it can surely not be inappropriate to ask the representatives of those sciences to consider with me how far the progress of medicine and of the allied sciences has made it desirable to revise our methods of imparting medical instruction.

Let me say at the outset, that in speaking of the profession of medicine I use the term not in its narrow sense, to designate the art of curing disease, but in its broader signification, to include a study of the whole environment of man as far as it affects the production and maintenance of a healthy mind in a healthy body.

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[1] Delivered at the Annual Meeting of the Society of American Naturalists, New York, December 29, 1898.

In what I shall have to say on this subject I shall confine myself chiefly to the medical schools of this country, though it will be found, I think, that the conclusions to which I shall endeavor to lead you will have their application to medical schools throughout the world.

The most important event in the history of medical education in this country occurred some thirty years ago, when many of the principal schools abandoned the plan of giving a series of winter lectures, which were attended by all the students, irrespective of their proficiency, and established a graded system of instruction in which the studies of one year were preparatory to those of the next. Those whose experience in medical education is confined to the period since this change was made can scarcely appreciate the value and importance of the reform which raised the medical schools of the country from a condition in which they were aptly compared to joint-stock manufacturing companies concerned only in taking in as large an amount as possible of raw material in the shape of medical students and in turning out a maximum of the finished product, that is, doctors of medicine, with a minimum of cost to the producer. "Cheap doctors and plenty of them" seems to have been the motto of the medical schools of that period. Since this reform the medical schools of the country have been conducted on sound educational principles, and the best of them compare favorably with the medical schools of Europe.

During the last quarter of a century the improvement in medical education in this country has consisted chiefly in increasing the requirements for admission, in the lengthening of the course and in the extension of the laboratory method of instruction. Important as these improvements have been, it may fairly be asked whether they have kept pace with the requirements imposed upon teachers by the remarkable advance in every department of medicine during the last thirty years.

During this period we have seen the germ theory of disease established upon a firm basis, and extended so as to throw light upon a large number of morbid processes with which it was formerly supposed to have no connection. Antiseptic methods have revolutionized the surgeon's art. The study of the internal secretion of glands has led to the development of a system of glandular therapeutics. The use of the antitoxin treatment has robbed one at least of the most dreaded diseases of more than half of its terror, while the use of instruments of precision has increased the accuracy of our diagnosis in nearly all the ills to which flesh is heir.

At the beginning of this period it was possible to impart to an intelligent medical student in a three years' course of study a considerable fraction of the acquired medical knowledge of the time and to train him to safely use the comparatively simple methods of diagnosis and treatment then in vogue. At the present time were we to seek to give to the same student a similar proportion of the accumulated knowledge now at the disposal of the profession and to teach him the use of the refined modern methods for the study and cure of disease it may be reasonably estimated that a ten or even a fifteen years' course of study would be required. As it is obviously impossible to prolong the course of medical study to anything like this extent the question arises: In what way shall newly acquired knowledge in the science and practice of medicine be incorporated into the existing curriculum of the medical student?

Up to the present time this question does not seem to have been seriously considered. As new and important subjects have forced themselves upon the attention of the medical profession our schools have sought to meet the new condition simply by adding to the existing curriculum a more or less lengthy course of instruction on the subject in question. Thus the importance of enabling physicians to recognize pathogenic microbes has led to the establishment of a department of bacteriology in our principal medical schools, while the great advance made in the treatment of special classes of disease has occasioned the appointment of numerous professors of specialties, such as gynecology, orthopedic surgery, pediatrics, etc.

The medical curriculum has thus grown by what may be called, in biological language, a process of accretion, and there has been little or no attempt to make room for new instruction by the omission of less valuable courses or parts of courses, though in certain directions the advance of knowledge, by demonstrating the inaccuracy of previously accepted views, has led to a simplification of instruction. When it has been found absolutely impossible to add any further courses a remedy for the congestion of instruction has been found in the prolongation of the medical curriculum from three years to four.

It is of course evident that this process cannot be indefinitely continued. In fact, a slight study of the subject suffices to show that a limit has already been reached. Indeed, as long ago as 1870 Huxley was so thoroughly impressed with the crowded condition of the medical curriculum in England that he expressed "a very strong conviction that any one who adds to medical education one iota or one tittle beyond what is absolutely necessary is guilty of a very grave offence,"[2] and quite recently Prof. M. Foster in speaking of the enormously increased requirements in medical education has expressed himself as follows: "Now it is obvious that, whatever may have been possible once, it is impossible nowadays to demand that all of each of these things should be learnt by the student of medicine. Though possibly the power of man to learn is increasing, though each science as it becomes more and more consolidated can be expounded and apprehended with greater ease, though the grasping of one science is in itself a help to the grasp of other sciences, yet beyond doubt that which has to be learnt is enlarging far more rapidly than is man's ability to learn."[3]

To extend the course of instruction in the medical schools of this country beyond the present four-year limit does not, under the prevailing conditions of education in America, seem desirable, and the curriculum of most of our schools is already so crowded that no considerable amount of instruction can possibly be added. In what way then can we give to our medical students an adequate amount of information on all subjects embraced in the constantly widening domain of medical science and art? In other words, how shall instruction keep pace with knowledge?

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[2] Medical Education: Collected Essays, vol. iii. D. Appleton & Co. 1894.

[3] An Address to the Students of Mason University College, Birmingham, October 3, 1898.

In seeking an answer to this question it may be assumed that a medical school of the first rank should be an institution in which the most advanced instruction in all departments of medicine can be obtained, and on this assumption it is, of course, impossible to arrange a course of study that every student *must* follow in all its details, for in the time which may properly be devoted to a course of professional study it is quite impossible for even the most intelligent students to assimilate all the varied information which such a school may reasonably be expected to impart.

It seems, therefore, to be evident that in arranging a course of medical study a distinction must be made between those subjects which it is *essential* that *every* student should know and those subjects which it is *desirable* that *certain* students should know, that is, between those things of which no man who calls himself a physician can afford to be ignorant and those which are important for certain physicians but not for all; in other words, provision must be made both for required and for *elective* studies.

The introduction of the elective system into a professional school is not an altogether novel proposition. For several years a large part of the instruction in the fourth year of the Harvard Medical School has been given in elective courses in various specialties, such as ophthalmology, otology, etc. The extension of the elective system to the earlier years of the course would be attended by no difficulty as far as details of administration are concerned and has indeed been advocated by President Eliot in a speech at the dinner of the Harvard Medical Alumni Association in 1895. But the question may perhaps be asked, whether it will be possible under such a system to secure the proper training of young men for the duties of a profession in which experience of life contributes so largely to success, and in which, therefore, a student at the beginning of his career may be supposed to be peculiarly in need of the guidance of his teachers.

It is true that in the academic department of Harvard University the capacity of the average student to choose his courses wisely and well has been demonstrated by the experience of many years, but it may be properly urged that the success of the system in the academic department does not necessarily justify its extension to a professional school. The responsibility of the medical faculty in granting the degree of M.D. is very different from that of the academic faculty in giving the A.B. diploma, since an imperfectly qualified practitioner of medicine may endanger the lives of his patients, while an unworthy graduate of the academic department can, as a rule, injure no one but himself. Hence the medical faculty may justly be required to exercise greater caution in bestowing the degree of M.D. than is necessary in the case of the A.B. diploma. We must, therefore, inquire whether it is possible to obtain the advantages of a flexible curriculum consisting largely of elective courses without losing the security against superficial and imperfect work which the present compulsory system is supposed to afford.

Any one who is familiar with the existing methods of medical instruction is aware that in nearly every department many things are taught which are subsequently found to be of use to only a fraction of those receiving the instruction. Thus the surgical anatomy of hernia is taught to men who will subsequently devote themselves to dermatology, future obstetricians are required to master the details of physiological optics and the microscopical anatomy of tumors forms a part of the instruction of men destined to a career as alienists. Now no one can question the propriety of including instruction on all these subjects in the curriculum of a medical school, but it may be fairly questioned whether *every* student should be forced to take instruction in them *all*. It may perhaps be urged that no choice of studies can be made without determining to some extent the direction in which the work of a future practitioner is to be specialized, and that such specialization cannot be properly and safely permitted until the student has completed his medical studies. To this it may be answered that, whatever may be the dangers of too early specialization, the dangers of crowding the medical course with instruction of which many students do not feel the need, and of thus encouraging perfunctory and superficial work, are certainly no less serious. Moreover, it will doubtless be found perfectly possible to establish such a relation between the required and the elective courses that the requirements in each department will be in no way lowered, while a certain freedom of choice is permitted with regard to the direction in which the work is pursued. To illustrate this point allow me to describe a possible arrangement of a course of study in the department of physiology, with which I am of course more familiar than with any other.

In the Harvard Medical School instruction in physiology is now given in a course of about one hundred lectures, besides recitations, conferences and practical laboratory work. Were the work to be rearranged in accordance with the above plan it would probably be found possible to condense into a course of about fifty or sixty lectures all the most important facts of physiology with which every educated physician must necessarily be familiar. Attendance upon these lectures, combined with a suitable course of text-book instruction, would suffice to guard against gross ignorance of physiological principles. In addition to this required work, short courses of eight or ten lectures should be provided, giving advanced instruction in such subjects as the physiology of the special senses, cerebral localization, nerve-muscle physiology, the internal secretion of glands, the physiology of the heart, circulation and respiration, the digestive secretions, the reproductive organs, etc. These courses should be elective in the sense that no student should be required to take them all. Each student might, however, very properly be required to choose a certain number of courses, which, when once chosen, become, for the student choosing them, required courses leading to examinations. The number of special courses which each student should be thus required to elect should be sufficiently great to render the total amount of physiological instruction in no way inferior to that which is given under the present system.

It would doubtless be found desirable in practice not to confine the possibility of taking elective courses to the year in which the required instruction is given, for a student may frequently in the latter part of his course become interested in a subject like mental diseases, for instance, and will then be glad of an opportunity to take special instruction on the physiology of cerebral localization. The elective courses should, therefore, be so arranged that they may be taken in any part of the medical curriculum.

There is, in my opinion, no doubt that an arrangement of instruction similar to that here suggested for physiology could be advantageously adopted in the departments of anatomy, histology, bacteriology, medical chemistry, pathology, surgery and in the courses of instruction in the various special diseases, such as dermatology, opthalmology, etc. Whether the instruction in clinical medicine and clinical surgery can be thus modified is a question about which more doubt may be entertained, and which I prefer to leave to persons of greater experience than myself in methods of clinical instruction.

Under the existing conditions of medical education the introduction of the elective system in some form or other seems to be an essential condition to any further important advance. If it be said that under this system the medical degree will cease to have the definite meaning now attached to it and that it will be impossible to tell from his diploma in what way a physician has been educated, it may be replied that, though the degrees of A.B., A.M., Ph.D. and S.D. are affected with exactly this same uncertainty of signification, their value seems in no way diminished thereby. As long as the M.D. degree stands for a definite amount of serious work on medical subjects directed on the lines above indicated we may be reasonably sure that those who hold it will be safe custodians of the health of the community in which they practise.

If it be urged that the elective system in medical education will lead to the production of a class of physicians who, owing to the early specialization of their work, will be inclined to overrate the importance of their specialty and to see in every disease an opportunity for the display of their special skill, it may be pointed out that this result is apt to be due not so much to early as to imperfect instruction in the work of a specialist, and that since the elective system tends to encourage thoroughness in special instruction, the evil may be expected to diminish rather than to increase.

I have spoken of the extension of laboratory instruction as an important forward step in the improvement of educational methods in medicine during the last quarter of a century and I desire to bring my remarks to a close with a few words on the relation between laboratory and didactic methods in medicine and on the employment of both methods in a system of instruction including both required and elective courses.

There is perhaps no field of human activity in which the pendulum of reform makes wider excursions than in that of education. Whenever any given method is found to give unsatisfactory results there is a strong tendency to abandon it altogether in favor of some entirely different method. Thus the obvious defects of the oral system of examination employed in the Harvard Medical School thirty years ago led to its complete abandonment and to the adoption of the written examination book, though there is little doubt that a system combining the advantages of both the oral and the written methods could easily have been devised. In the same way the fact that many subjects have been, and indeed still are, taught in systematic didactic lectures which can be better taught by laboratory methods tends to obscure the equally important fact that there are many other subjects in the presentation of which the living personality of the lecturer is a very important factor, and which indeed can be properly presented to students only by those who have had much experience in weighing scientific evidence. In this connection it is interesting to recall the wise words of Huxley, who expressed himself on this subject as follows:

"What the student wants in a professor is a man who shall stand between him and the infinite diversity and variety of human knowledge, and who shall gather all that together, and extract from it that which is capable of being assimilated by the mind."[4]

To what extent the laboratory can replace the lecture-room will of course depend upon the nature of the subject taught. In such a branch as anatomy, where facts learned by observation form the greater part of the knowledge to be imparted, laboratory work can be substituted for didactic instruction to a greater extent than is possible in subjects like physiology and pathology, where inferences from observations and conflicting views must frequently be presented. In no department of medicine, however, will it probably be found possible to dispense entirely with a systematic course of lectures in which a trained instructor may give to his class the benefit of his accumulated experience.

A consideration of the nature of the subject taught will also furnish a guide for the employment of laboratory and didactic methods in the required and elective courses above suggested. In general the required courses, being comparatively elementary and concerned chiefly with the presentation of well-ascertained facts, may be made demonstrative in their character and may be conducted in accordance with laboratory methods, though a short course of didactic lectures, parallel with laboratory work, will in most cases be found to be essential. In the elective courses which provide advanced instruction in many directions, the limits of our knowledge will be more nearly reached. It will therefore be necessary to present and weigh the evidence for and against the various conflicting views which are almost certain to be held with regard to subjects lying within what Foster has called the "penumbra" of solid scientific acquisition. For this purpose the most suitable method of instruction seems to be a short course of carefully prepared didactic lectures which should, however, be varied by demonstrations whenever the nature of the subject will allow.

It is, however, unnecessary to discuss these and other details at the present time. They will speedily arrange themselves as soon as the necessity for a comprehensive reform in our methods of medical instruction is generally recognized and it is in the hope of helping to secure this recognition that I have addressed these remarks to you this evening. In whatever way the remedy is to come it should not be long delayed, for the difficulty of giving adequate instruction to constantly increasing classes seeking information over a constantly widening field of knowledge is felt each year with greater and greater keenness.

The Charities of Baron Iveagh. — It is reported that Baron Iveagh, formerly head of a brewing firm in Dublin, has presented $1,250,000 to the Jenner Institute of Preventive Medicine, for the promotion of scientific research. It is also stated that Baron Iveagh proposes to cleanse an unsanitary district in Dublin and give it to the corporation for street improvements at a cost of about $1,250,000.

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[4] Medical Education: Collected Essays, vol. iii. D. Appleton & Co. 1894.

Original Articles.

THE TEACHING OF PHYSIOLOGY IN MEDICAL SCHOOLS.[1]

BY W. T. PORTER, M.D.,
Associate Professor of Physiology in Harvard University.

In the Harvard Medical School, which may be taken as a fair example of the better schools of medicine, physiology occupies one-fourth of the student's time during one collegiate year of thirty-two weeks. Stated instruction is given during two hundred and twenty hours, and the time spent in home study can hardly be less than five hours a week, or one hundred and sixty hours in the year, making a total of three hundred and eighty-one hours, or one-quarter of the total number of working hours in the collegiate year, on the basis of eight hours' hard work per day. The instruction consists of lectures (one hundred and eight hours) illustrated by diagrams, lantern-slides, models, specimens, and occasional demonstrations; of laboratory work (sixty-four hours, equal to fifteen per cent. of the stated instruction, and to eight per cent. of the total time given by the student); of recitations from text-book or lecture notes (thirty-two hours, equal to fifteen per cent. of the stated instruction), and of thesis writing, in which thirty-two men in a class of over two hundred present essays put together by them from reading a moderate number of the researches upon the theme assigned. These essays are read before the class, and the reader may be questioned by any student present; the "discussion" is closed by remarks from the instructors. The instruction described begins with the entrance of the student into the school, and is terminated by a written examination of two hours, and an oral examination of six minutes' length.

The physiological lectures in medical schools are commonly given by one man over the whole immense field of physiology. This field is much too large to permit of even superficial personal acquaintance by one man. The instructor must therefore necessarily take the chief part of his lecture from a text-book. To this he adds citations of a few experiments or observations taken at random from the original sources. He has not and can not have real knowledge as to the present state of special opinion on the majority of the chapters in his subject, first, because none but a specialist can cope with the constantly rising flood of meritorious research in any one field, — to keep pace with the whole of a science which stretches ample arms over the larger part of human and comparative biology is impossible. A natural science cannot be thoroughly well taught except by those who have themselves made experimental investigations in the special field which they would teach. No one in these days can work profitably in many fields and no one man should attempt to teach them all. A man trained, for example, in the physiology of digestion is likely to have but a relatively feeble grasp on the physiology of the circulation, the nervous system, or the special senses. It follows that most of the instruction in the one-man system does not adequately represent the present state of knowledge. It is behind the times in all except the special field cultivated by the instructor himself. So far as possible, the instruction in each field should be given by the man actively at work therein, but this wise principle of the division of labor is not usually regarded.

Printed notes of the lectures are prepared by the students and sold to the class, and many students take their own notes. Occasionally these are good; such are usually taken by students who could learn without the lectures, but commonly the notes are wretched performances and wellnigh useless. They are far inferior to even a moderately good text-book. Students, as a rule, do not seriously study their notes until just before the examination. Many men are persuaded that the lecturer "follows Foster" or some other text-book and excuse their idleness in the lecture hour by resolves of industrious reading of the omniscient Foster at some future time.

The lectures last a full hour and are frequently held in a badly lighted, badly ventilated, and overcrowded room. Other lectures are sometimes given in this room the hour before, or the student goes from the vitiated air of one lecture directly to another. Students are not given chairs, but are squeezed onto hard, uncomfortable benches. They have no place on which to lay their note-books, and no opportunity is afforded to write notes after the hour, while the lecture is fresh in the mind.

As a rule, in medical schools many of the lectures in physiology are given before the student has any acquaintance whatever with the anatomy of the structures considered, and, still more are heard before the student has any real anatomical knowledge, — that based on actual contact with tissues and not upon a glimpse of a distant prosection or a hasty glance at a diagram. Lectures on the functions of the brain and the spinal cord are often delivered to students who never have so much as seen the brain or cord. Pictures in a text-book supply the place of real knowledge. Much of the student's learning is mock physiology, based on mock anatomy. His ignorance of the structures and real appearance of the parts he studies is exceeded by his ignorance of their chemistry.

Passing now to the demonstrations, we find that in the larger schools they are made before an audience of at least two hundred. Thus the greater number cannot see the demonstration clearly. Indeed, the procedure is usually more or less illusive. Take for example the celebrated demonstration of the mammalian heart in the anesthetized living dog. The student sees at a considerable distance a small object in confused rapid motion; he hears the rattle of an induction machine; the lecturer cries "On!" and the heart stops; "Off!" and the confused motion recommences. The student is supposed to have seen how the heart beats and to have studied the inhibitory action of the vagus nerve. I cite this demonstration because it is one of the best; of many, still less can be perceived, and many, also, do not show more than a method of taking a graphic record. If the class is divided into small sections the glimpse allowed each man does not suffice for a real grasp of the details. Very commonly the demonstrations requiring much time are given in a course separate from the lectures. In short, most of the demonstrations as now given are an aid to the memory rather than a means of training in science. The position awarded them by the usual lecturer and by almost every student is one of the evidences of the fundamental pedagogical error which renders most medical teaching of anatomy and physiology so largely futile, namely, the deplorable notion that demonstrations are merely illustrative and the book and the lecture the main force. Never was the pedagogical cart more squarely before the horse. Contact with nature is the essential of all training in biology.

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[1] Presented in part at the meeting of the Society of American Naturalists, December 29, 1898.

The laboratory work in large schools is given in relatively small sections, and is not co-ordinated with the regular lecture course. The student feels that the experiments are purely secondary. The experiments are imperfectly arranged into groups. They merely illustrate the text-book. In no case do they present a full picture of any field. The time allowed is so short that criticism of results and insistence upon the proper standard of excellence is not attempted.

The writing of theses is useful to the few who write, and in a certain degree stimulating to those who hear. But it cannot be denied that the ordinary thesis sows more error in fifteen minutes than can be dug up in several hours. Theses are not seen by the instructors before they are heard by the class.

The instruction is the same to every student without regard to what his life is to be. Much time is given to matters which have a very remote connection with the future of most students, and which are not better material for training the mind than matter bearing directly on the student's future work. This destroys the interest of many — and an uninterested man cannot be taught.

The results of the present method are to be judged in part by the examination. The Harvard examination is easy, contrasted with the standard of non-professional schools, and measured by that standard the scale of marking is extraordinarily indulgent. Nevertheless the majority of the class fails to reach 65 per cent. The examination for the most part does not deal with real knowledge, but may be passed successfully by the mere reading of a book, and, in fact, the actual preparation for it is almost entirely the memorizing of the text-book or the lecture notes. Students are often questioned about the heart-sounds. Most of them have never listened to the heart. The common reply is the quotation of an unfortunate and misleading sentence in the text-book: "The heart-sounds are like the syllables 'lub dupp.'" They are questioned about the motor area of the cortex of the brain. Few of them have ever dissected a brain. Were the class examined as to their real knowledge of things in nature, and not their recollection of a description in a book, a lecture, or a schematic diagram, it is my deliberate judgment, based on the examination of more than one thousand students, that 90 per cent. would fail to pass. Those who passed would be clever men who owe little thanks to their stated instruction. The leaders in medicine educate themselves in spite of the regular routine.

The results of the present method are further to be judged by the opinion of well-balanced successful men as to the value of the training in the practice of medicine. It is a significant fact that the regard of such men for the physiology taught in the schools is diminishing, whereas it follows logically from the construction of medical science that it should steadily increase, for physiology is the rock upon which rational medicine is built. In truth, scarcely one student in ten gets a sound knowledge of the elements of physiology. By far the greater number enter the physiological course persuaded that natural science can be acquired from books, and leave convinced that a deal of talk and a pennyworth of nature will give one real knowledge of the action of living tissues.

It is important to inquire how this extraordinary system was developed. The reply is that the present method is a survival of mediæval methods; the student of tradition finds a rich field in the history of medical teaching. The teaching of physiology has split off from anatomy; men now living have taught both subjects in the same course of lectures. Descriptive anatomy became the most conspicuous discipline in medicine at a time when the best mental training could be had only from books, from lectures, from abstractions. It was the flowering time of metaphysics, of authority, of the deductive method. The true principle of approaching nature discovered by the Greeks survived only in a few men of genius — a spark that in our time has been fanned into flame. Joined to the powerful example of the most liberal education of that period was the difficulty of obtaining material for dissection. Stark necessity united with specious theory to fasten upon this most concrete of sciences the methods of the schoolmen, and to this day the bulk of the instruction in anatomy remains didactic and consists of books, diagrams and more or less misleading models. Most men, when asked to describe a bone, visualize — not the bone, but the picture of the bone in "Gray's Anatomy." Dissections are made to illustrate the book. The printed description is learned by rote and the dissection practised too often simply as a manual exercise. The anatomy of the medical college is largely a memory drill — such as belongs pedagogically in the secondary schools. These seventeenth-century notions have been passed on from anatomy to physiology.

Practical work in physiology has also been kept back by the erroneous ideas that the cost of apparatus and other materials is prohibitory, that medical students cannot master the details of exact experimentation, that delicate apparatus cannot be trusted in their hands, and that instruction to the extent required cannot be given to classes of two hundred or more because the course will become too complicated to be carried out.

The chief obstacle which has kept physiology in an ancient and now almost abandoned path is of a different sort; the cost of the new way is within our present means; the experiments done already show that students will do all that may be required of them; and classes of two hundred or more can be carried through extended laboratory courses with perfect administrative ease — in the past two years students of physiology in the Harvard Medical School have done nearly twenty thousand experiments.[2] The source of the lethargy lies deeper. It lies in the public belief that because anatomy was once taught chiefly from books, it should still be so taught; that the functions of living organs can be learned from books with the occasional exhibition of dead organs; that chemistry should continue to be studied in secondary schools without laboratory work, — in brief, that nature can be studied apart from nature. The public has a just contempt for men who profess to have learned disease without practical observation of the sick, — experience is conceded to be necessary here, — but the public is ready to applaud and even to compel by law the study of the same organs in their normal state by reading or hearing a description at second hand of what some third person saw. Students come from the secondary schools filled with these errors. They ask, "Why should I bother with this laborious practical work when I can get it up from the text-book in the mouth before examination?" The real drags upon progress are the failure of the secondary schools to teach science by scientific methods, and the fatal conservatism that binds teachers of medicine to a past that we should do well to forget. These venerable delusions no longer impede experts in pedagogy, but unfortunately medical teachers — and this is the last and most important reason for the persistence of the present state of medical teaching — for the most part know little of pedagogy and make no effort to comprehend the sad irony of the phrase "Hours devoted to instruction." The devoted hours do not always instruct. Medical teachers fail to see that medical treatment is "for power" and only secondarily for information. The power of dealing with nature can no more be learned from books, lectures, and a few more or less effective demonstrations than foot-ball can be learned by reading about the game and occasionally sitting on the fence a hundred feet from the eleven at practice.

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[2] Many of these experiments require the use of living tissues; such were performed on frogs only; either the brain was destroyed before the experiment, or the animal anesthetized with ether.

If it be replied to these strictures that a system which produces so many able physicians and good citizens cannot be much in need of improvement, I answer that the men of talent veil the defects of the mass. They owe much to themselves; genius will thrive on the intellectual diet that stunts the merely industrious man. The average student does not build upon a sound foundation. He knows little anatomy, less physiology, and still less chemistry, and even his training in practical medicine has to be supplemented where possible by post-graduate work in a hospital. On the whole it may be said that his industry has been largely misdirected. The figure he makes in the world would be much worse than it now is were it not that the errors of the first half of the medical course are somewhat atoned by the latter half, which is devoted to practical medicine. The student of practical medicine is nowadays frequently in contact with patients. This part of his education, except for a few brilliant pretences, such as the operations done in the "surgical theatre" before large classes, rests upon a much sounder basis than his instruction in physiology and anatomy. Further, the instructors in the great medical schools are for the most part men of learning, force of character, and devotion to public ends; contact with such men gives the student a high standard of achievement. Yet, important as these influences undoubtedly are, they by no means compensate for the lack of thorough grounding in the basal sciences.

The picture I have drawn of the instruction in physiology in medical schools will not be challenged by teachers of that science. The sense that our methods of instruction neither develope nor much inform the mind is general. It is time that discussion of the difficulties and the way to remedy them should also be general. Physiology is the most highly developed rational discipline in medicine,— not a merely descriptive science like anatomy,— and is well adapted to train the mind in scientific procedure, in the setting of problems for research, in the criticism of methods and results, and in the tests which lay bare shallowness,— matters of great moment to men who shall practise an applied experimental science in the midst of quackery, illusion and pretence. Careful inquiry should therefore be made to determine how far the defects of instruction can be remedied with the means at our disposal. The problem is, How far can the correct theory be realized in practice? To what extent can medical students of physiology be taught in the manner in which men are trained to be professional physiologists? Evidently physiologists are likely to study their own subject in the most profitable and labor-saving way.

Much can be done to reconcile theory to practice, but not everything. The size of physiology has broken it into specialties. Even professional physiologists can no longer have personal acquaintance with the whole subject or even a relatively large part of it. The truth of this will be obvious when it is remembered that since January 1, 1894, more than three hundred researches have been published on the physiology of the heart alone. To a considerable degree the physiologist himself must acquire his information from reading the work of others. It would therefore be idle to expect the student of medicine to get a personal experimental knowledge of the whole subject. He has but a year for physiology and must share that time with anatomy. Grave economic laws demand this time shall not be lengthened, and the day of self-support postponed. The time which he now has must be used chiefly for training and not chiefly for the acquisition of facts, as at present, and this training must follow the lines laid down by physiologists for their own development.

The way of the physiologist is not peculiar. The method of getting a real education is the same from the kindergarten to the specialist. The principle is to train "for power," to use President Eliot's phrase, and not primarily for information. Deal so far as possible with the phenomena themselves and not with descriptions of them. Use as the basis of professional instruction the facts and methods which shall be used by the student in earning his living. Teach the elements by practical work. Associate facts which the student can observe for himself with the facts which he cannot observe. Control the progress of the student, remove his difficulties, and stimulate him to collateral reading by personal intercourse in the laboratory, by occasional glimpses of the researches in progress in the laboratory, and by daily conferences or seminaries. Give the student careful descriptions of the method of performing his experiments, but require him to set down the results for himself in a laboratory notebook, which, together with the graphic records of his experiment, is to form a requirement for the Doctorate. Choose one sufficiently limited field in which the experimental work shall be thorough and comprehensive, affording a strong grasp of that special subject. Add to this the typical, fundamental experiments in other fields.

When the student has come thus far, let him choose one of several electives affording advanced training in the physiology of the medical specialities, such as opthalmology, laryngology, the digestive tract, the nervous system, etc. These courses should be thorough, should contain the physiology required of the best specialists, and above all should deal with nature directly. For example, in studying the physiology of the stomach, the gastric juice should be taken with the stomach-tube directly from the human subject, and not obtained by adding hydrochloric acid to scrapings of the mucous membrane of swine. This special instruction should be directed by distinguished specialists. Thus the student will be brought into contact with that which will interest him most, the everyday methods of the best physicians, and the specialist will keep his own foundations in repair. It is in connection with these courses that didactic lectures should be given. Up to this point in his work, the student is not ripe. Let there be one to four lectures of not more than forty-five minutes, the subject very limited, so that each set shall present all the existing knowledge on the subject. The purpose of these lectures is to show the student the historical development of scientific problems, the nature of scientific evidence, and the canons of criticism that shall help him to sift the wheat from the chaff of controversy. Lectures of this kind cannot profitably be given by men who have not made experimental investigations in the subject of the lecture; so far as practicable they should be given by the specialists who advise the physiological staff concerning the special courses.

Each student should be required to present one written discussion of some very small and sufficiently isolated thesis, giving the work of the original investigators, together with any observations the student has made for himself. The way of dealing with the sources at first hand will thus be learned.

The student's reading should be correlated strictly with his practical work and should be done in the laboratory in connection with that work. It should not be memorizing, as at present, but the study of graphic records, physiological-anatomical preparations, and other physiological material, with the aid of the textbook. The corrections necessary to bring the book up to date and to correlate it with the practical work can be furnished in printed or mimeographed notes.

Such are the lines along which sound theory directs that the teaching of physiology in medical schools should proceed. With such a training the student can safely find his way through the constantly augmenting horde of facts and draw vicarious profit from those who are face to face with the mysteries of nature. Such instruction meets also the needs of men intending to make a profession of biological sciences other than medicine. It will be observed that the course offers (1) thorough experimental acquaintance with one field, say the physiology of nerve and muscle, giving the point of view, the general physiological method, training in technique, a basis of analogy, adequate knowledge of one living tissue and thus the elements of all; (2) the fundamental elementary experiments in the remaining fields; with the key which the first course gives, these will unlock much; (3) thorough experimental acquaintance with one special subject; (4) various complementary gains, of which may be mentioned experience in reaching the original sources and in marshalling facts, a certain degree of skill in the methods used by practitioners, direct correlation between physiology and practical medicine. Much might be said of the value of this group, particularly of the correlation just mentioned, but we must hasten on to the demonstration of how these ends are to be attained practically.

The first problem to be solved in planning instruction is whether the student's time is to be given wholly or only in part to the subject taught. Men in training for professional physiology commonly concentrate their energies for a sufficient period on this one subject; and this is regarded as the most economical way of mastering any science, for the ground gained by one day's work is still fresh in the mind when the next day's work begins, and continuity of thought is not disturbed. The plea that the instruction in one subject should be broken by the injection of other subjects in order that the instruction in each may have "time to sink in" need not be entertained; experience shows that much of it sinks in so far that it cannot be got up again without the loss of valuable energy. A more serious objection is that the method of continuous application is highly fruitful in the case of men of exceptional powers, who are keen in spite of protracted effort, but is wasteful for the average brain, which is fatigued and unreceptive after some hours of unremitting labor. The truth of this must be allowed, but the objection does not apply to wide-ranging sciences such as anatomy and physiology, which are not narrow, hedged-in areas, but which consist rather of broad and diversified domains composed of many contiguous fields, the varied nature of which is a perpetual refreshment. In practice the student of anatomy may divide his time between general anatomy, descriptive human anatomy, surgical anatomy, histology and embryology, all of which are now taught in the medical curriculum, and the student of physiology may pass from general and special physiology to physiological chemistry, thus resting the mind without interrupting the continuity of effort essential to instruction that must be both rich and frugal.

I would propose, then, that the first year in medical schools be divided equally between anatomy and physiology, the first four months being given to general anatomy, descriptive human anatomy, histology and embryology; the second four to physiology and physiological chemistry, studies which cannot be pursued without a knowledge of anatomy.

In accordance with the principles already outlined, the instruction in physiology should be divided into three parts. Part I, of five weeks' duration, should consist of a thorough drill in the physiology of nerve and muscle, the hours from 9 to 11 being devoted to experiments, the hour from 11 to 12 to study of materia physiologica (physiological preparations, graphic records, etc.), and the time from 12 to 12.45 to a conference or seminary, which should be part lecture, part recitation. In the conference the bearing of the experimental work just done should be developed by systematic progressive questioning accompanied by running comments, to clear up any possible fog. A brief account of other experiments which add to the truth established by those which the student has done for himself, but which are too complex or too protracted to lie within the student's powers, should be brought in here.

Part II, of seven weeks' duration, should comprise carefully-arranged fundamental experiments giving in turn the elements of each field in physiology except that of nerve and muscle, which has just been studied. As before, the whole class works from 9 to 11 upon experiments, from 11 to 12 studies all possible means of illustrating the subject of the day, and from 12 to 12.45 attends the conference or seminary. In the forty-two days covering this part of the course instructors who find the mixture of lecture and Socratic method unsympathetic may abandon their questioning and fill the time with their own remarks; even such instruction would be far more fruitful than the present lectures, for the students would have had experience in anatomy and would be well grounded in experimental physiology, through his work on nerve and muscle, before the talk began; but the seminary is much more effective than the lecture.

In Part III, covering the remaining four weeks of the term, the instruction is divided into special courses on the physiology of the eye, ear, larynx, digestion, the spinal cord, the innervation of the heart, etc. Each course should consist of experimental work from 9 to 11, the study of preparations and other aids from 11 to 12, and a conference from 12 to 12.45. Each course should be long enough to include all the practicable experiments that should find a place in a systematic, thorough study of the subject. The number of such experiments, and hence the length of the special courses, will naturally be very different in the various instances; thus experimental physiology of the eye will occupy more time than the physiology of the larynx. As many courses should be given at one time as there are instructors in the department. The student may elect the subjects that most interest him, but must choose a sufficient number to occupy him during the entire four weeks of instruction.

The afternoons of the days on which physiology is taught are devoted to physiological chemistry.

After this brief yet comprehensive glance at the scheme of instruction, let us consider the question of ways and means. Let us suppose that the number of students in physiology is two hundred. Experience at Harvard shows that it is of advantage to have the men work in pairs; indeed, many of the experiments in physiology cannot be done by one man alone, because the necessary manipulations require an additional pair of hands. Thus one hundred sets of each apparatus must be provided for Parts I and II of the above course, in which the students all do the same work at the same time. In the elective subjects the number of sets is much less, first, because the number of students in any one subject is relatively small, and, secondly, because the character of the work permits a method of rotation to be applied. Expensive apparatus, as the ophthalmoscope or the perimeter, can be provided in sets of four, and the section divided in such a way that while four pairs of men work with the opthalmoscopes four others can work with the perimeter, and so on. Much of the apparatus for the special courses is that in use by physicians in everyday practice, and may be obtained in small quantities from the manufacturers for little or nothing, as the advertisement of their product by its selection to serve as a model in the university is a valuable consideration. The cost of the remaining apparatus for two hundred students should be fully covered by fifty dollars[3] for each pair of students, or five thousand dollars for two hundred students. Much of this apparatus is permanent, some will last for twenty years or more without renewal, and some is likely to require frequent renewal. If it be assumed that the entire plant must be replaced every ten years, surely a liberal estimate, the entire cost of apparatus, including simple interest at four per cent. on the original investment of five thousand dollars, would be met by setting aside three dollars a year from the fees of each student — surely a sum within the reach of any large medical school. It is assumed that one piece of each kind of apparatus shall be made by the laboratory mechanic, and bids for a hundred duplicates taken in the open market.

The floor-space required for two hundred students working at the same time is three thousand square feet. It would be of advantage to have this space divided into five adjoining rooms, each accommodating twenty pairs of students under a separate instructor, who shall supervise the work and conduct the conference, rotating in these duties with the professors and other instructors, so that all students shall have in turn the special advantages attaching to the personality of each instructor. The desks and other necessary fittings are simple, and are certainly not more expensive than those now placed in chemical laboratories.

The number of instructors for one hundred pairs of men in a thoroughly systematic course need not be more than five. Experience shows that students prefer to work for themselves largely; they rely upon the printed directions, and need only an occasional hint from the instructors. The ranks of the corps of instruction can be filled by young physiologists. This method was introduced in the Harvard Medical School two years ago, at the suggestion of the present writer, and bids fair to be as successful there as it has proved in other institutions. In return for the time given to instruction, these men receive first of all the privilege of instructing. Well-conducted laboratory classes afford extensive practice in teaching, and at the same time the great number of experiments inevitably and almost insensibly imparts a varied knowledge of the fundamental phenomena of the science; further, these instructors are provided free of cost with the means of research; and at least half their time may be given to investigation; finally, even the instructors of the lowest grade receive a sum of money, which, if not sufficient to keep the wolf from the door, is at least enough for a bare subsistence during the collegiate year. That able specialists would be willing to advise, and even to direct, the special courses in practical subjects does not admit of doubt; they would save time thereby, for these same specialists are obliged to instruct these same students in ophthalmology, laryngology, and the like, in the third or fourth year of medical study, and, as might be expected, the students have long before that time forgotten the facts which they memorized from the text-book shortly before the examination in physiology, and must therefore reconstruct, at the expense of the specialist, the foundation of sand upon which his teaching is to rest. Besides the teaching staff, the whole time of a laboratory man-servant and a scrub-woman, and a part of the time of a competent mechanic will be required.

Instructors saturated with the *ancien régime*, on reading these proposals will exclaim, "Why! you have made the lectures merely explanatory of the experiments." Precisely, that is the chief excellence of this plan of instruction. They will say, too, that some chapters of physiology are based on experiments too difficult and time-consuming for student instruction and which, therefore, will not fall within the plan; of this sort is the complicated balance which is struck between the income and the outgo of the body for the purpose of studying the fate of the starches, fats, and other constituents of the food. The reply is that in these instances the methods pursued by the original investigator, his results, and his conclusions are to be placed before the student during the hours provided for the study of physiological material, and then made the subject of a conference, where the view formed by the student from the study of the original source can be corrected, if necessary, by the view which the professor has himself formed exactly in the same way; the meat on which professors are nourished is just the diet for students — it only need be put where they can get it. But subjects of the nature just discussed develop little "power" and should be allowed no more time than is sufficient to give the point of view, the method, the more fundamental results, and the places where additional information may be found. Finally, we cannot expect to escape the phrase watering-pot, as Bismarck called it. We shall have urged against us certain sanctified expressions, such as the accumulated experience of centuries. Let us answer that the system by which we now teach anatomy and physiology began as a makeshift and has become a dogma. It is sanctified by some centuries of repetition, not of experience, for systematic experiments in medical pedagogy have rarely been made; the oracles have been severe with those who meddled with the tripod.

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[3] These estimates are based on sums actually paid for the apparatus now in use by students in the Laboratory of Physiology in the Harvard Medical School.

The force now making for reform is irresistible. It is nothing less than the conviction that the mass of knowledge in every department of medicine is grown so huge as to overwhelm both professor and student. The only refuge lies in a thorough mastery of the scientific method. The medical student must acquire power rather than information. Only thus will he be able to hold a steady course through the baffling winds and cross currents of a veritable sea of knowledge.

HYSTERICAL NEURASTHENIA.[1]

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THE text of my paper will be found in a question of a certain examination paper given to the students of the Harvard Medical School last June (1897) by a distinguished professor of the School. Question: "Differentiate between neurasthenia and hysteria."

This question by chance attracted my attention, and I wondered whether the distinguished professor felt quite certain he could give reliable rules for differentiating the two neuroses, for the matter of it is one which has for a long time been the object of my study, and given me much difficulty in finding a satisfactory answer. I have been for some time of the conviction that much that passes for neurasthenia is not neurasthenia at all, but allied neuroses, and a very large part is really hysteria. The principal difficulty encountered in the study of these neuroses is in establishing any absolute criterion of what is hysteria and what neurasthenia. It is not always possible to draw a sharp line of distinction between these two affections, for while hysteria is not neurasthenia, I am convinced that clinical neurasthenia may be pure hysteria and not a mere complication.

The general notion amongst neurologists is, I think, that hysteria always means stigmata, and consequently "no hysteria without stigmata," and conversely, "no stigmata without hysteria."[2]

But it is well to bear in mind, that, though we continually refer to the stigmata of hysteria, there is no settled agreement as to what shall or shall not be regarded as stigmata. Any objective sign, or all the manifestations, subjective and objective, of hysteria might be called stigmata, and under such an interpretation, of course the presence of any symptom would be equivalent to hysteria; but ordinarily by stigmata reference is made to the more pronounced objective signs and psychical phenomena; but there is, again, absolute agreement as to which of these shall be called hysterical stigmata. About some there is, of course, no question: paralysis, anesthesia, hystero-epileptic attacks, concentric limitation of the field of vision, marked ataxia, tremor and chorea are always accounted as stigmata, and reference is usually made to one or more of these physical signs with some others; but when we have to do with minor objective signs, like slight muscular weakness, mild tremor, visceral and vasomotor disturbances, it is not always clear whether they are to be included as stigmata or not, inasmuch as they may be also indicative of other conditions, and especially of pure neurasthenia; nevertheless, they are also phenomena of hysteria. I have not been able to find any statements by writers on the subject as to precisely what manifestations are to be regarded as stigmatic.

A neurasthenic condition, as a complication of hysteria with stigmata is well recognized, and perhaps occurs in the great majority of cases, when it is commonly spoken of as hystero-neurasthenia, but hysterical neurasthenia, as a distinct form of hysteria, is not mentioned by any of the principal modern works that I have consulted. In saying this the sense in which I use hysterical neurasthenia is this: we have hysterical paralysis and anesthesia, simulating organic paralysis and anesthesia; chorea, ataxia, asthma, etc., mimicking the corresponding diseases, but hysterical neurasthenia, simulating and mimicking true neurasthenia, curiously enough, does not seem to have been distinctly recognized as a clinical entity, although everything that we know about hysteria would suggest that such a condition must exist and should be common. Pitres, in his exhaustive work on hysteria, emphatically lays down the principle that hystero-neurasthenia is a combination of two distinct and separate diseases, and although a description of a very large number of diseases mimicked by hysteria is given by him, neurasthenia does not find a place. The same is true of that of Gilles de la Tourette; and Charcot also only speaks of hystero-neurasthenia, in which the presence of stigmata like anesthesia and paralysis are distinguishing signs. Preston (whose book is one of the latest on hysteria), and Floyd and Dercum also do not seem to recognize this form of hysteria. Nevertheless, I am inclined to believe that in practice many practitioners tacitly recognize that hysteria may have a neurasthenic type, and very likely a more thorough search of the literature than I have given would show its definite recognition. At any rate, I think I am right in saying that this type is not recognized by most text-books, and yet every physician of experience was familiar with hysteria without these obtrusive manifestations which are now called stigmata, before Charcot and his pupils had, by their brilliant studies, given such prominence to the objective manifestations. The tendency at present is to leave too much out of sight those forms of hysteria in which paralysis, anesthesia and similar troubles are not observed.

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[1] Read before the Society for Medical Improvement, April 4, 1898.

[2] It is true that a distinction is sometimes made between grand hysteria and little hysteria, but this distinction is an artificial and arbitrary one, and is made more as a matter of convenience than upon scientific differences. There is no precise mode of determining what shall or what shall not be included in grand hysteria. For instance, hystero-epileptic attacks, paralysis and anesthesia would undoubtedly constitute a grand or grave hysteria, but when we come to the minor objective manifestations, like tremor, aphonia, perhaps ataxia and choreiform movements and uncomplicated local spasms, there is nothing upon which we can base a distinction between major and minor hysteria. However, it is unnecessary for our purpose to dwell upon this point here.

Now the two theses which I wish to maintain are that *severe (grave) hysteria without stigmata is very common, and, second and in particular, hysterical neurasthenia is one of the commonest varieties of this disease and includes a very large part of the cases that ordinarily go under the name of neurasthenia.* In other words, just as we have hysterical paralysis and hysterical anesthesia, so we have hysterical neurasthenia, simulating and mimicking true neurasthenia. The corollary of this is, that much that goes under the name of neurasthenia is hysteria. The recognition of this is, in my opinion, very important because of the bearing which it has upon prognosis and treatment. Unless recognized, the successful treatment of many so-called cases of neurasthenia is apt to be difficult, if not impossible. The reason for this form of hysteria not having been sharply differentiated as a clinical entity is the difficulty of satisfactorily demonstrating its pathology. This difficulty must be conceded. When objective stigmata like paralysis are present, we have signs, the true nature of which can be readily recognized and distinguished from similar manifestations occurring in other conditions, but the absence of obtrusive objective signs in neurasthenia, and the prominence of subjective symptoms render the distinction difficult. Nevertheless, we have what perhaps might be called circumstantial evidence sufficient for the purpose.

While hysterical neurasthenia may be called a pseudo-neurasthenia, it would be very wrong to view as hysteria all pseudo-neurasthenic cases. As a purely tentative and preliminary classification, I would suggest the following as different types of pseudo-neurasthenia:

(1) Habit neuroses, in which the symptoms mostly represent the persistence of manifestations of previous disease long since subsided.

(2) Neuroses from pure auto-suggestion; this would include certain types of phobo-neuroses.

(3) Intoxications, as from gout, uremia, improper metabolism, etc.

(4) Hysterical neurasthenia.

In order that it may be understood what sort of cases I include as hysterical neurasthenia, I will give a brief synopsis of five cases, taken from a much larger number that might easily be given:

Observation I. Miss A. W., heredity bad. Present illness of long duration. Symptoms: marked insomnia, headache, pain in the side, backache, early fatigue after physical and mental exertion, also paresthesia of scalp, followed by soreness. Pain in the side and backache are caused by exertion. Riding in the street cars causes pain in the side, which then goes up into the head and is followed by shooting pains. Noises completely unsettle her, make her nervous, and she then cannot fix her attention for reading, writing or sewing. Has crying attacks, especially the result of noise. During examination broke down, crying, etc. Limit of ability to walk: one mile on good days, bad days cannot walk at all. Physical examination: well developed and nourished, no objective signs of any kind.

Observation II. Miss L. W. D., about thirty years of age. Present illness of some two years' duration. Symptoms: tingling feeling all over body; crawling and stiff feeling around neck, as if she was going into a fit; feeling of pressure and tightness in back of head; night sweats; feeling of exhaustion coming on often suddenly, and often after eating, talking, exertion, and accompanied by sweating of forehead; pain in the back; crying spells; dyspepsia. Not much physical fatigue; can walk about one mile without fatigue; three miles causes great exertion. Present illness apparently originated in some sort of acute hysterical attack five years ago. Then total suppression of urine for five days; present trouble has continued since that date, but symptoms more severe during the past year. Physical examination: well developed and nourished, picture of health, marked evidences of being subject to external and internal suggestion.

Observation III. Young woman, married, twenty-two or twenty-three years of age, with neurotic antecedents. Present condition of several years' duration. Health poor generally; dyspepsia; unable to eat more than the slightest quantity of food; irritability and torpid action of the bowels alternating with each other; great physical fatigue; very marked symptoms of pseudo-angina pectoris, which always caused much alarm. The fright from these attacks induced, in turn, numerous symptoms. The cardiac attacks were brought on by physical exhaustion, mental irritation, and indigestion. In consequence of last, patient even refused to put water into her stomach. Under the Weir-Mitchell treatment patient was taught to take and digest large quantities of food, and her physical condition improved generally, but she did not regain strength, and immediately broke down again on her restoration to her former habits of life.

Observation IV. Mrs. E., about thirty-five years old; naturally a strong, healthy woman. Well up to one year ago. Has led a fast life. Previous to breaking down, one year ago, had been drinking hard for two years. Finding herself becoming used up, broke off drinking entirely. About that time began to suffer from the same set of symptoms she has now; has been better off and on. Patient, when first seen, was in bed, where she had been for about ten days. Complained of palpitation, which she described as due to some supposed trouble of the heart, for which she had been treated. Also had "nervous feelings," the latter said to resemble the feeling from a faradic battery "that went all over her." These symptoms were very disagreeable, and alarmed her. Complained also of muscular weakness, "goneness," marked sleeplessness, general numbness and dizziness; unable to walk but a very short distance, because of prostration. Physical tire brought on attacks of the above symptoms. Patient was up late at night and obtained very little rest and sleep. Had been treated during the past year by various doctors. One had treated her for a long while for heart disease. Physical examination showed her to be a strong, healthy-looking woman, good color, heart normal, no objective signs. Told to get up next day and come to the office in a carriage for electricity. Patient considered her condition so serious that she was arranging to break up her household and go into the country.

Observation V. Mrs. S., thirty-five years old; married; has the appearance of being a strong, healthy person, with good color, but states that she never had been strong and was always easily tired. Eleven years ago, while going down front steps, slipped and fell, striking her back; fainted. Ever since has had a pain in the middle of her spine. This pain has increased of late, until now it is difficult for her to do any work. Is wearing a spinal corset for this, and is supposed to have some sort of lateral curvature. Has had subjective numbness of the whole left side, off and on, for eleven years. These symptoms antedate the fall. Feels tired all the time; lack of energy; little things worry her; has sleepy spells during the daytime, when she lies down and sleeps soundly; almost impossible to keep awake at such times; walking, housework and driving tire her and make her back ache. This pain is "terrible"; feels dizzy at times, as if falling backward; certain positions in bed make her feel as if turning a somersault backward; nausea at times; has "gone," faint feelings. Patient says that sometimes, on waking from these sleepy spells, she knows what is going on around her, but cannot speak. Mother and maternal grandfather are said to have had "fits" (?) (no spasms). Number of others died of consumption. Physical examination: No objective symptoms, except great tenderness of the spine.

Mixed forms made up of both neurasthenia and hysteria of course occur. It is pertinent to know that the last three of the above accounts are here given almost *verbatim* as written some years ago, without any theory whatsoever in mind regarding the pathology of the affection. These are, therefore, unbiased accounts, so far as this inquiry is concerned.

It will be asked, On what grounds do I assume that these cases do not represent true nervous "exhaustion?" Putting aside my personal opinion, so far as it is based on an intimate knowledge of the circumstances of each case, I think the final history of them is sufficient to show that they could not have been true neurasthenia, and must have been one of the pseudo-types.

Case I improved at once after the first application of static electricity. Her symptoms rapidly left her, and in the course of a few weeks she was well.

Case II, although of two years' duration, improved still more rapidly and was free from neurasthenic symptoms after a few applications of static electricity, extending over a week or ten days.

Case III, after several years of invalidism and all the usual methods of treatment, including rest cure by myself without effect, was cured in two weeks by "Christian Science."

Case IV, after an illness lasting a year, reported herself free from symptoms after two applications of static electricity.

Case V, after an invalidism of eleven years, was free from symptoms after eight applications of static electricity, extending over two or three weeks.

I do not believe that it is possible that such rapid improvements or cures could be effected in true neurasthenia, or brought about by the psychical methods employed.

I doubt, however, if Cases IV or V were as well as they claimed to be. Further observation would probably have shown either relapse or residual symptoms. But long-continued observation showed that the results in the first three cases were permanent and substantial.

I would not have it inferred from these results that hysterical neurasthenia is always thus easily amenable to treatment, on the contrary, it may be as obstinate, or more obstinate, than other forms of hysteria, and I think is particularly liable to relapses. I have cited these particular cases because the rapidity of the cure may be taken as evidences of the pathology.

The difficulty of determining the real pathology of cases of this kind, that is, whether they are or are not hysteria, is increased, as I have said, by not knowing exactly what is hysteria aside from its manifestations. Pitres, in default of the possibility of giving a definition of hysteria, contents himself with enumerating the characteristics of its manifestations in five propositions. These five characteristics I shall presently make use of, but I think also some confusion has been due to the non-recognition of the fact that many of the symptoms of each neurosis under discussion are accidental and the result of external influence, and not essential manifestations of the disease. This is an important fact in the symptomatology and is particularly obvious in traumatic cases, in which local and emotional effects of trauma give a distinct picture to the disease. For example, many local pains are merely fortuitous circumstances, and originate in bruises and other local injuries. Likewise, the nausea, tremor, and cardiac and vasomotor disturbances which originated in and were at first the expression of fright; all these symptoms later persist as psychical phenomena after the subsidence of the originating causes. Hence they are mere fortuitous circumstances in the sense that they would not have existed, notwithstanding the presence of the hysterical state, excepting for the accidental causes. The same effect may be observed in so-called spontaneous cases; for instance, a patient with hysterical neurasthenia is unable to take exercise on account of pelvic pain, which she has been told is due to uterine disease, and for which she is being treated. This immediately subsides when she is assured that it is a habit pain, and she can take any exercise she pleases without doing harm. Another patient suffers from quite a severe pain of several years' duration, which can be traced to having worn a pessary some years previously. Such symptoms are plainly purely accidental symptoms in the course of the disease. In the absence, then, of any definite criterion for hysteria, and of any definite group of symptoms which alone can be called stigmata, the evidence for the existence of neurasthenia as a particular type depends upon the following circumstantial evidence:

(1) The so-called neurasthenic symptoms resemble, in their course and behavior, the accepted symptoms (stigmata) of hysteria. The five characteristics of hysteria have been summarized by Pitres as follows: "Hysteria is a neurosis of which the very varied symptoms have the common characteristics:

"(*a*) Of not being dependent on organic lesions.

"(*b*) Of being provoked, modified or suppressed by external influence or by causes purely psychical.

"(*c*) Of co-existing in variable numbers.

"(*d*) Of succeeding one another under different forms and at different periods in the same subjects.

"(*e*) Of not reacting seriously upon the general nutrition and on the mental state of the patients who are attacked by it."

The symptoms in hysterical neurasthenia exhibit these characteristics.

(2) Many cases begin as neurasthenia, develop later marked objective stigmata, like paralysis or anesthesia, which later, in turn, disappear and leave the pure neurasthenic symptoms behind; or marked neurasthenic symptoms may be accompanied by the more slight stigmata above referred to, which, not being obtrusive, escape attention, but which are distinctly manifestations of hysteria. Or, neurasthenic symptoms occur in conjunction with typical hysterical stigmata, under circumstances that allow only of the interpretation that the neurasthenia is not a complication but a manifestation of the hysteria. As such cases indicate that hysteria may, and does, directly or indirectly, cause neurasthenic symptoms, therefore these symptoms by themselves without the stigmata would be perfectly compatible with this pathology.

(3) The disease, if not of too long duration, may sometimes be subject to comparatively rapid cures, or

to cures from influences which would not affect neurasthenia. Examples of this have already been given.

(4) Cases of hysterical neurasthenia are apt to be open to suggestion, auto or external, in an exaggerated way, as is characteristic of hysteria, but which is not so marked in true neurasthenia.

Hysteria is a state, just as sleep, hypnosis and the waking-life are states. The symptoms in part are a direct consequence of the state (for example, paralysis, anesthesia, double personality) and in part depend upon the effect of environment, that is, accidental causes. These latter are not the essential manifestations of hysteria in the sense that pain is an essential manifestation of neuritis, or anesthesia of tabes.

The study of hysteria as a pathological state is beyond the scope of this paper, but I propose to offer a critical study of a case [3] of hysterical neurasthenia from the point of view of the genesis of the symptoms, and the differentiation from true neurasthenia. I think it will be plain that the symptoms in their behavior and course correspond with the five characteristics laid down by Pitres, while the effect of accidental causes in producing fortuitous symptoms will be apparent. Such a study will enable us, I think, to understand the genesis and the reason for persistence of many of what I have called the fortuitous symptoms. In most cases it is possible to make out that of an apparently chaotic mass of symptoms many have developed and persisted as the result of certain definite causes and laws. Amongst these last the following may be enumerated as the chief factors in the etiology of the fortuitous symptoms:

(1) Accidents involving trauma or psychical shocks, toxic diseases, like grippe, inflammatory processes — in fact any pathological process. Nervous manifestations, once started in this way, persist under the influence of the mind.

(2) A conspicuous mode in which the mind acts upon the body is by auto-suggestion in the form of apprehension or expectation. That is, for example, the patient has the apprehension or expectation that if she walks she will become tired or have a fainting fit; if she eats food the act will be followed by indigestion and perhaps palpitation; that if she has a headache and attempts exercise there will follow trigeminal neuralgia, spinal irritation, and so on, and consequently, as the result of an auto-suggestion of this kind, these symptoms follow as a necessary sequence when the button is pressed, or without metaphor, when the various conditions are fulfilled.

(3) Or the suggestion may come from without, especially from the medical attendant, who, over-cautious and uncertain himself, warns the patient that she has heart disease or pelvic disease, or is not physically strong enough to do certain things. The accepted symptoms then follow, and by degrees a mass of symptoms becomes cultivated in this way.

(4) Many symptoms are simply the persistence of the physical expression of emotion.

(5) It follows that most of the sensory symptoms, including the sense of fatigue, have a purely psychical origin and are, therefore, quasi-hallucinations. That the feeling of fatigue may have a purely psychical origin, may be a pure hysterical stigma, and does not represent real exhaustion, is an important fact that should be recognized. This symptom may be cultivated by injudicious treatment.

(6) As a result of all these influences, many symptoms become mere habit symptoms.

(7) Many symptoms are the result of a simple lack of inhibition.

Clinical Department.

A CASE OF GONORRHEAL ARTHRITIS, TREATED BY FREE INCISION AND IRRIGATION OF THE KNEE-JOINT.

BY JOHN HOMANS, M.D.,
Surgeon Massachusetts General Hospital.

R. S., age twenty-five, single, entered the medical side of the Massachusetts General Hospital April 11, 1898.

Habits. — Alcoholic excess (none for ten weeks). Smokes to excess. Use of tea and coffee moderate.

Past History. — Clap four weeks ago, left epididymitis. Two weeks ago discharge ceased, under medication; running began again three days ago. Seven days ago some pain and stiffness in both knees, persisted in left knee. Three days ago left knee began to swell and grow painful suddenly; was obliged to give up work and take to bed. Feverish; no chill. Pain and swelling have increased. Urine thick and red; fair amount. Glands in groin slightly enlarged and tender. Left knee swollen, very tender, not red. Bursa in front of patellar tendon stands out plainly. Slight discharge, muco-purulent, can be squeezed out of urinary meatus. Urine, normal, neutral, 1,011; albumin, faint trace; no sugar; sediment, squamous epithelium and few leucocytes. Urethral discharge shows few free biscuit-shaped diplococci, rarely a leucocyte.

April 15th. Urine alkaline to-day. Patient more comfortable; much less pain; swelling diminishing.

April 20th. White blood count corpuscles 10,900. Patient has been kept awake for the past four nights with pain in knee. Swelling larger again. Transferred to surgical side for operation.

April 22d. Prepared for operation.

April 23d. *Operation.* — By J. Homans, in amphitheatre; patient put under ether. Incision through skin, two inches long, over outer edge of patella, dissection being carried down to capsule of knee-joint. Capsule opened and ten ounces of thin brownish seropurulent fluid evacuated. Cavity explored with finger and several fibrinous flakes turned out. Joint thoroughly flushed with normal salt solution at a temperature of 120° F. Sterile wicks passed through and cavity wiped out.

A second douching was then given, a large gauze wick drawn through, and two provisional silkworm-gut sutures put in place. Outer ends of wound sutured with silkworm gut; dry dressing with compression. Ham splint.

Operation. — Opening of knee-joint. Disease, gonorrheal arthritis.

April 24th. Morphia one-eighth grain last night for pain. Dressing not changed.

April 26th. Dressing changed. Considerable diminution in amount of synovitis since first put up. Clean. Slight serous discharge on removal of wick. Feels more comfortable.

April 29th. Temperature normal. Leg perfectly comfortable. Dressing not taken down.

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[3] Withheld from publication.

Report of Culture. — No gonococci nor tubercle bacilli.

May 3d. Perfectly comfortable.

May 4th. Redressed. Small granulated wound still remains. Dry dressing.

May 10th. Discharged well.

Recent Literature.

The Principles and Practice of Medicine, Designed for the Use of Practitioners and Students of Medicine. By William Osler, M.D., etc. Third edition, entirely revised and enlarged. New York: D. Appleton & Co.

This edition of Dr. Osler's "Practice of Medicine" succeeds its predecessor at an interval of three years. The book has made an assured place on the shelves of the best class of professional readers and users, whether practitioners or consultants. It was a good book before, and the author has made it a still better book now. There are some new articles, many have been rewritten, and into others new matter has been incorporated. The section on Diseases of the Nervous System has been rearranged.

There are still some minor defects of detail — specks in a pot of precious ointment — which have escaped the keen revisionary eye, and which another revision will doubtless remove. Who or what can abide the last extremity of regard for what is done amiss?

The volume is compact, of a convenient size for holding in the hand, not too bulky. The paper and print are excellent. Taken altogether this is one of the very best books of its kind extant.

The Medical Record Visiting List, or Physician's Diary for 1899. New revised edition. New York: William Wood & Co.

We are glad to welcome another edition of this now familiar visiting list. It is of convenient size to carry in the pocket, well arranged for the object for which it is designed, and rich in information regarding medical matters easily forgotten. We can recommend it cordially to those physicians whose practices warrant the use of such an aid.

The Care of the Baby. A Manual for Mothers and Nurses, containing Practical Directions for the Management of Infancy and Childhood in Health and in Disease. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, to the Methodist Episcopal Hospital and to St. Agnes' Hospital, Philadelphia; Member of the American Pediatric Society and of the Association of American Physicians. Second edition, revised. Philadelphia: W. B. Saunders. 1898.

Dr. Griffith has written one of the best books on this subject which has yet appeared.

In his second edition he has enlarged the work considerably, and with his usual painstaking and careful precision has submitted it to a complete revision. The book is a very practical one, and covers thoroughly what it undertakes to do on its title-page.

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ANNUS MEDICUS MDCCCXCVIII.

During the year 1898, owing to the manifestation on the part of this country and European nations of an increased tendency towards territorial expansion, particularly in the tropical regions of the world, and to the many problems relating to tropical diseases and the acclimatization of American and European soldiers in the countries which rightly or wrongly have been brought under their military control, it is but natural that the subject of tropical medicine should have assumed a prominent place in medical thought and literature.

The Spanish-American War on this continent, and the Anglo-Egyptian expedition to Khartoum, not to mention French and German activity in Central Africa and the Soudan, have contributed largely to this result. The important and interesting proceedings of the Section on Tropical Medicine of the British Medical Association, and the National Quarantine Convention held at Memphis, Tenn., this fall, are evidences of this trend of medical thought.

The fact that hygiene and sanitation are the most important functions of the military and civil surgeon in the tropics has been forced upon the medical profession, and it is to be hoped upon Congress and the War Department of this country.

The wonderful results attained by that gallant officer General Wood, a man thoroughly trained in medicine as well as in military affairs, in the administration of the tropical province of Santiago has given a brilliant example of what can be done in tropical sanitation by men of experience and executive ability. In other directions the year has been marked by general progress rather than by brilliant discoveries or accomplishments.

May we hope that the lessons of the year 1899 will be due less to the bitter experience of war and pestilence, and more to the results of the application of the knowledge gained by the study of the medical sciences to the cure and prevention of disease!

EPIDEMICS.

YELLOW FEVER.

As for the endemic prevalence of yellow fever in Cuba and Brazil, where in the seaport cities, at least, it is constantly present, the winter of 1897 and 1898 proved a mild one. There were remarkably few cases in the city of Rio di Janeiro, and during the week ending February 25th in Havana there were no cases of yellow fever reported, an occurrence unprecedented for many years. Throughout the island of Cuba there were very few cases reported during the early months of the year, a fact which was perhaps due to the circumstance that very few reinforcements of unacclimated troops from Spain were received, and that certain changes were made in the disposal of the troops at the military hospitals in Havana, which rendered it less likely for patients who were sent to the hospitals for other diseases to become victims of yellow fever. Between January 1st and April 21st, when the port of Havana was blockaded, in consequence of which no further sanitary reports were received until after peace was declared, very few Spanish soldiers were brought to Havana, and the disease, therefore, lacked material to feed upon.

The crowding, starvation and other unsanitary conditions which existed in Havana as a result of the blockade, and the excessive heat of this unusually severe summer season, did not increase the mortality from yellow fever in Havana to an extent nearly commensurate with the increase in the mortality from gastro-intestinal diseases. In the months of August and September in Havana there were only 43 deaths from yellow fever, while during the same period 261 deaths resulted from enteric fever, 211 from dysentery, and 586 from enteritis.

There was therefore very little yellow fever in Havana at the time of the raising of the blockade and the consequent arrival of a large number of Americans at Havana, and hence but few of them became infected with the fever. The mortality, however, among Americans attacked by the disease was abnormally high, and in 12 cases reported on November 11th by Dr. W. F. Brewer, the sanitary inspector of the port, there had been 7 deaths.

Not a few of the Americans who developed yellow fever during a return voyage from Havana during the autumn have died after reaching these shores. Conspicuous among these was the late Colonel Waring, of New York.

At Santiago throughout the year, both before and after its occupation by the United States troops, there has been comparatively little yellow fever. On July 10th, after the arrival at Siboney of the starving refugees who were released from Santiago by order of General Shafter to consume the supplies furnished by the United States and infect its troops with tropical diseases, 14 cases of yellow fever were reported. Subsequent reports gave very few cases of yellow fever either among the soldiers or civilians at Santiago, although at first there was some confusion, owing to the atypical character of the severe malarial infections which occurred, and which were not infrequently mistaken for the former disease. Malaria, enteritis and amebic dysentery proved vastly more fatal among the American troops about Santiago than did yellow fever.

The neighboring island of Jamaica, which suffered an epidemic of yellow fever during 1897, was remarkably free from the disease this year.

In order to meet the conditions which inevitably resulted from the Spanish-American War, and the transportation to and from Cuba of large numbers of troops at the very height of the yellow fever season, Surgeon-General Wyman, of the Marine-Hospital Service, early in the spring perfected plans to prevent the introduction of yellow fever from Cuba. Rigid quarantine regulations were enforced at Ship Island and Dry Tortugas, and Marine-Hospital inspectors were stationed at every point along the Atlantic Ocean and the Gulf of Mexico where troops landed or returned from Cuba.

Notwithstanding these precautions there have been two epidemics of yellow fever in the Southern States this summer, both originating on the Gulf Coast, and both of obscure origin. The first, which began in McHenry, Miss., in the latter part of May, was fortunately brought rapidly under control by the Marine-Hospital Service and the local authorities, otherwise the fact that it occurred early in the season, and many months before the first frosts were due, might have rendered it the most disastrous visitation which the country has experienced for years.

The second epidemic, which started in Franklin. La., in the early autumn, spread rapidly, resulted in paralysis of trade, government and all forms of activity throughout the state of Mississippi, and also spread extensively in the neighboring States, was cut short only by the early frosts.

Although the type of the disease was mild, and the mortality consequently light, the resulting panic was extreme, and the consequent effect upon all forms of business and the pecuniary loss were severe.

The earlier epidemic, which began on May 20th at McHenry, a town on the Gulf Coast between New Orleans and Mobile, was at first supposed to have been communicated from the Ship Island Quarantine Station, but later it was shown that this could not have been the case. The Marine-Hospital Service put in force a house to house inspection at McHenry, and established an isolation hospital. A detention camp was established at Fontainebleau, and an inspection made of all points on the Gulf and Ship Island Railway south of Hattiesburg showed that the disease was confined to McHenry, and on July 4th it was known that the coast from New Orleans to Mobile was free from infection. On July 12th the last case of yellow fever had been discharged and the detention camp closed. The epidemic was, by the energetic measures which were adopted, confined entirely to

McHenry, Miss., where twenty-two of the total of twenty-four cases occurred. One case occurred in Eucutta, Miss., and one in the country four miles from McHenry. The mild character of the epidemic is shown by the fact that there were no deaths.

Early in August a few cases of yellow fever of a mild type were reported among the United States Marines at Key West, although there was a disagreement among experts as to the diagnosis. A Marine-Hospital Service Detention Camp was established at Egmont Key, and all persons not immune were detained during the period of incubation of yellow fever. No spread of the disease resulted and it was afterward determined that these cases were dengue and not yellow fever. Several cases of yellow fever were brought to the Tortugas Quarantine Station in August on steamships from Havana.

The second epidemic of yellow fever, that at Franklin, began with a death on August 11th of a man suspected to have the disease. The supposed source of infection, which was certain old sheds and wooden buildings, was destroyed by fire. A sanitary cordon was established around the town, and all precautions taken, yet on the 23d of August a second case, this time of undoubted yellow fever, occurred. A detention camp and train inspection service were established, and most of the industries of the town were shut down. On August 31st suspicious cases were reported at Orwood, Miss., and later at Taylor, a town on the Illinois Central Railroad; these cases were soon afterward definitely determined to be yellow fever. The source of infection was not definitely ascertained. All precautions were immediately taken to prevent the spread of the disease. Early in September a case appeared at Jackson, Miss., and soon afterward at Oxford and numerous other points in Southern Mississippi, and in the middle of September a case occurred at New Orleans, La. A general exodus to the North began from all parts of Southern Mississippi and it became necessary to furnish facilities for the disinfection of coaches used for refugees at Atlanta.

In spite of the precautions taken by the State and City Boards of Health the disease spread in New Orleans, and during September appeared at numerous towns and parishes in Louisiana. On October 11th the entire States of Mississippi and Louisiana were placed under quarantine. In Mississippi the panic caused by the disease was out of all proportion to its severity. On the occurrence of the earlier cases at Natchez, although on account of the precautions which were immediately taken the danger was slight, the governor of the State and other prominent officials immediately left for the North. No business was for some time transacted at the courts or the State House. The general fright and exodus, and the interference with the transportation of supplies due to quarantine, rendered it very difficult in many instances to get supplies to the population of the infected districts, chiefly colored, who were crowded together in quarantine, no egress being allowed, so that much suffering resulted from starvation as well as from fever. The hardship to the laboring population from the suspension of industries was also great.

In Louisiana the sensible action of the State Board of Health in calling attention to the mild type of the disease, and in consequence thereof imposing less stringent regulations, and raising quarantine at the earliest possible moment, had the effect of markedly lessening the panic caused by the disease, and the consequent paralysis of business and suffering of the industrial classes.

By October 14th a light frost appeared in the lower Mississippi Valley, and consequently a rapid decline in the fever began, and by November 10th it had practically died out.

The final statistics showed that the total number of cases in Louisiana had been 1,470 with 51 deaths, a mortality of 3.47 per cent. and that the total for Mississippi was 985 cases and 63 deaths, or 6.40 per cent. Therefore the total for the epidemic was 2,546 cases and 115 deaths, or 4.68 per cent.

The towns most seriously affected were Franklin, La., where there were 607 cases, with, however, only 9 deaths, and Wilson, La., where there occurred 303 cases and 7 deaths.

In Mississippi there were 208 cases and 11 deaths in Jackson, 106 cases and 14 deaths in Taylor, 134 cases and 14 deaths in Harriston, and 100 cases with 5 deaths in Orwood.

In October the death of Colonel Waring in New York occurred from yellow fever contracted at Havana during his inspection of the sanitary conditions of that city, and declaring itself during his voyage home. On November 18th an engineer in the employ of the Nicaraguan Canal Commission, just returned from Costa Rica, died in Washington from yellow fever, which also appeared during the voyage home.

As there seemed every probability that yellow fever would be brought to Montauk Point on the transports arriving from Santiago, a thorough inspection was carried out before the troops were allowed to embark, and a second inspection before landing at Montauk, and so thoroughly was the work done that only one case of the disease was found at Montauk. This case occurred in a civilian from Macon, Ga., who was attacked while on the voyage, and died later at Swinburne Island, New York, where he was taken together with twenty sick soldiers who proved to have merely malarial fever.

In Mexico yellow fever has been more or less prevalent during the year, especially at Tampico, and it has been found necessary to maintain guards and quarantine along the Texas frontier. No yellow fever has reached the United States from Mexico and several reported outbreaks at Galveston and points on the Texas frontier were on investigation not verified.

PLAGUE.

The year 1897, as our readers will remember, ended with plague epidemic in Bombay and Poona, but declining in other districts of India. In the unfortunate city of Bombay, however, in which plague had first appeared in August, 1896, and during the autumn and winter had devastated the city, and had declined somewhat during the summer, only to reappear and again assume alarming proportions in the autumn, this recrudescent epidemic was in full blast. Never since the date of the first outbreak has Bombay been free from this disease, and in the first week in January, 1897, there were upwards of 100 deaths a day reported. In Poona also the epidemic had assumed serious proportions.

At the beginning of the year there were also a moderate prevalence of plague in Taiwan, Formosa, and a few sporadic cases in Hong Kong.

During January and February plague in Bombay constantly increased, and the danger of its importation to the Turkish Empire and thence to Europe was recognized to be real.

In order to avoid the quarantine at Camaran many Indian pilgrims went to Muscat and other points on the Arabian Coast, and thence direct to Jeddah without undergoing quarantine. The International Sanitary Commission decided in February to impose quarantine on arrivals at points on the Persian Gulf and Muscat, at Bassorah and Agir, as well as at Camaran, against arrivals from Hindustan, and on February 27th the Russian Government prohibited pilgrimages to the Hedjaz, and France prohibited the pilgrimage from points in Algeria and Tunis.

In March the Turkish Superior Council of Health requested the Anglo-Indian Government to close the ports of Kurrachee and Chittagong as points of departure for pilgrims, as had already been done for the Bombay Presidency. This request the Indian Government did not accede to, but contented itself with a ten days' detention of pilgrims at Kurrachee and Chittagong for observation. The Russian Government at the same time requested the Sublime Porte to take measures to improve the quarantine establishments along the Red Sea and Persian Gulf, which were defective both on account of their disadvantageous location or limited extent, and to carry out a marine patrol of the coast.

In March, notwithstanding these efforts, plague broke out in Jeddah. On the receipt of this information the Turkish Government proclaimed that the town of Jeddah should be isolated, and pilgrims to Mecca be required to enter the port of Ras-el-as-Suad, four hours' journey from Jeddah. It is interesting to note that the outbreak at Jeddah was preceded by an epidemic among the goats and mice.

Plague was also brought to Burmah in April by pilgrims from Kurrachee. The sanitary condition of Burmah was wretched, and the sanitary administration of the port ineffectual. In March and early April 34 cases of plague occurred at Jeddah.

Meanwhile the plague continued to increase in the Bombay Presidency, and in March nearly five thousand deaths were reported. In April the disease began to decline in the city, but in Kurrachee it was increasing and in the Hyderabad Province was widespread.

In April a few cases of suspicious illness occurred in Calcutta, which were later proved by bacteriological examination to be plague. The Government took prompt and engergetic measures to prevent the spread of the disease, owing to which, and to the favorable season of the year, it was held in check, so that there occurred only 25 cases and 12 deaths — not a very serious record for a city of 800,000 inhabitants.

In Hong Kong the epidemic increased during March, April and May, but in June began to decline rapidly. The mortality in Hong Kong was very high, from 80 to 90 per cent.

In Formosa during May and June there were about 3,000 cases and 2,000 deaths.

During May plague in Bombay declined rapidly, and hopes were entertained that during the summer it would disappear, but this much-desired event did not take place, and in the early autumn the epidemic, though by no means as serious as that of the preceding summer or the autumn of the previous year, began to slowly increase.

In Bombay it was noted during the autumn that the population was becoming accustomed to plague, as they had previously become to cholera and small-pox, and that at the mills and other business centres the work was being continued as if no epidemic existed in the city.

In Calcutta also sporadic cases were reported during the entire summer.

During June the return of the pilgrims from the Hedjaz to Turkey took place, but the quarantine at and detention for examination in Turkish ports were enforced, and plague did not reach European shores.

In October the plague declined slightly in Bombay, but increased in the remainder of the presidency and the districts to the south.

In October an outbreak of plague occurred in a village in Samarcand, in Asiatic Russia. As this district is separated from India by the Himalaya Mountains, and by a distance of seven hundred miles, it seemed improbable that plague had reached that point from India. Prompt and energetic measures were at once taken by the Russian Government to control the epidemic, and a large force of physicians dispatched to the district. By December 233 deaths had resulted in the infected portion of Samarcand. Late in the autumn plague was declining in Bombay, but increasing in Mysore, Madras, and other parts of Southern India, so that the prospect that India will be a plague centre during the coming year is a probable one.

The outbreak of plague in Vienna, which occurred in October, through the infection of a careless laboratory servant in handling animals inoculated with the disease, and resulted in the death of the servant, of Dr. Müller who attended him, and one of his nurses, attracted attention to the precautions which must be taken in the conduct of laboratories where cultures are made of infectious diseases. The outbreak was limited, by thorough isolation and other precautions, to six cases.

SMALL-POX.

The year has witnessed in our Southern States, notably Alabama, Mississippi and Georgia, an epidemic of small-pox of greater extent and severity than has occurred in this country for several years. It will be remembered, in the autumn of 1897 an epidemic prevailed in Atlanta and the surrounding country, the disease having spread to Georgia from Birmingham and Montgomery, Ala., to which cities it had spread from an original focus in Pensacola, Fla.

The year opened with a rather active epidemic prevalent in Alabama, the chief foci being Birmingham and Bessemer. In Atlanta and the surrounding country the disease was still active. The negro population furnished almost the entire material on which it fed, very few cases occurring among the white residents. The ignorant prejudice of the colored population against vaccination and the overcrowding of their quarters rendered vaccination and the enforcement of sanitary regulations difficult, and curtailed the effectiveness of the work of the Marine-Hospital Service and local health officials.

Small-pox during the winter was rather widely scattered through the Southern States, a moderate number of cases occurring in Washington County, Fla., and Middlesborough, Ky., scattered cases being reported from various points in Tennessee, North Carolina, South Carolina and Virginia. In Birmingham and Bessemer, Ala., where vaccination could be enforced under city ordinance, the disease diminished rapidly during the winter, but its spread in the country mining districts failed to be checked, owing to the opposition of the population to sanitary measures, and the impossibility of enforcing them. The same held true of Georgia, the disease in Atlanta being brought under control, while in the surrounding country districts it continued to prevail to a marked extent.

During March a severe epidemic occurred at Middlesborough, Ky., the disease attacking, as in the other Southern States, the negro employees of the mines and factories, and attaining a considerable degree of headway before the municipal and county authorities, who were utterly inefficient and were crippled by lack of funds, called upon the governor of the State, who asked the aid of the Marine-Hospital Service.

A surgeon, Dr. Wertenbaker, of the Service, was detailed to co-operate with the State authorities by furnishing inspection, vaccination and disinfection service, which measures were carried out so thoroughly that by the middle of April the disease was brought under control and quarantine was raised.

During April there was an epidemic of small-pox at Little Rock, Ark., which the aid of the Marine-Hospital Service was requested to suppress, and the disease was widely disseminated through the South, being reported at very numerous points in Tennessee and South and North Carolina. The disease undoubtedly was disseminated in the usual manner, namely, by persons who had light or convalescent types of the disease travelling to non-infected points, and there becoming the centres for its spread in fresh territories.

The outbreak in Little Rock, for instance, was traced directly to a negro convalescent who came there from Birmingham, Ala., during the first week in January. The Little Rock epidemic was almost entirely confined to the negro population.

During June there was an active epidemic at Shubuta, Clark County, Miss., and a moderately severe one in Iredell County, N. C., and the disease had reappeared in Washington County, Fla.

In June sixteen cases of small-pox occurred in Fredonia, N. Y., the disease having been brought there by a travelling theatrical troupe, which had been spending the winter in the South, and which was quarantined while at Geneva, N. Y., on account of the existence of small-pox among the members. Fifty cases of small-pox in eleven towns and cities resulted directly from the visits of this troupe.

All through the spring and summer small-pox spread through the Southern States to an extent unknown in recent years, Knoxville, Tenn., and Columbia, S. C., being especially afflicted. During summer and early autumn there was a mild epidemic in Southern Ohio.

Epidemics occurred during the year, although of slight extent, in New Mexico, Texas and Colorado.

During the winter a severe epidemic occurred in Middlesborough, near Newcastle-on-Tyne, England, beginning in November, and by March had resulted in no less than 800 cases and 70 deaths. An interesting fact in this epedemic was the escape of small children, the infant vaccination having been generally attended to, while, owing to prejudice against vaccination, that of adults was far from general enough to be efficient.

The practical failure of the vaccination bill in England this year, owing to the so-called conscience clause, shows plainly enough that the lessons of the Gloucester and Middlesborough epidemics have not proved severe enough to uproot the widely-spread British prejudice against interference with "personal liberty" which the anti-vaccinationists find in a compulsory vaccination law. Doubtless, in the future, severer visitations will be required to teach the hard lessons of experience.

In St. Petersburgh small-pox was, as usual, prevalent during the winter.

In Japan there was also a moderately severe epidemic, chiefly confined to the Yezo district.

In South America, Valencia, in Venzuela, was visited by an epidemic during April, and in Rio di Janeiro there was the usual prevalence of the disease during the winter months.

In Cuba the disease has found during the year its usual fertile feeding ground, and the conditions incident to the Spanish War have by no means tended to diminish its prevalence.

CHOLERA.

The history of cholera during the year presents little of interest. As usual, it has been continually prevalent in Calcutta, but at no time epidemic, not much over 100 deaths a month occurring in the months of April, May and June, when it was most extensive. During October and November deaths from this cause were very rare, even in Calcutta. Bombay has been very lightly visited by cholera during the year. In Madras cholera was epidemic during the spring and summer, and in September 169 deaths occurred there from this cause. In October it rapidly declined. Cholera has been extremely rare in Japan this year, and there has been no serious epidemic. Hong Kong, also, practically escaped the disease.

THE ANTITOXINS.

The good results of the use of diphtheria antitoxin have been continued during the year and its inestimable value as a remedial agent confirmed.

In tetanus many reports of cases treated by antitoxin have been published, but analysis shows that in most of them the serum has been employed in too small amounts and too late in the disease to prove of value. Encouraging results have been reported in a few cases where sufficiently large doses of the antitoxin have been injected intravenously, but the reports are still too few for final judgment, although enough has been done to show the importance of continuing the large doses, and of continued effort to secure serum of higher antitoxic concentration. The intracerebral injection of antitoxic serum has been successfully practised during the year, and, in conjunction with the intravenous injection, demands further trial.

The value of the antistreptococcic serum, and of the various tuberculin preparations, still remains an uncertain question.

The antiamaryllic serum of Sanarelli has likewise not demonstrated its value.

MEDICAL CONGRESSES AND MEETINGS.

The Fourth International Congress of Physiologists was held at Cambridge, England, from August 23 to 27, the Third International Congress of Applied Chemistry at Vienna, beginning on July 28, the Ninth International Congress of Hygiene and Demography at Madrid, April 10 to 17.

The Thirteenth Annual Meeting of the Association of American Physicians was at Washington, D. C., May 3, 4 and 5.

The Forty-ninth Annual Meeting of the American Medical Association was held in Denver, Col., June 7 to 10.

The American Surgical Association met at New Orleans, La., April 19 to 21. The Twenty-fourth Annual Meeting of the American Neurological Association was held in New York, May 26 to 28. The American Orthopedic Association met at Boston, Mass., May 17 to 19. The American Gynecological Society held its Twenty-third Annual Meeting at Boston, May 24 to 26. The American Association of Genito-Urinary Surgeons met at West Point on June 7 and 8. The American Pediatric Society met in Cincinnati, June 1 to 3. The Fifteenth Annual Meeting of the American Climatological Association was held at Bethlehem, N. H., on August 31 and September 1. The First Annual Meeting of the American Gastro-Enterological Association was held at Washington, D. C., Tuesday, May 3. The Annual Meeting of the American Medico-Psychological Association was held in New York, May 23 to 26. The American Electro-Therapeutic Association held its Seventh Annual Meeting at Buffalo, N. Y., September 13 to 15. The Annual Meeting of the Mississippi Valley Medical Association was held October 11 to 14 in Nashville, Tenn. The Eleventh Annual Meeting of the Southern Surgical and Gynecological Association was held December 6 to 8, in Memphis, Tenn. The Sixty-Seventh Annual Meeting of the British Medical Association was held at Edinburgh, July 26 to 28. The Twelfth Congress of the French Surgical Association was held in Paris, October 17. The Sixteenth German Congress of Internal Medicine was held in Wiesbaden, April 13 to 16. The Twenty-seventh Congress of the German Surgical Society was held in Berlin, April 13 to 16. A Congress of Gynecology, Obstetrics and Pediatrics was held at Marseilles, October 8. The German Balneological Society held its Ninth Meeting on March 11 in Berlin. The Ninth Congress of French Alienists and Neurologists was held this year at Angers on August 1.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Shattuck Lecture, before the Massachusetts Medical Society, on "The Influence of the Climate on the North American People," by Sir William H. Hingston, M.D.; the Cartwright Lectures, before the College of Physicians and Surgeons of New York, on "The Surgery of the Stomach," by W. W. Keen, M.D., LL.D.; the Middleton-Goldsmith Lecture, before the New York Pathological Society, on "The Establishment and Conservation of Purity in Public Water-supplies, especially those of Great Cities," by Prof. William T. Sedgwick; the Harveian Oration, on the "Influence of Character and Right Judgment in Medicine," by Sir Dyce Duckworth, M.D., LL.D.; the Lumleian Lectures on "The Principles which Govern Treatment in Diseases and Disorders of the Heart," by Sir Richard Douglas Powell, Bart., M.D.; the Hunterian Lectures on the "Surgery of the Kidney," by Henry Morris, F.R.C.S.; the Bowman Lecture on the "Etiology and Educative Treatment of Convergent Strabismus," by Priestley Smith, M.R.C.S.; the Cavendish Lecture on "Growth as an Agent in (1) Production and (2) the Removal of Deformity," by Howard Marsh, F.R.C.S.; the Croonian Lectures on "The Chemical Products of Pathogenic Bacteria Considered with Special Reference to Enteric Fever," by Sydney Martin, M.D., F.R.S., F.R.C.P.; the Milroy Lectures on the "Natural History of Vaccinia," by S. Monckton Copeman, M.A., M.D. Cantab., M.R.C.P.;

the Bradshaw Lecture on "Myxedema and Allied Disorders," by William M. Ord, M.D., F.R.C.P.; the Erasmus Wilson Lectures on the "Pathology and Treatment of those Diseases of the Liver which are Amenable to Direct Surgical Interference," by H. J. Waring, M.S., B. Sc., F.R.C.S.; the Lettsomian Lectures on the "Affections of the Urinary Apparatus in Children," by John H. Morgan, M.A. Oxon., F.R.C.S. (Lecture III); the Goulstonian Lectures, "Observations on the Pathology of the Kidneys," before the Royal College of Physicians of London, by John Rose Bradford. M.D., D.Sc. Lond., F.R.S.; the Hunterian Lecture on "What Operation Can Do for Cancer of the Tongue," by Henry T. Butlin, F.R.C.S., D.C.L. (Illustrated).

THE HEALTH OF THE ARMY IN THE SPANISH WAR.

In endeavoring to ascertain the actual statistics as to the deaths from disease and wounds received in battle we are hampered by the fact that in the summary of the surgeon-general's report for the year no mention is made of deaths from other causes than typhoid fever, malarial fevers, and diarrhea and dysentery. These diseases are said to have resulted in 1,130 deaths, while the total number of deaths of which full particulars had been received was 1,715.

Other estimates place the total number of deaths in the army during the war at 2,910. Of these the deaths of 2,485 enlisted men and 80 officers resulted from disease; while 280 enlisted men and officers were killed in battle, and 61 enlisted men and four officers died of wounds received in battle.

The fatal casualties in battle in Cuba were one officer to 10 men — a percentage which is unusually high, and testifies well to the personal valor displayed by the American officers in leading their troops — about the same proportion of deaths from disease and in battle obtained as in the Civil War; but in comparing the two it should be remembered that a continuation of hostilities under the climatic conditions of Cuba would have greatly increased the proportion of deaths from disease.

The present status of our knowledge makes it very probable that when the returns are complete the highest death-rate of the war will be shown to be that from typhoid fever contracted in the great camps established in the Southern States for the training and "acclimatization" of our troops, and the next largest proportion from the various forms of enteritis and the pernicious types of malaria, which, had it not been for the demand of the general staff for the return of the army from Santiago to the Northern Coast, would have caused as great a mortality as it had already morbidity in the Fifth Army Corps.

Too much importance cannot be attributed to the shortness of the period of hostilities, the early surrender of Santiago, and consequent possibility for the quick return of our troops from Santiago, and the breaking up of the Southern camps, in preventing a high mortality which so many causes would have rendered inevitable had the war continued.

Some of the reasons which may be enumerated for the inevitable occurrence of this mortality are: first and most important, the ignorance of the officers and men of the volunteer service of the rules for camp sanitation and of the necessity for their observance; second, the absence of the discipline which would have ensured this observance if understood.

The petty policy of Congress, which out of its tender solicitude for the voters kept the army down to the smallest number absolutely necessary for police duty on the western frontier, together with the eagerness of that same governing body to precipitate the nation into a war, we have many times alluded to in these columns as responsible for the necessity of hastily recruiting an undisciplined volunteer army. The fact that the important staff positions of inspectors were filled by appointees from civil life and not from those whose military training had fitted them for the duties of these positions, so important to the proper observance of camp sanitation, has also been commented upon.

The foresight and intelligence with which the medical staff of the navy prepared for war was noticeably absent from the preparation, or lack of preparation, made by the army medical staff. The act of Congress by which the medical force was increased by 650 contract surgeons was not passed and approved till May 12th, a circumstance which rendered a thorough and proper examination for these positions impossible.

The omission of Congress to provide any medical officers for manning division or base hospitals, and also to provide for the establishment of men for service in the hospital corps, has already been commented upon.

An ambulance train and three hospital ships, one of which, the *Relief*, was fully and admirably equipped, were prepared and put in service by the medical department of the army. The hospital ship *Relief* arrived at Santiago on July 7th, and received many of the wounded from the attack on Santiago.

The haste and confusion which characterized the embarkation for Santiago, resulting in the leaving behind of most of the ambulances and a large part of the medical supplies, were the cause of much suffering after the fights at El Caney and San Juan. The heroism and devotion of the medical officers on duty in the care of the wounded, under the difficulties thus created, form part of the history of the war.

With the rapid transfer of the troops debilitated by disease from Santiago to Montauk Point, the establishment and manning of temporary hospitals, a general hospital and a detention hospital, for the large number of those whom it was essential to keep for a time under observation before admission to the general hospital, became necessary. The rapid arrival of the transports, often as many as four in one day, between August 13th and 31st, rendered the preparation and administration of the detention and general hospitals and the proper care and feeding of this large number of men a very difficult problem. In the solution of this problem the army authorities received most efficient aid from various branches of the Red Cross Association and the various volunteer aid associations. The diet kitchen established by the Massachusetts Volunteer Aid Association was extremely efficient in furnishing suitable nourishment for the sick and convalescent soldiers, not only of the Massachusetts volunteer regiments but the regulars and volunteers from other States.

The inevitable congestion at Montauk Point and the overcrowding of the excellent hospitals which were finally established at Camp Thomas were relieved by the immediate co-operation of the various seaboard cities, and by hospitals and aid associations all over the country. The equipment by private charity of the hospital ship *Bay State*, perhaps the most completely and efficiently equipped vessel ever fitted out for such a purpose, which made one trip to Santiago and two to Porto Rico, bringing sick and convalescent soldiers to be cared for in the Boston hospitals, is a noteworthy instance of the aid furnished the government in the care of the sick soldiers by private charitable enterprise.

Several hospital trains were sent from Philadelphia to Chickamauga, and also from Boston, from Portland, Me., and other cities and States. Municipal and private hospitals vied with one another in offering facilities for the care of the soldiers, and gave a splendid example of what the sympathy and charitable efforts of the American people can accomplish when once aroused.

It gave especially an opportunity to many members of the medical profession to demonstrate extraordinary capabilities for self-sacrificing devotion, and administrative ability of a high order.

Among the lessons which may be drawn from the Spanish War are the following: (1) that there is need under present conditions in this country of a regular army large enough to attend to a war with a second or third rate power without depending upon volunteers or the militia regiments from the various States; (2) the danger of rushing in such haste that preparation is forgotten and equipment left behind into campaigns in the height of the malarial season in tropical countries; (3) that there is need of a thorough re-organization of the medical department of the army and of substantially all the other departments, which must co-operate in order to secure the best results in sanitation. It is to be hoped that these lessons may not prove unavailing as incentives to rational action in the future.

Of the specific contributions which the war has made to our knowledge of military surgery it is now too soon, in the absence of accurate and detailed reports and statistics, to speak. Suffice it to say that the superiority of the jacketed projectile and small-calibre rifle with smokeless powder, after their adoption by all the important powers of the world maintaining standing armies, has at last forced itself upon the attention of the War Department. We think it at least safe to predict that never in the future shall we be called upon to see American soldiers, whether regulars or volunteers, sent into battle armed with antiquated Springfield rifles and black powder as a target for the enemy.

While the long range and flat trajectory of the modern rifles give them an immense advantage in effectiveness, the small size and hardness of the bullets render many of the wounds produced by them less serious than those caused by the old leaden bullets, and the experience of the war has given ground for the hope that the fatal casualties will bear a far smaller proportion to the total number in the future than in the past.

The good results following the immediate application of the first-aid dressings furnished to every soldier were well demonstrated after the battles of San Juan and El Caney, and the results of this and the subsequent antiseptic treatment of the wounds by the army Surgeons were most excellent, and doubtless resulted in great saving of life.

The lack of supplies, of medicine, tents, beds and other necessaries, and the fact that the medical force was entirely inadequate in point of numbers, render the results attained by this overworked medical corps, under the hardest conditions, still more creditable.

THE HEALTH OF THE NAVY IN THE SPANISH-AMERICAN WAR.

The beginning of the Spanish War, to the great credit of the Medical Department of the United States Navy, found this department amply prepared to deal with any possible contingency. We learn from the surgeon-general's report that from the time of the blowing up of the *Maine*, on February 15th, the naval hospitals were equipped to their full capacity, and plans made to extend them as might be required by building pavilion wards on the hospital grounds. The director of the naval laboratory was prepared to furnish supplies in any quantity required, and immediately.

Preparations were made to increase the personnel of the service by holding examinations at the principal seaport cities, but out of 2,000 applications only a small proportion was examined and 42 appointed.

The fact being recognized that the construction of a modern battleship, owing to its division into compartments, as well as other peculiarities, renders it impossible to properly care for a large number of wounded, especially during the progress of a battle, the navy department early decided upon the probable necessity for a hospital ship, and took the important step of equipping such a ship to attend our fleet in West Indian waters. The merchant ship *Creole* was purchased and in sixteen days completely equipped as the hospital ship *Solace*.

Although the proportion of casualties attending the war was so surprisingly small that no strain whatever was placed upon the naval medical department, the hospital ship rendered very great service in the care of the sick and wounded in the naval battles in the West Indies. She brought 57 sick or wounded patients to New York immediately after the battle at San Juan, and later landed 44 army wounded at Fortress Monroe, and 55 navy sick or wounded and 48 Spanish wounded to the Naval Hospital, Norfolk, Va. Afterward she brought 74 sick from the navy to Boston, to be cared for at the Chelsea Naval Hospital. She also performed invaluable work in the distribution of medical stores and supplies. The example of the navy was later followed by the army in the equipment of the hospital ship *Relief*, and by the Massachusetts Volunteer Aid Association in the equipment of the *Bay State*.

The most remarkable, not to say astonishing, fact in the medical and surgical history of this war, which was pre-eminently a naval war, and of which the decisive battles were fought at sea, was the small number of casualties occurring in the American Navy. The superiority of our navy in armament, armor, personnel, discipline and equipment was so great that battles in which entire squadrons of the enemy's ships were sunk or burned to the water's edge resulted in so few casualties on the American side that the statistics include very low figures, so low, in fact, as to prove of very little value in increasing our knowledge of the casualties to be met with in modern naval surgery. The casualties on the Spanish side were fearful both in numbers and severity, but the demoralization of defeat and the very completeness of the destructive work of our gunnery will probably preclude the elaboration of any accurate report of the injuries to the Spanish side, even if the organization of their medical department might have been sufficient under ordinary conditions for the preparation of such a report, which is a matter of doubt.

In regard to the casualties on the American side the following statistics, taken from the report of the Surgeon-General of the Navy, speak for themselves: In the battle of Manila Bay, when on May 1st six American cruisers sunk or burned to the water's edge six Spanish cruisers, three gunboats and a transport and two tugs (the entire Spanish Phillipine Squadron) protected by the fire of the Cavite arsenal, the casualties on the American side amounted to nine wounded. Most of these were slight and all recovered. No one was killed on the American side. The Spanish loss is still unknown, but may be estimated from the fact that on the flagship *Reina Christina* alone 150 were killed and 90 wounded.

In the engagement of July 3d off Santiago, which resulted in the destruction of Cervera's fleet of four armored cruisers and two torpedo boat destroyers, only one man on the American side was killed and 10 wounded.

The ability to deal with the enemy at ranges at which their own guns were ineffective and the superior gun practice of the Americans were responsible for this wonderfully small mortality.

In the minor engagements along the Cuban coast, where gunboats or torpedo boats were subject to the fire of masked batteries and fortifications at the mouths of harbors, the casualties were more numerous than in the great and decisive naval battles of the war. Five men were killed and three wounded on the torpedo boat *Winslow* off Cardenas on May 11th, and one killed and 11 wounded on the cruisers *Marblehead* and *Nashville* off Cienfuegos.

The greatest number of casualties in the navy during the war occurred to the Marine Battalion which occupied Guantanamo from June 11th to June 20th. In the land engagements necessary in taking and holding this position 6 men were killed and 16 wounded. Among those killed was Acting Assistant Surgeon John Blair Gibbs, of New York, who had volunteered for the service, and was the only naval medical officer killed in the war.

The total list of casualties in the navy during the war amounts to 16 killed and 68 wounded, or a total of 84. Of the 68 wounded 54 were subsequently discharged to duty, eight were invalided from the service, four remained under treatment when the report was published, and two died subsequently as a result of their injuries.

With this list of casualties it is interesting to compare the casualties resulting from the sinking of the *Maine* in Havana harbor on the evening of February 15th. By this catastrophe, out of a complement of 355 men — 290 sailors, 39 marines and 26 officers — 251 men and two officers were killed, and only 102 saved. In employing these figures to estimate the mortality resulting from the employment of torpedoes and mines in naval warfare as compared with that of artillery fire it must be borne in mind that the explosion occurred in time of peace, and at night, when the vast majority of the crew were asleep in the forward part of the ship under which the explosion occurred — in short, at a time when the lack of preparation for such an event had rendered the conditions most favorable for it to result in a large mortality.

Under the conditions of a naval engagement with the fighting force on deck, and the remainder of the crew alert and ready for any emergency, and with boats from other ships, launches and tugs at hand to render assistance, the destruction of life need not have been so great.

Under the conditions of defeat, however, if the vessel were sunk by a torpedo while under the pursuit and galling fire of the enemy, the mortality might reach the same or even greater proportions, although such a result was prevented at the sinking of Cervera's fleet by the activity of the American ships, boats, torpedo boats, converted yachts, etc., in saving the lives of the wounded and drowning Spanish crews. Of the 77 sailors and marines rescued from the *Maine* only 16 were uninjured.

The admirable condition of health in which the Navy and Marine Corps were maintained during the period of hostilities from April 21st to August 12th — 114 days — is shown by the fact that out of an average strength of 26,102 men there were only 85 deaths, 29 being due to injuries and 56 from diseases. The number of deaths from all causes, exclusive of those killed in battle, was 67, or an annual rate of 8.19 per 1,000. Malaria, heat stroke, and diarrheal affections, all incident to service in tropical climates, proved the chief causes of sickness during the year. The health of the Asiatic Squadron from April 21st to June 30th varied but little from that of the previous year, the ratio per 1,000 on the *Olympia* being less than that for the same period in 1897.

The health of the Marine Battalion which landed at Guantanamo on June 10th, after serving 36 days on board a transport, and held their position there for the remainder of the war, is an instructive example of what discipline and training can accomplish under most adverse climatic conditions. During July and August, the most trying months of the year, this battalion of 588 men held their position at Guantanamo without losing a single man from disease. No case of typhoid fever occurred, and malaria, the most dreaded disease, claimed only 19 cases. The six men who lost their lives at Guantanamo were all killed in battle.

NECROLOGY. — FOREIGN.

Azzio Caselli, M.D., professor of clinical surgery in the University of Genoa, died in August, aged fifty-six.

F. Cohn, professor of botany at Breslau, and one of the founders of the science of bacteriology, died in July.

Professor Crocq, of Brussels, president of the Federative Méd. Belge, died in August, aged seventy-four.

Leopold Ritter von Dittel, M.D., formerly extraordinary professor of surgery in the University of Vienna, died July 28, aged eighty-three.

George Dragendorff, M.D., formerly professor of pharmacology and toxicology in the University of Dorpat, died in April, aged sixty-two.

Carlo Giacomini, M.D., professor of anatomy in the University of Turin, died in August, aged fifty-eight.

Ernest Hart, editor of the *British Medical Journal*, and chairman of the Parliamentary Bills Committee of the British Medical Association, died on January 7, aged seventy-two.

Sir William Jenner, physician in ordinary to the Queen and a former president of the Royal College of Physicians of England, died, in London, December 12, aged eighty-three.

Rudolf Leuckart, M.D., the distinguished bacteriologist of Leipzig, died in that city in September, aged fifty-eight.

W. Moldenhauer, M.D., extraordinary professor of laryngology in the University of Leipzig, died in January, aged fifty-three.

John Murray, M.D., inspector-general of hospitals, Bengal Medical Service, retired, died in Norfolk, Eng., on July 27, aged eighty-eight.

Charles Nicolas, M.D., extraordinary professor of hygiene in the University of Lausanne, died January 28, aged fifty-two.

Jules Emile Pean, M.D., the eminent French surgeon, died in July, aged sixty eight.

Lord Lyon Playfair, the distinguished chemist, political economist and parliamentarian, died, in London, on May 31, aged seventy-nine.

Augustin Prichard, M.D., F.R.C.S., formerly surgeon to the Royal Infirmary, Bristol, and a noted teacher, died in January, aged eighty.

Sir Richard Quain, Bart., M.D., F.R C.P., F.R.S., president of the British General Medical Council, died, in London, on March 13, aged eighty-one.

Ernest Ludwig Schwimmer, M.D., professor of dermatology in the University of Buda Pesth, died February 25, aged sixty.

Salomon Stricker, M.D., professor of experimental and general pathology in the University of Vienna, died in April, aged sixty-four.

Davide Toscani, M.D., professor of legal medicine in the University of Rome, died on September 15.

Joachim Voss, M.D., professor of anatomy and medical jurisprudence in the University of Christiania, died in January, aged eighty-two.

Charles West, M.D., F.R.C.P., founder of and former physician to the Hospital for Sick Children, Great Ormonde Street, London, died March 19, aged eighty-one.

Dr. Zacharin, lecturer on the "Functions of the Heart," at the Imperial College of Medicine, at Moscow, and physician to the late Czar Alexander II, died January 5.

G. Zancarol, M.D., of Alexandria, Egypt, an authority on international hygiene, died in July.

A. von Zenker, M.D., professor of pathological anatomy in the University of Erlangen, died in August, aged seventy-three.

NECROLOGY. — UNITED STATES.

Philip Stanhope Barbour, M.D., superintendent of the Louisville, Ky., City Hospital, died November 14, aged fifty-one.

Charles Morris Fischer, M.D., Oakland, Cal., professor of histology of Cooper Medical College, San Francisco, Cal., died July 29, aged thirty-two.

Erasmus R. Garrott, M.D., Chicago, chief medical inspector of the Chicago Health Department, died April 19, aged sixty-two.

John Blair Gibbs, M.D., New York, surgeon to the Marine Battalion, U. S. Navy, was killed while in active service at Guantanamo on June 11, aged thirty-nine, and was the first medical officer to lose his life in the war.

H. A. Gilman, M.D., for many years superintendent of the Hospital for the Insane at Mount Pleasant, Iowa, died October 9, aged fifty-three.

Benjamin M. Griffith, M.D., of Springfield, Ill., a well-known sanitarian, died in Springfield, September 24, aged sixty-seven.

John B. Hamilton, M.D., editor of the *Journal of the American Medical Association*, and formerly surgeon-general of the U. S. Marine-Hospital Service, died December 24, aged fifty-one.

Francis L. Haynes, M.D., Los Angeles, Cal., professor of gynecology in the Medical University of Southern California, died October 18, aged forty-eight.

Cornelius N. Hoagland, M.D., of Brooklyn, N. Y., the well-known philanthropist, and founder of the Hoagland Laboratory, died April 24, aged sixty-five.

Levi Gerrish Hill, M.D., of Dover, N. H., formerly president of the New Hampshire Medical Society, died March 3, aged eighty-five.

Oliver Albert Judson, M.D., of Philadelphia, consulting physician to the Blockley Hospital, died in March.

Nathan Smith Lincoln, M.D., of Washington, D. C., a former vice-president of the Ninth International Medical Congress and president of the Alumni of the University of Maryland, died in August.

W. Abram Love, M.D., professor of physiology and president of the Faculty in Atlanta Medical College, died in Atlanta, Ga., January 21, aged seventy-four.

Claudius Henry Mastin, M.D., LL.D., a distinguished surgeon and one of the organizers of the first Congress of American Physicians and Surgeons, died in Mobile, Ala., October 3, aged seventy-two.

George McCreary, M.D., major and surgeon, U. S. A., died at sea on the transport *Catania*, on August 23.

Ambrose M. Miller, M.D., a former superintendent of the Illinois State Asylum for Feeble-Minded, died in Lincoln, Ill., April 2.

Thomas Jefferson Moore, M.D., professor of clinical medicine in the University College of Medicine at Richmond, Va., died on February 24, aged fifty-eight.

John F. Morse, M.D., of San Francisco, Cal, a distinguished surgeon and chief surgeon to the German Hospital of San Francisco, died August 23.

William Lindsley Mussey, M.D., demonstrator of anatomy and professor of dermatology and syphilography in the Women's Medical College of Cincinnati, died September 8.

John L. Neilson, M.D., medical inspector, U. S. Navy, died in Boston, Mass., September 1, aged fifty-four.

Joseph O'Dwyer, M.D., the perfecter and introducer of intubation of the larynx in diphtheria, died in New York, January 7, aged fifty-seven.

Abraham M. Owen, M.D., one of the organizers of the Pan-American Medical Congress, died in Evansville, Ind., September 19.

Richard Channing Moore Page, M.D., of New York, a well-known medical author and teacher, died in Philadelphia, on June 19, aged fifty-seven.

Theophilus Parvin, M.D., LL.D., professor of obstetrics and gynecology at the Jefferson Medical College, died in Philadelphia, on January 29, aged sixty-nine.

William Pepper, M.D., LL.D., professor of the theory and practice of medicine in the University of Pennsylvania, died July 28, aged fifty-eight.

Foster Pratt, M.D., of Kalamazoo, a former president of the Michigan State Medical Society, died August 12, aged seventy-five.

William H. Robb, M.D., of Amsterdam, N. Y., a former vice-president of the New York State Medical Association, died in Selma, Ala., January 12, aged fifty-four.

Edward Constant Segnin, M.D., formerly professor of diseases of the nervous system in the College of Physicians and Surgeons of New York, died February 19, aged fifty-five.

Alan Penniman Smith, M.D., of Baltimore, one of the trustees of Johns Hopkins University, died July 18, aged fifty-eight.

A. P. Snow, M.D., a former president of the Maine Medical Association, died October 25, aged seventy-two.

J. Q. A. Stewart, M.D., for sixteen years medical superintendent of the Kentucky Institution for the Training of Feeble-Minded Children, died on January 25, aged sixty-nine.

Richard M. Swearingen, M.D., of Austin, Texas, State health officer of Texas for twelve years, died on August 7, aged sixty.

Francis Walton Todd, M.D., a former president of the California State Medical Society, died at Capitola, Cal., August 5, aged eighty-two.

John G. Truax, M.D., of New York City, one of the founders of the New York State and County Medical Associations, died on February 16, aged fifty.

Charles L. Wells, M.D., of Minneapolis, professor of diseases of children in Minnesota State University, died January 20, aged fifty-six.

Robert A. Wheaton, M.D., of St. Paul, Minn., clinical instructor in surgery in the University of Minnesota, died February 25, aged thirty.

Henry Parke Custis Wilson, M.D., vice-president of the American Gynecological Society, died in Baltimore, Md., December 27, 1897, aged seventy.

NECROLOGY. — MASSACHUSETTS MEDICAL SOCIETY.

Elisha Wilbour Aiken, M.D., M.M.S.S., died in Hingham, April 13, aged seventy.

J. Richmond Barss, M.D., M.M.S.S., of Malden, died in Hanover, October 25, aged forty-nine.

C. B. Belt, M.D., M.M.S.S., of South Boston, died on August 23, aged fifty.

Josiah Mark Blood, M.D., M.M.S.S., died in Ashby, November 19.

Henry C. Bowen, M.D., M.M.S.S., surgeon of the Second Massachusetts Volunteers, died in Santiago, in October, aged thirty.

Charles Hale Brown, M.D., M.M.S.S., died in Boston, February 28.

Thomas Runnells Clement, M.D., M.M.S.S., died at Osterville, September 24, aged seventy-five.

George Albert Coburn, M.D., M.M.S.S., died in Cambridge, September 2, aged fifty-two.

George Danforth Colony, M.D., M.M.S.S., died in Fitchburg, October 2, aged seventy.

Joseph Daniel Crouch, M.D., M.M.S.S., died in Cambridge, March 16, aged forty-five.

Erastus Calhoun Coy, M.D., M.M.S.S., died in Turner's Falls, December 28, 1897, aged sixty-five.

John Benedict Curtis, M.D., M.M.S.S., died in East Cambridge, October 1, aged thirty-one.

David Robert Dewey, M.D., M.M.S.S., died in North Adams, November 5, aged thirty-four.

Edgar Simon Dodge, M.D., M.M.S.S., died in Natick, April 5, aged forty-four.

George Carroll Dolliver, M.D., M.M.S.S., of Boston, died in Arlington, December 30, aged twenty-eight.

Joseph Bassett Fobes, M.D., M.M.S.S., died in Bridgewater, August 31, aged eighty-three.

Charles Leonard Fox, M.D., M.M.S.S., died in Lowell, October 5, aged twenty-eight.

George Edward Freeman, M.D., M.M.S.S., died in Brockton, June 12, aged forty-six.

George Melville Frost, M.D., M.M.S.S., died in Peabody, June 20, aged fifty-five.

Harlow Gamwell, M.D., M.M.S.S., died in Westfield, August 11, aged sixty-three.

David Webb Hodgkins, M.D., M.M.S.S., died in East Brookfield, April 19, aged sixty-three.

Charles Moses Holmes, M.D., M.M.S.S., died in Northampton, October 7, aged thirty-nine.

George Thomas Hough, M.D., M.M.S.S., died in New Bedford, March 24, aged sixty-one.

Woodbridge Ruggles Howes, M.D., M.M.S.S., died in Hanover, February 5, aged eighty.

Eben Jackson, M.D., M.M.S.S., died in Somerville, June 22, aged seventy-three.

Arthur Kemble, M.D., M.M.S.S., died in Salem, October 27, aged fifty-nine.

Edward Hamilton Kidder, M.D., M.M.S.S., of Fall River, died July 16, aged thirty-three.

Charles Lorenzo Knowlton, M.D., M.M.S.S., died in Northampton, July 5, aged seventy-four.

John Parker Maynard, M.D., M.M.S.S., of Dedham, died February 26, aged eighty-one.

William Morrison Moore, M.D., M.M.S.S., died in Provincetown, June 10, aged forty-nine.

Charles Henry Ricker, M.D., M.M.S.S., died in Lowell, March 16, aged forty-two.

Joseph Stedman, M.D., M.M.S.S., of Jamaica Plain, died in Watkins, N. Y., May 16, aged six-two.

Calvin Stevens, M.D., M.M.S.S., formerly of Boston, died in Auburndale, March 1, aged eighty-one.

William Newcomb Stone, M.D., M.M.S.S., died in Wellfleet, October 17, aged fifty-three.

Jan Joseph Bastianus Verrmyne, M.D., M.M.S.S., formerly of New Bedford, died in Francestown, N. H., August 16, aged sixty-three.

Frederick William Vogel, M.D., M.M.S.S., of Roxbury, died July 16, aged fifty-two.

Edmund Walsh, M.D., M.M.S.S., of East Cambridge, died October 19.

Charles Pomeroy Worcester, M.D., M.M.S.S., died in Newtonville, October 9, aged thirty-seven.

John Yale, M.D., M.M.S.S., of Ware, died in Beloit, Kan., February 25, aged seventy-seven.

Joseph Cummings Yale, M.D., M.M.S.S., died in Cambridge, June 26, aged fifty.

Aaron Young, M.D., M.M.S.S., died in Belmont, January 13, aged seventy-nine.

During the year forty members of the Society have died, eight more than in the preceding year. The average age was fifty-three and four-tenths years, that of 1897 having been fifty-six years, and that of 1896, fifty-seven and one-half years. Four were eighty years or over, and eleven seventy years or over. The lowest age of death was twenty-eight and the highest eighty-three.

MEDICAL NOTES.

Death of Dr. John B. Hamilton. — Dr. John B. Hamilton, formerly Surgeon-General of the United States Marine-Hospital Service, died at Elgin, Ill., December 24. For over a year he had been superintendent of the State Asylum for the Insane at Elgin. He was born in 1847 in Otter Creek, Jersey County, Ill., and was graduated at Rush Medical College, Chicago, in 1869. In 1874 he was appointed assistant surgeon in the United States Army, but resigned in 1876 to enter the Marine-Hospital Service. Three years later he became supervising surgeon-general of that service. He introduced the first visual examination of pilots and the physical examination of seamen as preliminary to shipment. In June 1891 he resigned his commission. He was stationed at Chicago for three years in charge of the Marine-Hospital Service, but in 1896 resigned.

Dr. Hamilton was professor of surgery of the Rush Medical College and the Chicago Polyclinic, surgeon to the Presbyterian Hospital and consulting surgeon to St. Joseph's Hospital and the Central Free Dispensary, and was the editor of the *Journal of the American Medical Association.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the two weeks ending at noon, December 28, 1898, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 38, measles 258, typhoid fever 15.

Poisoning by Strychnine Pills. — A four-year-old child of John Steele, of East Boston, ate a box of strychnine pills recently, supposing them to be candy, and died within a short time.

Fined for Expectorating in the Cars. — In the Third District Court at Cambridge last week, Judge Almy imposed a fine of one dollar in the case of Anthony Zarrell, charged with violating the rule aginst expectorating in street cars.

Annual Report of the Lynn Hospital. — This report shows that in the past year 772 patients have been admitted to the Lynn Hospital and 770 have been discharged from the institution. There were 84 deaths. The treasurer reported that $18,693 was received, and $15,191 expended during the year.

NEW YORK.

A Nun as Postmistress. — Sister Polycarpa, of the Order of St. Dominic, who is said to be the only nun in the United States who ever held such an office, has been appointed postmistress at St. Joseph's, Sullivan County. Two years ago the sister was advised by her physician to go to this neighborhood, on account of incipient tubercular trouble, and while there she devised the plans for the establishment of a sanitarium for consumptives, which was built last summer by the nuns of her order connected with St. Catherine's Hospital in Brooklyn, and over which she now presides.

METEOROLOGICAL RECORD

For the week ending December 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Sigual Corps: —

Date.	Barometer	Thermemeter.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...11	29.45	30	35	26	64	58	61	S.W.	W.	14	14	O.	C.	
M..12	29.65	26	31	20	58	100	79	N.E	N.W.	6	14	N.	S.	.46
T...13	29 97	16	23	8	87	74	80	N.W.	N.W.	8	14	O.	C.	
W..14	30.42	12	24	0	64	64	64	S.W.	S.W.	9	13	C.	O.	
T...15	30.52	24	30	17	54	34	44	W.	N.E.	12	3	O.	C.	
F...16	30.48	27	39	15	63	44	54	W.	S.W.	6	12	O.	C.	
S...17	30.15	37	43	31	70	80	75	S.	S.E.	8	2	O.	O.	
☞														

* O , cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, December 17, 1898.

Cities	Estimated population.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	3,438,899	1266	295	6.00	22.88	80	.96	2.08
Chicago . . .	1,619,226	—	—	—	—	—	—	—
Philadelphia .	1,240,226	—	—	—	—	—	—	—
St. Louis. . .	623,000	—	—	—	—	—	—	—
Boston . . .	528,463	208	52	9.12	20.16	1.44	1.92	2.88
Baltimore . .	506,389	201	60	6.50	20.50	2.00	.50	2.50
Cincinnati . .	405,000	—	—	—	—	—	—	—
Cleveland . .	350,000	—	—	—	—	—	—	—
Pittsburg . .	295,000	99	38	13.13	23.23	2.02	6.06	2.02
Washington .	277,000	118	27	12.75	17.00	1.70	.85	5.95
Milwaukee . .	275,000	—	—	—	—	—	—	—
Providence. .	150,000	55	16	9.10	10.92	3.64	1.82	—
Nashville . .	87,754	24	9	—	8.32	—	—	—
Charleston . .	65,165	28	6	—	10.71	—	—	—
Worcester . .	108,240	27	6	11.11	3.70	—	7.40	3.70
Fall River . .	95,919	32	11	6.26	25.00	6.26	—	—
Cambridge . .	89,724	30	3	6.66	10.00	—	—	3.33
Lowell . . .	88,641	28	7	7.14	28.56	—	—	7.14
Lynn	66,703	18	2	16.66	16.66	—	5.55	5.55
New Bedford .	66,340	20	7	10.00	25.00	5.00	—	5.00
Somerville . .	61,101	26	2	3.84	19.20	—	—	3.84
Lawrence . .	57,263	17	12	17.64	23.52	—	—	5.88
Springfield .	56,501	16	2	18.75	6.25	—	12.50	6.25
Holyoke . . .	43,424	8	2	12.50	12.50	—	—	12.50
Brockton . .	37,278	11	2	—	9.09	—	—	—
Salem. . . .	36,883	9	1	11.11	—	—	11.11	—
Malden . . .	34,613	8	1	—	37.50	—	—	—
Chelsea . . .	33,468	13	2	—	23.07	—	—	—
Haverhill . .	32,022	7	0	—	—	—	—	—
Gloucester . .	30,589	4	3	—	—	—	—	—
Newton . . .	29,716	14	3	—	21.42	—	—	—
Fitchburg . .	29,438	14	—	7.14	—	—	7.14	—
Taunton . . .	28,167	15	3	6.66	6.66	6.66	—	—
Everett . . .	25,338	5	1	40.00	—	—	20.00	20.00
Quincy . . .	23,549	7	3	14.28	—	—	—	14.28
Pittsfield . .	22,643	—	—	—	—	—	—	—
Waltham . .	21,812	8	2	12.50	—	—	—	12.50
North Adams .	20,971	6	1	—	—	—	—	—
Chicopee . .	17,842	8	2	—	12.50	—	—	—
Medford . . .	16,511	3	0	33.33	—	—	33.33	—
Newburyport .	14,915	7	0	—	14.28	—	—	—
Melrose . . .	14,032	4	0	20.00	—	—	—	—

Deaths reported 2,380; under five years of age 586; principal infectious diseases (small-pox, measles, diphtheria and croup, cerebro-spinal meningitis, diarrheal diseases, whooping-cough, erysipelas and fevers) 172, acute lung diseases 479, consumption 271, diphtheria and croup 60, typhoid fever 34, diarrheal diseases 27, scarlet fever 18, measles 9, whooping-cough 8, cerebro-spinal meningitis 8, erysipelas 4, malarial fever 2.

From scarlet fever New York 13, Pittsburg, Washington, Lynn and Lawrence 1 each. From measles New York 7, Washington and Lawrence 1 each. From whooping-cough New York 4, Pittsburg and Providence 2 each. From cerebro-spinal meningitis New York 3, Washington 2, Baltimore, Lynn and New Bedford 1 each. From erysipelas Baltimore 2, Washington and Cambridge 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 11,218,378, for the week ending December 10th, the death-rate was 17.8. Deaths reported 3,835; acute diseases of the respiratory organs (London) 295, diphtheria 92, measles 84, whooping-cough 59, diarrhea 56, scarlet fever 32, small-pox (Liverpool) 1.

The death-rates ranged from 12.4 in Derby to 27.2 in Bolton; Birmingham 18.9, Bradford 16.1, Cardiff 16.4, Gateshead 15.6, Hull 15.4, Leeds 18.8, Liverpool 22.0, London 16.7, Manchester 20.1, Newcastle-on-Tyne 18.7, Nottingham 19.2, Portsmouth 20.7, Salford 18.4. Sheffield 16.8, Sunderland 23.2

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF COMMISSIONED OFFICERS OF THE UNITED STATES MARINE–HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DECEMBER 22, 1898.

Williams, L. L., passed assistant surgeon. To report at Hygienic Laboratory, Washington, D. C., for temporary duty. December 19, 1898.

Stewart, W. J. S., passed assistant surgeon. To proceed to certain ports as inspector. December 21, 1898.

Cumming, H. S., assistant surgeon. To report at Hygienic Laboratory, Washington, D. C., for temporary duty. December 19, 1898.

Foster, M. H., assistant surgeon. Upon expiration of leave of absence to proceed to Savannah, Ga., and assume command of Service. December 19, 1898.

White, Mark J., assistant surgeon. To proceed to Stapleton, Staten Island, N. Y., and report to commanding officer for duty and assignment to quarters. December 19, 1898.

Board convened to meet at Washington, D. C., December 19, 1898, for the physical examination of officers of the Revenue Cutter Service. Detail for the Board: Passed Assistant Surgeon G. T. Vaughan, Chairman; Passed Assistant Surgeon W. J. S. Stewart, Recorder.

SOCIETY NOTICES.

Boston Society for Medical Improvement.—The annual meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday evening, January 2d, at 8 o'clock.

Dr. M. H. Richardson: "Diverticulum of the Esophagus, with Extirpation."

Dr. Henry R. Stedman: "A Case of Symmetrical Gangrene."

Dr. C. W. Townsend: "Remarks on Infant Feeding, with Special Reference to the Home Modification of Milk."

Election of officers.

James G. Mumford, M.D., *Secretary*, 197 Beacon St.

Suffolk District Medical Society, Surgical Section.— The Surgical Section will meet at the Medical Library, 19 Boylston Place, on Wednesday evening, January 4, 1899, at 8.15 o'clock.

The presentation of patients operated upon for foreign body in the throat; some x-ray photographs, Drs. D. W. Cheever, Abner Post, F. B. Harrington, H. L. Burrell, S. J. Mixter and J. W. Elliot.

The presentation of other interesting surgical cases as follows:

"A Case of Stricture of the Esophagus," Dr. R. W. Lovett.

"A Case of Malignant Disease of Various Abdominal Organs," Dr. G. H. Monks.

"A Case of Wound of the Thoracic Duct during Operation," Dr. F. B. Lund.

"Remarks on Laminectomy," with the presentation of a patient, by Dr. J. C. Munro.

The presentation of specimens, apparatus, etc., of surgical interest is invited.

Paul Thorndike, M.D., *Secretary*, 244 Marlborough St.

WILLIAM H. THORNDIKE PRIZE.

The William H. Thorndike Prize, for 1898, has been awarded by the Faculty of the Harvard Medical School to Dr. Joseph William Courtney, of Boston. The subject of the essay was, "A Critical Study on Traumatic Cerebral Edema: Its Pathology and Surgical Treatment."

W. L. Richardson, *Dean*.

BOOKS AND PAMPHLETS RECEIVED.

Twenty-eighth Annual Report of the Central State Hospital of Virginia (Petersburg, Va.), for the Fiscal Year ending September 30, 1898.

Degeneracy; Its Causes, Signs and Results. By Eugene S. Talbot, M.D., D.D.S., Fellow of the Chicago Academy of Medicine; Member of the Chicago Academy of Sciences; Honorary Member of the Berlin Odontologische Gesellschaft. With 120 illustrations. London, Paternoster Square: Walter Scott. 1898.

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